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Docket Nos. 50-321
50-366

HL-4563

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

Edwin I. Hatch Nuclear Plant
Reply to a Notice of Violation

Gentlemen:

In response to your letter dated March 22, 1994 and in accordance with the provisions of 10 CFR 2.201, Georgia Power Company (GPC) is providing the enclosed response to the notice of violation associated with Inspection Reports 50-321/94-01 and 50-366/94-01. A copy of this response is being provided to the NRC Region II for review. In the enclosures, a transcription of the NRC violation precedes GPC's response. Also, Enclosure 4 is provided, as requested, which describes the actions GPC has taken to resolve UNR 94-01-02.

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

Sincerely,

J. T. Beckham, Jr.

TWL/cr

Enclosure:
1. Violation 94-01-04 and GPC's Response
2. Violation 94-01-05 and GPC's Response
3. Violation 94-01-09 and GPC's Response
4. UNR 94-01-02 and GPC's Response

cc: (See next page.)

IE01

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

Edwin I. Hatch Nuclear Plant
Violation 94-01-04 and GPC's Response

VIOLATION 94-01-04

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

General maintenance procedure 51GM-MNT-033-0S, Torquing Procedure, step 7.3.3.1, requires studs to be at least flush with the nut head.

Administrative control procedure 20AC-BLD-001-0S, "Plant Housekeeping and Cleanliness Control," section 8, requires work areas be cleaned, materials and debris safely placed.

Contrary to the above:

a. As of February 25, 1994, activities affecting quality were not adequately prescribed in that System Operating Procedure 34SO-G41-003-2S, "Fuel Pool Cooling and Cleanup System," valve lineup sheet incorrectly indicated valve 2G41-F040 was open and valve 2G41-F001 was locked closed. However, the design document, drawing P&ID H-26039, indicated the valves were closed and unlocked closed respectively. The actual positions of the valves were consistent with the design document.

b. As of February 11, 1994, activities affecting quality were not adequately prescribed in procedures in that:

- the procedures used to determine the ability of the Residual Heat Removal, Emergency Diesel Generator, and Control Room Heating, Ventilation, and Air Conditioning heat exchangers to perform their safety-related, heat transfer function provided inadequate guidance for inspection and documentation of the as-found and as-left conditions.

- the procedure for visually inspecting the Residual Heat Removal heat exchanger provided inspection instructions for horizontal instead of vertically mounted heat exchangers.

- the procedure for cleaning the Residual Heat Removal heat exchanger tubes with air did not specify the pressure, volume, quality, or source of the air to be used.

- the quality control hold point to perform the visual inspection of the "as-found" condition of the heat exchanger internals occurred after the tubes were to be cleaned which defeated the intent of the hold point.

c. As of February 11, 1994, activities affecting quality prescribed by documented procedures were not accomplished in accordance with these procedures in that numerous Plant Service Water flanged piping connections in the intake structure had studs less than flush with the accompanying nut.

d. As of February 4, 1994, activities affecting quality prescribed by documented procedures were not accomplished in accordance with these procedures in that debris and/or excess loose scale materials were present in the lower portion of the service water intake structure and around the control room condenser units.

RESPONSE TO VIOLATION 94-01-04

Admission or denial of the violation:

The violation occurred as described in the Notice of Violation.

Example a.:

Reason for the violation:

This example was caused by an error which occurred when the procedure was being typed for revision 10. The procedure was written correctly in revision 9. However, when revision 10 was typed, two adjacent lines were reversed, changing the indicated valve positions. Proofreading, which is performed for all safety related procedures, failed to detect the error. As noted in the violation, the actual valve positions in the plant were correct. This is attributed to the fact that the error was introduced into the procedure relatively recently (first published for use 7/23/93) and, thus, had not been used in its entirety to perform the valve lineup. Secondly, had the valve lineup specified in the

procedure been used, the error would have been either of no safety significance (that is, a normally closed valve now locked closed) or immediately identified as a deficiency (that is, lining up plant service water to the spent fuel pool and locking the valve open in that position would be an obvious error).

