Georgia Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7279

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

Georgia Power
the southern electric system

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

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
RESPONSE TO A NOTICE OF VIOLATION

Gentlemen:

In response to your letter of December 6, 1991, and in accordance with the provisions of 10 CFR 2.201, Georgia Power Company is providing the enclosed response to the Notice of Violation associated with NRC Inspection Report 91-27. A copy of this response is being provided to NRC Region II for review. In the enclosures, a transcription of the NRC violation precedes GPC's response.

Sincerely,

J. T. Beckham, Jr.

OCV/cr

Enclosure

cc: (See next page.)

IE01
1/1

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
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

ENCLOSURE 1

PLANT HATCH-UNIT 1
NRC DOCKET 50-321 OPERATING LICENSE DPR-57
VIOLATION 91-27-01 AND GPC RESPONSE

VIOLATION 91-27-01

Hatch Unit 1 Technical Specification 6.8.1 requires that written procedures be established, implemented and maintained covering the activities recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Implicit in this TS is the requirement that the procedures contain adequate guidance to ensure those activities are conducted properly.

Item 4.k of Appendix A of Regulatory Guide 1.33 specifically recommends procedures be prepared for the Fuel Storage Pool Purification and Cooling System.

Item 8.a of Appendix A of Regulatory Guide 1.33 specifically recommends (in part) that procedures be provided to ensure that measuring and testing devices are properly controlled, calibrated and adjusted at specific periods to maintain accuracy.

Contrary to the above, on October 14-15, 1991 deficiencies in procedural controls caused inadequate monitoring and control of the Unit 1 spent fuel pool temperature. This resulted in spent fuel pool temperatures significantly elevated above normal values.

This is a Severity Level IV violation (Supplement 1)

This violation is applicable to Unit 1 only.

RESPONSE TO VIOLATION 91-27-01

Admission or denial of the violation:

The violation occurred as described in that the Unit 1 spent fuel pool (SFP) temperature exceeded the acceptance criterion of 120°F contained in plant procedure 34SO-G41-003-1S, "Fuel Pool Cooling and Cleanup System." The event occurred while the Fuel Pool Cooling and Cleanup (FPCCU) system was aligned to the Unit 1 reactor cavity on October 14 and 15, 1991. The maximum temperature measured in the (SFP) was 156°F; the maximum analyzed temperature is 212°F.

Reason for the violation:

The violation was caused by a less-than-adequate procedure and personnel error. Procedure 34SO-G41-003-1S does not contain adequate instructions for the installation and use of alternate temperature measuring instrumentation while the FPCCU system is aligned to the reactor cavity. In this configuration, alternate pool temperature monitoring instrumentation is necessary, since SFP

temperature is normally monitored at the FPCCU system pump. With the FPCCU system aligned to the reactor cavity, the pump no longer takes suction from the SFP.

Errors were committed by both GPC and contractor personnel in that the alternate temperature monitoring instrument was set up incorrectly, resulting in erroneous pool temperature indications which were not promptly recognized. The alternate temperature monitor was not installed by Instrument & Control (I&C) technicians, and immediate indications of improper operation were not identified by the individuals who set up the instrument. Furthermore, since the involved personnel believed the SFP decay heat load to be extremely low, they did not realize the alternate temperature monitoring instrument was not working correctly when SFP temperature indications did not increase over a period of several hours.

Other indications of increasing SFP temperature which were not promptly recognized include the failure of a temperature sensitive underwater camera, and water vapor rising from the surface of the pool.

Corrective steps which have been taken and the results achieved:

As a result of this event, involved personnel have been counseled to the effect that qualified I&C technicians are to be used for instrument installation. Furthermore, the involved individuals have been instructed as to the importance of being alert to alternate indications of abnormal conditions.

Corrective steps which will be taken to avoid further violations:

Procedures 34SO-G41-003-1S and 34SO-G41-003-2S, "Fuel Pool Cooling and Cleanup System," will be revised to include the following:

1. Prior to aligning the FPCCU system to the reactor cavity, Operations personnel will be required to have Instrument and Control personnel setup and check-out two alternate pool temperature monitoring instruments.

2. While aligned to the reactor cavity, Operations personnel will be required to check the alternate pool temperature monitoring instruments at least once an hour to ensure pool temperature remains below the procedural acceptance criterion of 120°F. The procedures will caution personnel that pool temperature will be increasing. Appropriate actions to be taken (e.g., realign the FPCCU system to the SFP, and verify the alternate temperature monitoring instruments are functioning) should these conditions not be met will also be incorporated into both procedures.

