

J. T. Beckham, Jr.
Vice President - Nuclear
Hatch Project



August 30, 1996

Docket Nos. 50-321
50-366

HL-5201

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

Edwin I. Hatch Nuclear Plant
Initial Response to NRC Bulletin 96-03

Gentlemen:

On May 6, 1996, the Nuclear Regulatory Commission (NRC) issued Bulletin (NRCB) 96-03, "Potential Plugging of Emergency Core Cooling Suction Strainers by Debris in Boiling-Water Reactors," which requests licensees to take the following actions:

1. Implement a final resolution to minimize the potential for clogging emergency core cooling system (ECCS) suppression pool suction strainers by debris that may be generated during a loss of coolant accident (LOCA) by the end of the first refueling outage starting after January 1, 1997. The NRC staff considers the time frame for implementing the final resolution to be appropriate based on interim actions previously implemented, as requested by NRCB 93-02, dated May 11, 1993; NRCB 93-02, Supplement 1, dated February 18, 1994; and NRCB 95-02, dated October 17, 1995.
2. Provide by October 3, 1996, a report describing the actions to be taken, the mitigative strategies to be used, and a schedule for implementation.

Implementation of a final resolution on Unit 2 during the Spring 1997 refueling outage, which is scheduled to commence March 15, is highly improbable based on schedule limitations; therefore, Georgia Power Company (GPC) is requesting a one cycle delay for Unit 2. The specified time frame does not allow sufficient time for the completion of necessary Boiling Water Reactor Owners Group (BWROG) testing and evaluation activities, NRC staff review of BWROG recommended resolutions, completion of plant-specific final design changes, and procurement and installation of new alternate strainers within the specified time frame. Plans are to make the necessary modifications to Unit 1 during the Fall 1997 outage, presently scheduled to commence in October 1997.

The enclosure provides a brief overview of GPC's activities relative to the performance of passive ECCS strainers, a discussion of GPC evaluation and scoping study results, and planned compensatory measures.

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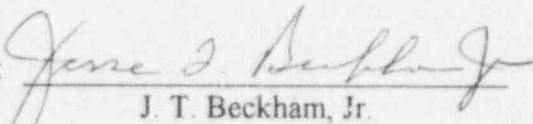
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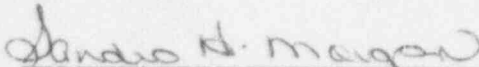
By October 3, 1996, GPC will submit an additional response addressing the full scope of NRCB 96-03 requested actions.

Should you have any questions in this regard, please contact this office.

GEORGIA POWER COMPANY

BY: 
J. T. Beckham, Jr.

Sworn to and subscribed before me this 30th day of August 1996.


Notary Public

Commission Expiration Date: April 19, 1997

JKB/eb

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cc: Georgia Power Company
Mr. H. L. Sumner, Jr., Nuclear Plant General Manager
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. Ebnetter, Regional Administrator
Mr. B. L. Holbrook, Senior Resident Inspector - Hatch

Enclosure

Edwin I. Hatch Nuclear Plant - Unit 2 Initial Response to NRC Bulletin 96-03

Georgia Power Company (GPC) has performed evaluations and scoping studies, related to suction strainer clogging, based on available data developed by the Boiling Water Reactor Owners Group (BWROG) and the conservative criteria contained in Regulatory Guide 1.82, Revision 2, dated May 1996. Hatch Unit 2 has approximately equal portions of fiber and reflective metallic insulation (RMI) installed and a new large-capacity alternate strainer is required to minimize head loss effects relative to both types of insulation. GPC's conservative scoping studies assumed that:

- Debris generated is consistent with Figure A-2 of Regulatory Guide 1.82.
- Essentially 100% of the debris generated is transported to the suppression pool.
- No debris settling occurs in the suppression pool.
- Only two of the six low-pressure ECCS pumps are assumed to be available post accident, and the debris accumulates on the strainers for the ECCS pumps.