Corrective steps which have been taken and the results achieved:

Since the valves were aligned in their correct positions, no actions were necessary to change the plant valve lineup.

Personnel responsible for the typing error and the proofreading oversight have been made aware of the error.

The error in procedure 34SO-G41-003-2S has been corrected.

Corrective steps which will be taken to avoid further violations:

No further corrective actions are necessary.

Date when full compliance will be achieved:

Full compliance was achieved on 4/13/94 when procedure 34SO-G41-003-2S was revised.

Example b.:

Reason for the violation:

This example was caused by less than adequate procedures. The violation addressed five procedures. The procedures are:

52SV-R43-001-0S, "Diesel, Alternator, and Accessories Inspection,"
52PM-Z41-002-1S, "Control Room Air Conditioning System Maintenance,"
52PM-E11-009-0S, "RHR Heat Exchanger Preventive Maintenance," and
42IT-TET-012-1S(2S), "Plant Service Water and RHR Service Water Piping Inspection Procedure."

Procedure 52SV-R43-001-0S did not include adequate acceptance criteria for inspection and documentation of the heat exchangers. The goal of the cited portion of the procedure was to ensure the heat exchangers were in good condition in preparation for use. To that end, the procedure required inspection of the heat exchangers, but placed greater emphasis on cleaning them so that the inspection of tube metal thickness could be performed.

Procedures 52PM-E11-009-0S and 52PM-Z41-002-1S had other characteristics which were judged to be less than adequate by the inspection team; namely, inaccurate wording concerning the orientation of the RHR heat exchangers, failure to adequately specify the parameters used for air cleaning the RHR heat exchangers, and a sequence of steps which apparently defeated the intent of a Quality Control hold point.

The reason for the inaccurate wording concerning the orientation of the RHR heat exchanger was that the general wording appropriate for horizontal heat exchanger applications was used during development of the procedure rather than specific wording applicable to this particular equipment. Although the procedure wording was not absolutely correct, this would not have impacted the cleaning process. When the bottom cover of the heat exchanger is removed, per the procedure, it exposes the open ends of the tubes over the worker's head. Once the tube ends are exposed, the procedure directs the worker to clean them out using compressed air. Dislodged material is discharged downward as the air passes through the U-tube. It is obvious to a qualified technician that the procedure requires cleaning of the entire U-tube assembly, not just the "upper" portion. In fact, it would be virtually impossible to clean only the "upper" portion.

The pressure, volume, quality, and source of the air used to clean the RHR heat exchangers were not specified in procedure 52PM-E11-009-0S since the service air system would be used. The service air system has historically been used as the compressed air source for cleaning the RHR heat exchangers because it is the most readily available and easily accessible air system in the vicinity of the heat exchangers. Operation and maintenance of the service air system are procedurally controlled. The service air system is supplied with filtered, oil-free air by the station service air compressors which have a maximum unregulated operating pressure of approximately 125 psig. If another air source were required, it would have been so specified in the procedure.

The reason procedures 52PM-E11-009-0S and 52PM-Z41-002-1S appeared to defeat the purpose of QC hold points was because the step order was confusing and the intent of the QC hold points was not clearly specified. The intent of the QC hold points was to have QC personnel confirm that maintenance personnel had performed inspections of the heat

exchangers, rather than actually performing the inspections. The method of confirmation was to have QC personnel attest that Maintenance Department personnel had performed the inspection and documented the inspection results per 42IT-TET-012-1S, "Plant Service Water and RHR Service Water Piping Inspection Procedure," prior to closing the heat exchangers. Procedure 42IT-TET-012-1S specifically requires an as-found inspection of Plant Service Water and RHR Service Water components and contains a special attachment for documenting the results of as-found inspections. This procedure, however, was found not to contain sufficient detail concerning inspection of heat exchanger internals and acceptance criteria for the inspection.

Corrective steps which have been taken and the results achieved:

The personnel responsible for updating these procedures have been made aware of the various inadequacies and have initiated the necessary procedure revisions.