VIOLATION 91-27-01 AND GPC RESPONSE

Both procedures will be reviewed to determine whether there are any other similar situations in which alternate spent fuel pool temperature monitoring is required. If so, changes similar to those described above will be incorporated.

The reviews will be complete and the revisions effective by 6/30/92 which is prior to the next refueling outage for either unit. No further interim corrective action is required, because the FPCCU system can be aligned to the reactor cavity only during refueling outages. The next scheduled refueling outage is not until September 1992.

Date when full compliance will be achieved:

Full compliance was achieved at 1630 CDT on 10/15/91 when the spent fuel pool temperature was reduced to 116 degrees, (i.e., below the procedural acceptance criterion of 120 degrees).

ENCLOSURE 2

PLANT HATCH-UNITS 1 AND 2
NRC DOCKETS 50-321 AND 50-366
OPERATING LICENSES DPR-57 AND NPF-5
VIOLATION 91-27-02 AND GPC RESPONSE

VIOLATION 91-27-02

Criterion XVI of Appendix B of 10CFR50 requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, effective corrective actions were not promptly taken to preclude repetitive failures of service water pump motor cooling coil couplings. Numerous failures of the couplings have been identified as early as 1987. Failure of the couplings has a substantial potential to cause the loss of important safety-related pump motors. In January, 1991, the '1A' plant service water motor failed due to this problem. In October, 1991, a coupling failed in the '2A' plant service water pump motor.

This is a Severity Level IV violation. (Supplement 1)

This violation is applicable to Units 1 and 2.

RESPONSE TO VIOLATION 91-27-02

Admission or denial of the violation:

GPC respectfully denies the violation. Corrective actions were taken to address the of service water pump motor cooling coils. The scope and schedule of these actions were commensurate with the significance of the problem as known at the time. GPC Engineering evaluations and a probabilistic risk assessment (PRA) performed in November 1991 substantiate the original judgments.

Basis for denial of the violation

GPC became aware of problems with the plant service water (PSW) and residual heat removal service water (RHRSW) pump motor cooling coil failures as early as 1987. Maintenance histories indicate the problems with the coils most often occurred in the coupling. However, failures of the coupling were random in nature in that the service life between failures was not consistent. Some couplings failed after a few months of service, while other couplings failed after several years of service.

VIOLATION 91-27-02 AND GPC RESPONSE

GPC's investigation included discussions with General Electric (GE), the pump motor supplier, concerning the coupling failures. These discussions included a review of the manufacturing process for replacement couplings. GE informed Plant Hatch maintenance personnel that, to the best of their knowledge, no changes in the manufacturing process had occurrod.

GPC originally judged that methods of performing nondestructive examinations were not available to provide a reliable means for detecting problems before the couplings failed. Hydrostatic testing of the coils was added to the 5-year preventive maintenance program for the pump motors. Unfortunately, hydrostatic testing did not provide conclusive evidence of approaching failures.

Following the initial identification of potential problems with the cooling coils, routine checks of the pump motors' upper bearing oil level provided useful indications of coil failure prior to pump motor failure. A check of each pump motor's upper bearing oil level on at least a daily basis provided early warning that a coil had failed and water was displacing the oil around the upper motor bearing. In several instances, routine checks resulted in the identification and repair/replacement of a leaking coil prior to pump motor failure.

In early 1990, in an effort to eliminate the root cause of most of the coil failures, GPC requested GE to develop a cooling coil without couplings. By mid 1990, concerns with the cooling coil material were identified. Investigations indicated the copper coils were susceptible to failure because of the raw river water used in the coils as cooling water. Therefore, GPC requested GE to change the material of the coil. Interaction with GE continued on a routine basis throughout the remainder of 1990.

On 1/4/91, the 2A PSW pump motor failed due to a leak in the pump motor cooling coil. Unlike the previous cooling coil failures very little warning of cooling coil failure preceded pump motor failure. (It was estimated the pump motor failed within 2 hours of cooling coil failure.) Therefore, the corrective actions were accelerated to the extent possible based upon the increased significance of the cooling coil failures. GPC requested GE to accelerate development of the new cooling coil design which would have no couplings and be made of a new material.

On 1/24/91, GPC met with GE to discuss the progress toward an improved cooling coil design. On 2/8/91, GPC received GE's proposal to complete the design of the improved cooling coil. In March 1991, GE issued a metallurgical evaluation report definitively identifying the cooling coil coupling as the root cause of the failure.

