April 14, 1995

MEMORANDUM TO: Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects I/II

FROM: Kamal A. Manoly, Chief /S/
Component Integrity Section
Mechanical Engineering Branch
Division of Engineering

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION

The attached request for additional information contains the information requested by the EMEB staff from Georgia Power Company during a conference call on April 11, 1995, concerning the licensee's response to the staff's concerns on the shroud repair. Please forward this request to the licensee.

Attachment: Request for Additional Information

CONTACT: J. R. Rajan, NRR
415-2788

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REQUEST FOR ADDITIONAL INFORMATION
GEORGIA POWER COMPANY's
HATCH NUCLEAR PLANT, UNIT 1

By letter dated January 19, 1995, the NRC staff requested Georgia Power Company (GPC) to provide additional information regarding the core shroud repair modification recently installed on Hatch Unit 1. In its response to Question No. 1, GPC stated that a gap of 0.008 'nches is calculated to occur at the H6B weld location during normal operation if 360° through-wall cracking at H2 and H3 welds is also postulated to occur. GPC had previously stated that no crack separation would occur at the lower weld location during normal operation as a result of the cracking scenario. This error was due to the failure to properly account for the loss of preload in the tie rods resulting from failure of welds H2 and H3 during the design of the repair. GPC further stated that this gap value bounds all load cases corresponding to the current licensed power and core flow and that the gap does not inhibit the ability of the repaired core shroud to perform its safety function and power generation objectives.

In these evaluations, the crack locations were modeled at the top surface of the ring for the H2 weld and the bottom surface for the H3 weld. The toe of each fillet weld was chosen as the pivot point of the through-wall crack. In order to complete its review, the staff is requesting the following additional information relating to the shroud evaluation under normal operation, upset, emergency and faulted conditions:

- The pertinent analytical model and supporting calculations performed to determine the calculated gap size as well as other conclusions stated in the response.

- The analytical models and supporting calculations used to determine the projected separation at the H6B weld for the following cases:

  Case 1. Welds H2 and H3 have 360° through-wall cracks on the shroud shell side of the fillet weld.

  Case 2. Welds H2 and H3 have 360° through-wall cracks and the fillet welds are not considered in the model.

  Case 3. Welds H2 and H3 are not cracked and the fillet welds are intact.

- Supporting documentation of the maximum stresses in the tie rod (including upper and lower attachment assemblies) and shroud wall during various design conditions.

- Evaluation of projected loss of tie rod preload and potential increase in originally-estimated gap sizes if shroud and/or tie rod stresses exceed minimum-specified yield values.

- Basis for shroud and/or tie rod yield values if they are different from minimum ASME code-specified values for the materials used.