Corrective steps which will be taken to avoid further violations:

The revisions of these procedures will incorporate additional guidance on inspecting, documenting inspection results, servicing the heat exchangers, and comparing inspection and cleaning results to more specific acceptance criteria. Careful attention will also be given to step order to ensure that the intent of the procedure is not circumvented.

Date when full compliance will be achieved:

Full compliance will be achieved by 05/31/94 when the procedure revisions will be complete.

Example c.:

Reason for the violation:

This example occurred because of personnel error by Maintenance Department personnel and less than adequate documentation of as-left conditions. Personnel error occurred when personnel did not adhere to the guidance in the torquing procedure cited in the Notice of Violation. Workers should have adjusted the thread engagement of the nuts on both ends of the studs to ensure that both nuts were at least flush with the stud ends. Further, Deficiency Cards should have been submitted on those occasions when the stud engagement requirement of the torquing procedure could not be satisfied.

Less than adequate documentation of as-left conditions occurred when plant personnel did not secure engineering approval of the degree of thread engagement actually present when the thread engagement was less than that required. The torquing procedure allows thread engagement less than flush, with engineering approval, when it is acceptable to do so. However, engineering approval was not consistently obtained for those cases where it was necessary.

Corrective steps which have been taken and the results achieved:

A detailed inspection of bolted flange connections in the intake structure has been performed to identify studs and nuts with less than the procedurally specified thread engagement. The architect/engineer (A/E) evaluated these and found that the condition had no safety significance in that the strength of the affected flange connections had not been significantly diminished.

Maintenance personnel have been made aware of these discrepancies through regularly scheduled Tool Box meetings.

Corrective steps which will be taken to avoid further violations:

No further actions are necessary to achieve full compliance.

Date when full compliance will be achieved:

Plant Hatch is in full compliance with the procedural requirements cited in the Notice of Violation.

Example d.:

Reason for the violation:

The reason for this violation was less than adequate housekeeping in the two areas mentioned in the Notice of Violation. Specifically, personnel who had been working in these areas did not pick up trash, unused tools, and equipment as required by procedure.

Corrective steps which have been taken and results achieved:

The two areas mentioned in the violation have been cleaned. Tools, trash, unused drop cords, scaffolding, and water have been removed or cleaned as appropriate. A hand rail has been replaced in the intake structure. A Maintenance Utilization Tag has been updated.

Corrective steps which will be taken to avoid further violations:

No further actions are necessary. The plant procedure on housekeeping is adequate, and sufficient Management attention has been directed toward the need for good housekeeping practices so that plant personnel are aware of Management expectations.

Date when full compliance will be achieved:

Full compliance was achieved by 04/4/94.

Enclosure 2

Edwin I. Hatch Nuclear Plant
Violation 94-01-04 and GPC's Response

VIOLATION 94-01-05

10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," requires in part, that measures 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.

Contrary to the above:

a. Between December 6, 1993, and January 20, 1994, a condition adverse to quality was not promptly identified in that licensee personnel had information indicating that the Unit 1 Plant Service Water turbine building isolation valves would not have enough motive force to fully close and did not initiate a condition adverse to quality report.

b. As of February 11, 1994, a condition adverse to quality was not promptly corrected in that intake structure sediment inspections of November 1993 documented 7 of the 10 samples above the acceptable sediment depth of 12 inches, and the sediment was not scheduled to be removed until approximately 6 months after the condition was identified.

RESPONSE TO VIOLATION 94-01-05

Admission or denial of the violation:

The violation occurred as described in the Notice of Violation.

Example a.:

Reason for the violation:

A deficiency card was not initiated in December 1993 because the method of evaluating motor operated butterfly valves in response to NRC Generic Letter 89-10 was in the process of being developed. When the information was received from the valve vendor in December it was regarded as being substantially conservative. Therefore, engineering

judgment was used in not initiating a deficiency card based on the assumed conservatism and the fact that the subject valves are tested every outage and have successfully demonstrated closure capability during system operation. GPC acknowledges that after assessing the valve torque capability, a deficiency card should have been initiated, thereby documenting the potential operability concern and the nature of the engineering judgment that had been applied.