ENCLOSURE 2 (Continued)

VIOLATION 91-27-02 AND GPC RESPONSE

On 4/1/91, GE issued to install the newly designed cooling coil on the damaged 2A PSW pump motor being repaired at a GE facility. On 4/12/91, GPC authorized GE to manufacture the improved cooling coil for installation on the damaged 2A PSW pump motor being repaired. The motor, with the prototype cooling coil installed, was received on site, placed in the warehouse, and later installed on the 1B PSW pump.

On April 4, 1991, Hatch Project Support-Licensing completed an evaluation based on the GE metallurgical report and concluded there was no significant concern with common mode failure and the problem could be reasonably controlled with changes in system operation, such as reducing the flow rate to the motor cooling coils as suggested by GE. The architect engineer for Plant Hatch was requested to evaluate these recommendations. A walkdown was performed and the Units 1 and 2 field readings on the pressure indicators to the pump motors in question were verified to be no higher than 46 psig. The pressure gauge readings were lower than the upper limit recommended by GE. It was subsequently determined that pressures lower than 70 psig at the local indicators are adequate to assure the GE-recommended flow rates at the cooling coils are maintained. No actual operational changes were necessary at that time; however, the adequacy of operations and maintenance procedures, in conjunction with the installation of the improved cooling coil design, will be reevaluated.

In May 1991, GPC requested GE to issue a quote for the purchase of the improved cooling coils for the remaining Plant Hatch PSW pump motors and for a new design for the RHRSW pump motors. However, due to problems with the manufacture of the first improved cooling coils installed on the repaired 2A PSW pump motor, GE did not provide the requested proposal until 10/21/91.

On 11/17/91, GPC issued a purchase order to GE for the the improved PSW and RHRSW cooling coils. The new coils are currently scheduled for delivery in the Spring of 1992, and will be installed as soon as possible thereafter.

The PRA performed in November 1991 concluded the probability of two or more pumps failing concurrently at about the same time due to cooling coil failure was less than the probability of two or more pumps failing due to a random failure.

Therefore, based on engineering evaluations and PRA results, GPC concluded continued operation of the PSW and RHRSW pumps with the existing coils until the newly designed coils could be obtained and installed was acceptable.

As a part of our investigation into this Notice of Violation, GPC Inspection and Testing Services (ITS) personnel were requested to investigate the possibility of performing a meaningful nondestructive examination. It is important to note

that these coils are fabricated from 0.375-inch by 0.049-inch copper tubing with brazed connections. GPC's investigation concluded that ITS does not have the technology in place to perform meaningful nondestructive examinations to detect inside diameter erosion/corrosion of 0.375-inch-diameter copper tubing. Even though an in-place examination of the coils is theoretically possible, the examination would most likely yield inaccurate results. The examination requires inserting a very small diameter eddy current/UT type probe into the line from outside the pump and taking measurements. In practice, our personnel are not familiar with such a probe, and it would probably have to be evaluated by a probe manufacturer for feasibility, fabricated, and tested on a mockup. However, even if a probe is made available, factors such as ID geometry at the brazed couplings, ID deposits, and the degree of roundness of the tubing would most likely result in a non-meaningful examination. If the coil is removed, it is theoretically possible to perform thickness measurements from the OD with a very small transducer developed for the application. Again, considerable research would be necessary to obtain such a probe and to determine the feasibility of its use.

On December 20, 1991, a 10 CFR Part 21 reportability assessment was performed. It was determined that no defect existed in the cooling coils of the PSW pump motors at the time the coils were accepted for use by GPC. GPC understands that GE evaluated the cooling coil issue for reportability under Part 21 and determined there is no reportable condition.

Conclusion

GPC believes the above-described actions were prompt and reasonable, and reflect a genuine intent to address and resolve the problem in a timely manner. When, in 1987, it was determined that the coil failures were occurring at an unacceptable frequency, actions were taken commensurate with the apparent safety significance of the problem to mitigate the consequences of the failures and to correct their causes. GPC worked with the pump motor supplier to identify and implement a permanent solution addressing the cause of the cooling coil failures. At the same time, interim actions to detect coil failure prior to motor failure were effective until this year when a PSW motor unexpectedly failed apparently within hours of a cooling coil failure. At that time, GPC, working with the pump motor supplier, accelerated corrective actions in progress at the time of the motor failure. Given the need to design and manufacture an improved cooling coil, GPC's response to the increased significance of the coil failures was proper and timely. GPC believes no violation of Criterion XVI of Appendix B of 10 CFR 50 or any other regulatory requirement occurred.