The results of the scoping studies show that the size of the new alternate strainer, as predicted using current available information, may be so large that hydrodynamic loading margins or physical interference within the suppression pool may preclude its installation. Following are the preliminary conclusions resulting from GPC's analysis:

1. The existing installed strainers for the RHR pumps are 24 in. in diameter and 28 in. long, and for the CS pumps, the strainers are 20 in. in diameter and 24 in. long. Each of the six low-pressure ECCS pumps has two of these strainers for a total of 12 strainers per unit. Scoping studies indicate that, to maintain adequate net positive suction head margins, the RHR pumps need strainers as large as 40 in. in diameter and 28 in. long, and the CS pumps need strainers as large as 33 in. in diameter and 24 in. long. Strainers this large will result in physical interference with major suppression pool components. Consequently, achieving a final resolution for Unit 2 will be contingent upon the improved performance of a new alternate strainer design such as the stacked disc.
2. Based upon the large calculated size of the strainers, a new hydrodynamic analysis may be required. A reanalysis of the hydrodynamic loading conditions will be complex and time consuming and require NRC staff review. For Unit 2, a preliminary review shows that the existing margin in the allowable loading is small and will probably not accommodate a substantial increase in strainer size.

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3. Use of BWROG methodology and data being developed will be necessary in order to achieve an optimum resolution. The conservative bounding criteria contained in Regulatory Guide 1.82, as previously shown, result in a significant increase in strainer size. The following key parameters must be available to correctly design the new strainers.
 - Zone of influence for debris generation.
 - Destruction factors for debris generation.
 - Drywell debris transport.
 - Drywell and suppression pool debris sources.
 - Calculation methods for sizing suction strainers.
 - Performance of new alternate strainer designs.

As previously stated, this methodology has not been reviewed and approved by the NRC and is, therefore, unavailable at this time.

Based upon the above discussion, it is not possible to meet the schedule for implementation requested by NRCB 96-03. Best-effort, estimated schedules were prepared to quantify the time needed to complete the critical activities. A list of major activities and a best-estimate schedule are provided below:

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| • Complete BWROG Air Jet Testing and Transport Testing | August 1996 |
| • Complete BWROG Utility Resolution Document | September 1996 |
| • Complete NRC Staff Review of BWROG Methodology | November 1996 |
| • Prepare Final Design Change Package | December 1996 |
| • Order New Strainers | December 1996 |
| • Receive New Strainers | May 1997 |

It should be noted that the estimated completion of these activities requires acceleration of complicated testing activities and an optimistic NRC review schedule, given the amount of time and resources required by the BWROG in developing the methodology and providing the required data. Only one alternate passive strainer design may be available. Alternate strainers have not been fully tested and structurally evaluated or qualified to applicable industry or regulatory criteria. Thus, considering the technical uncertainties and remaining work activities, as well as procurement of an approved qualified strainer design, GPC requests that the implementation of a final resolution on Plant Hatch Unit 2 be extended until the Fall 1998 refueling outage.

The extension in implementation of a final resolution for one cycle of operation is justified based on the actions previously implemented in response to NRCB 93-02, including Supplement 1, and NRCB 95-02; previous safety assessments; and the implementation of additional compensatory measures. Samples of suppression pool water and particulate debris were collected and analyzed as part of previous cleaning activities. Additional samples will be collected and analyzed to identify the presence of fibrous material. Debris identified during suppression pool cleaning and

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the results of sample analyses will be evaluated to confirm that applicable foreign materials exclusion, housekeeping, and drywell and suppression pool outage close-out procedures are sufficiently effective to prevent the introduction of materials that could potentially impact the operability of the ECCS. During the Spring 1997 Unit 2 outage, GPC will ensure the suppression pool cleanliness is maintained at an acceptable level by performing a suppression pool cleaning. Since the Unit 2 pool was recently cleaned during the Fall 1995 refueling outage, the cleaning will provide additional information on the amount of sludge generated during one cycle. Further, operability of the low-pressure ECCS pumps will be confirmed by inspections of the associated suction strainers. Prior to the refueling outage, appropriate test runs of the pumps will be conducted or, alternatively, the occurrence of suppression pool cooling run times that are more than sufficient to agitate the general pool volume will be confirmed.