The period between receipt of the vendor-supplied torque capabilities and the conclusion that a condition adverse to quality existed was used to determine the mechanical and electrical conditions that would provide the most limiting case for evaluating the valves' isolation capability. Once this had been identified, the architect engineer concluded that the valve may not close under the most limiting conditions, and the condition adverse to quality report was initiated and the valve operability assessed.

Corrective steps which have been taken and the results achieved:

An executive memorandum was issued to the Hatch Project support personnel emphasizing the importance of timely reporting of deficiencies. The memorandum states that it is the responsibility of each person, when a potential deficient condition has been identified, to document the deficiency. This guidance states that initial equipment operability determinations, which may be based on engineering judgment, should be made, generally, within twenty-four hours of knowledge of a potential deficient condition.

This is not intended to imply that every concern raised by off-site engineers will result in a plant site deficiency card. Rather, once corporate engineering or licensing management have concurred that a legitimate deficiency exists (i.e., an operability concern), a plant deficiency card will be initiated.

Corrective steps which will be taken to avoid further violations:

Hatch Project and architect engineering personnel will be trained on timely reporting of deficiencies. This action will be completed by June 1, 1994.

Date when full compliance will be achieved:

Full compliance was achieved by January 20, 1994 when a deficiency card was initiated for the Unit 2 turbine building isolation valves.

Example b.:

Reason for the violation:

This example occurred because interdepartmental coordination of scheduling did not result in corrective action being promptly implemented. In November 1993, sediment accumulation was measured by a diver at various locations in the intake structure suction bays. In this case, the calculated average sediment accumulation exceeded the procedural acceptance criterion. The responsible engineer submitted Maintenance Work Orders requesting the bays be cleaned by the end of January 1994; however, he did not perform an overt evaluation of the operability of the service water pumps for the period of time between November 1993 and when cleaning was to be performed. It should be noted that the areas of high sediment accumulation were those having low flow and that the areas around the suction bell of each pump were within the procedural acceptance criteria. Therefore, no significant loss of suction head or degradation in monitored pump performance in the RHR Service Water (RHRSW) system or the Plant Service Water (PSW) system was expected nor has any been observed to date.

Corrective steps which have been taken and the results achieved:

An agreement with a contract diver has been secured. Cleaning of the intake structure suction bays has begun. The responsible system engineer has been instructed to more closely coordinate inspection and cleaning of the intake structure where this is necessary. Furthermore, the system engineer has been reminded of the importance of making prompt, conscious operability evaluations following review of surveillance results.

Corrective steps which will be taken to avoid further violations:

No further corrective actions are necessary.

Date when full compliance will be achieved:

Full compliance will be achieved by 5/2/94 when the cleaning of the intake structure suction bays is expected to be completed.

Enclosure 3

Edwin I. Hatch Nuclear Plant
Violation 94-01-09 and GPC's Response

VIOLATION 94-01-09

10 CFR 50.73 requires, in part, that licensees report within 30 days "Any event or condition that resulted in the condition of the nuclear power plant, including its principle safety barriers, being seriously degraded, or that resulted in the nuclear power plant being: ... In a condition that was outside the design basis of the plant ...".

Final Safety Analysis Report, Section 9.2.7.3, requires the tube side of the Residual Heat Removal heat exchanger be maintained above the shell side inlet, thereby preventing reactor water leakage into the river water in the event of a tube leak.

Contrary to the above, in 1986, the licensee failed to report within 30 days a condition outside the design basis of the plant in that the licensee identified on five separate occasions that the pressure on the tube side of the Residual Heat Removal heat exchanger could not be maintained above the pressure on the shell side inlet for the full regime of required design conditions.

RESPONSE TO VIOLATION 94-01-09

Admission or denial of the violation

GPC respectfully denies the violation.

Basis for denial of the violation

GPC acknowledges that the 1986 determination of non-reportability set forth in the letter referenced in the NRC Inspection Report was not comprehensive, and thus would not alone be used today to justify not submitting a Licensee Event Report per 10 CFR 50.73. However, GPC maintains that the circumstances described in the Notice of Violation are still non-reportable.

Calculations by the Architect/Engineer (A/E) in 1986 involved conservative assumptions which led to the conclusion that mere compliance with the Technical Specifications performance criteria for the RHRSW pumps might not ensure that the RHRSW system

could fulfill all of its design requirements for all postulated modes of operation. However, recent evaluation of the cited conditions by GPC shows that the RHRSW system was at all times within its design basis and capable of performing its design function as a radiation barrier. Specifically, a flow control valve located on the RHR heat exchanger outlet is designed to control differential pressure between the RHRSW system and the RHR system to maintain the RHRSW system at least 20 psig above RHR system pressure. The recent evaluation has demonstrated that, given the pump performance observed on the five occasions mentioned in the Notice of Violation, the RHRSW pumps would have been able to automatically maintain RHRSW pressure greater than RHR system pressure for all postulated system operating conditions except the shutdown cooling mode which is addressed separately below. Thus, the design basis was satisfied in that, with RHRSW pressure greater than RHR pressure, any tube leakage would carry RHRSW coolant into the nuclear system rather than permitting radioactively contaminated reactor coolant to be released to the environment.

The RHRSW pump surveillance acceptance criteria which should have been in the Technical Specifications are based on worst case shutdown cooling requirements. That is, design basis tube plugging, strainer clogging, system pressure drop, etc. The test results cited in the NOV did not meet the differential pressure requirement. However, under actual shutdown cooling conditions, the heat exchanger outlet valve 2E11-F068 A/B is throttled in order to reduce RHRSW flow for temperature control. At reduced flow, pump discharge pressure increases considerably as does RHR to RHRSW differential pressure. For example, during the current Unit 2 refueling outage, typical RHRSW flow is approximately 3600 gpm while maintaining a heat exchanger differential pressure of approximately 190 psig.

It is important to realize, too, that the procedure for RHRSW pump surveillance requires throttling valve 2E11-F068 to achieve a certain flow without regard to heat exchanger differential pressure. The procedure for shutdown cooling requires throttling the valve to maintain a minimum differential pressure of 20 psig.

Based on this analysis, it is concluded that the RHRSW system remained within its design basis because it was capable of maintaining its service water pressure above the RHR system pressure for all credible postulated plant conditions. Therefore, the plant did not enter a condition requiring a Licensee Event Report per 10 CFR 50.73(a)(2)(ii)(B).

Furthermore, GPC believes there is no benefit to public safety and health derived from citing violations for conditions which may have existed eight to fourteen years in the past and have since been fully resolved.

Enclosure 4

Edwin I. Hatch Nuclear Plant
GPC's Response to UNR 94-01-02

By letter dated March 22, 1994, the NRC requested GPC to provide information that may aid in the resolution of UNR 50-321, 366/94-01-02 within 30 days from the receipt of the inspection report. Section 4.c (Mechanical Design Review) of the NRC Inspection Report provides a discussion of the unresolved issue which is also stated below.

UNRESOLVED ITEM 50-321, 366/94-01-02

The team could not fully determine that the SWSs within the containment were adequately protected from a high energy line break. The PSW system provided cooling water to the containment coolers in Unit 1. Since this system penetrated primary containment and was intended to be a closed system inside containment, it was designed to the requirements of 10 CFR 50, Appendix A, Criterion 57, "Closed System Isolation Valves." For such systems, only one isolation valve is required outside containment, the first barrier being the piping and components inside containment. In order for both of these barriers to remain intact post-accident, they must be protected against the effects of a high energy line break (HELB).

When the licensee was asked to provide evidence that the PSW piping inside the drywell was protected against HELB an informal analysis addressing the piping in two quadrants of the drywell was provided. Of 78 break locations reviewed, one recirculation line break caused an interaction between the resulting jet of water/steam and drywell cooler 1T47-B009B (1.7 feet between the break location and the cooler). The licensee judged this would be no threat to the PSW piping or the cooler. The team disagreed with this judgment, calculating that the jet would produce a force on the cooler's sheet metal exterior of approximately 425 tons which could have substantial impact on the integrity of the cooler.

Analysis of two other systems of similar configuration, i.e., closed non safety-related systems inside the containment with non-automatic containment isolation valves were requested. These were the reactor building closed cooling water system that supplied cooling water for the reactor recirculation pumps, and the drywell chilled water system that supplied cooling water for the Unit 2 drywell coolers. The licensee indicated that the architect engineer maintained that information and that severe storms at their offices significantly impaired retrieval of the requested information. Consequently, the team was unable to review these results during the course of the inspection. This is UNR 50-321, 366/94-01-02, HELB Protection for SWSs within the Containment.

Enclosure 4
GPC's Response to UNR 94-01-02

GPC RESPONSE TO UNRESOLVED ITEM 50-321,366/94-01-02

The cooling water systems which penetrate the drywell are considered closed systems inside primary containment as defined by 10 CFR 50 Appendix A, Criterion 57. The piping system pressure boundary serves as a containment barrier. Therefore, the systems are required to be protected against the adverse affects of HELBs inside containment.

The documentation available indicates the system piping inside primary containment was routed and installed in a manner to avoid potential hazards from postulated HELBs. However, GPC has been unable to retrieve the original calculations and documentation supporting the original design.

In response to the NRC's concerns, GPC initiated an HELB review to determine the potential effects on closed systems piping inside primary containment. The evaluation involved a review of 237 postulated HELBs (123 for Unit 1 and 114 for Unit 2) within two quadrants of both units. The results of this review indicate that there would be no adverse impact on the cooling water systems due to HELBs for all but six break locations within the two quadrants. These break locations consist of one on Unit 1 RHR loop B discharge piping, and five on Unit 2 loop A feedwater piping. The HELB review considered two quadrants of the drywell and assumed piping symmetry for the high energy lines in the other two quadrants. Therefore, the total number of break locations evaluated is twelve. These break locations have been further evaluated and determined to be acceptable on an interim basis. The following discussion provides the results of the HELB review for these twelve break locations.

Break locations are required to be postulated if the Cumulative Usage Factor (CUF) and the ASME Code Equation 10 stresses are less than the specified values.

UNIT 1 RHR PIPING (Two break locations)

Cumulative Usage Factor:

The review showed that, for the RHR piping data points, the cumulative usage factor is below the threshold and therefore, the break locations are not required to be postulated.

ASME Code Equation 10 Stresses:

Preliminary analysis indicates the two break locations stresses are approximately 10% higher than the threshold value for these locations. Based on previous engineering experience, a rigorous analysis and consideration of the actual material allowables would show that the calculated equation 10 stresses will be lower than the threshold level.

UNIT 2 FEEDWATER PIPING (Ten break locations)

Cumulative Usage Factor:

Six break locations are below the threshold value, and four locations exceed the Unit 2 specified CUF, but are less than what is required for Unit 1. For the interim, using the Unit 1 CUF, these locations are judged to be acceptable. Further analysis will utilize realistic CUFs.

ASME Code Equation 10 stresses:

All but one of the break locations are less than the code allowable stresses. The stresses at that point are about 5% higher than the threshold value. Based on previous engineering experience, a rigorous analysis and consideration of the actual material allowables would show that the calculated stresses will be lower than the threshold level.

SUMMARY AND ACTIONS

GPC considers the current HELB review to be sufficient for the interim, based on documentation stating that the Primary Containment satisfies applicable HELB requirements and the affected systems design requirements. The most recent HELB review concludes a total of 12 HELB locations require further analysis to document long term qualification. However, based on engineering experience and the judgment applied above, GPC does not consider these locations to represent a physical design deficiency, but rather a documentation deficiency. GPC will continue to pursue the actions required to completely resolve this issue, with current plans for completing the final analysis by November 30, 1994.