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 205 868-5086

J. D. Woodard
Senior Vice President

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

Edwin I. Hatch Nuclear Plant
Third IST Interval Program Update:
Safety Evaluation Response

Gentlemen:

By letters dated June 4, 1996 and July 24, 1996, Georgia Power Company (GPC) responded to the NRC Safety Evaluation (SE) for GPCs Third 10 - Year Interval IST Program for the Edwin I. Hatch Nuclear Plant. These letters addressed items in the SE which were denied, required a response within 60 days, were granted provisionally, or had a readily determined course of action.

Enclosure 1 addresses the remaining anomalies described in the SE which required more detailed evaluation. Relief Request RR-V-7 has been revised to clarify check valve grouping and is hereby submitted for your review in response to Anomaly 7.18. The remaining actions do not require NRC review and approval prior to implementation. Copies of new and revised Refueling Outage Justifications (ROJs) are attached for your convenience.

Full implementation of the changes described in Enclosure 1 will be accomplished by April 12, 1997. NRC Staff review of RR-V-7 as well as previously submitted requests for relief RR-V-4, RR-V-8, and RR-V-9 and the GPC position on the classification of the Reactor Core Isolation Cooling (RCIC) system represent the only outstanding items from the IST Program SE.

The latest issued version of the IST Program document is Revision 3. Revision 4 of the document is presently being processed. Documents included in the Attachments reflect the revision number of their incorporation. The current revision of the IST Program is provided to the site NRC Resident Inspector.

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

Sincerely,

J. D. Woodard

IFL/eb

Enclosure: Third IST Interval Program Update: Safety Evaluation Response

Attachments:
1. ROJ-V-25
2. ROJ-V-29
3. ROJ-V-30
4. RR-V-7
5. ROJ-V-27
6. RR-G-1

cc: *Georgia Power Company*
Mr. H. L. Sumner, 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. L. A. Reyes, Regional Administrator
Mr. B. L. Holbrook, Senior Resident Inspector - Hatch

Anomaly 7.4 - RR-V-6 and RR-V-10 (SE Sections 5.6 and 5.10)

Relief from the Code requirements of Paragraphs ISTC 4.5.1 and 4.5.2 for the Units 1 and 2 LPCI injection check valves 1(2)E11-F050A&B is not necessary because the licensee's alternate testing meets the requirements of the Code. The licensee should replace these relief requests with refueling outage justifications.

GPC RESPONSE: Notation has been made in the IST program.

Anomaly 7.7 - ROJ-V-25 (SE Section 2.1)

The licensee should revise this ROJ to include justification for not performing the Code testing for both the open and closed safety function of the HPCI steam exhaust line vacuum breakers 1(2)E41-F102 and 1(2)E41-F103. In addition, the testing used to verify the open safety function appears to test both check valves in series when there are test connections available to facilitate individual valve testing. The licensee should review their current testing methodology to determine if these valves can be individually tested.

GPC RESPONSE: ROJ-V-25 has been revised and incorporated into the IST Program. The justification for not performing the Code required testing continues to be the utilization of simple check valves as vacuum breakers. The testing used to verify the open safety function does, in fact, test both check valves in series. This test is representative of the actual performance requirements for the valves and it is clear that the valves will not pass the test unless they both open. There is no added benefit to individually testing each valve.

Anomaly 7.10 - Valve Note 11 (SE Section 2.3.1)

It appears that the licensee is crediting the quarterly exercise requirement of the maintain RHR water level stop check valves (1E11-F126A&B and 2E11-F124A&B) and the maintain core spray water level stop check valves (1(2)E21-F040A&B) by using the manual hand wheel to exercise each valve. Each valve listed is in service with another check valve with no intermediate test connections to facilitate back flow testing. If prompt closure of

these check valves on cessation or reversal of flow is required to accomplish their safety function, closure must be verified by either reverse flow testing or other positive means. Section 4.1.1 of NUREG-1482 states that if only one valve of the in series check valves is credited in the safety analysis, then verification that the pair of valves is capable of closing is acceptable for IST. The licensee should review the guidance provided in NUREG-1482 and revise their IST Program accordingly.

GPC RESPONSE: New ROJ-V-29 is attached and has been incorporated into the IST Program. The valves will be disassembled and inspected according to GL89-04, Position 2.

Anomaly 7.11 - Valve Notes 7 and 12 (SE Section 2.3.2)

It is not clear whether during testing of the core spray pump discharge check valves 1(2)E21-F003A&B, which have safety functions in both the open and closed directions, these valves are exercised to the open position and then verified closed as specified in the guidance provided in NUREG-1482, Question Group 24. The licensee should review the testing of these valves and revise their IST Program as necessary.

GPC RESPONSE: The valves are exercised open during pump quarterly surveillance or normal operation. IST Program Notes have been revised to clarify that system piping is continuously monitored by an annunciator which alarms if the piping is not full of water (i.e., check valves not fully closed). The annunciator is confirmed operable at least every 31 days.

Anomaly 7.13 - Valve Note 22 (SE Section 2.3.4)

The licensee states that forward flow operability of the service water motor cooling water check valves (1P41-F438A&B and 2P41-F306A&B) will be verified quarterly during pump testing by observation of free flow through the sight glass located downstream of the check valves. This testing verifies that some flow is achieved through the valve but does not demonstrate whether the valve is capable of passing the maximum required accident condition flow. The licensee should revise the testing of this valve to provide quantifiable acceptance criteria that will monitor for degradation in accordance with Code requirements.

GPC RESPONSE: New ROJ-V-30 is attached and has been incorporated into the IST Program. PSW Motor bearing temperatures are monitored twice daily to confirm temperatures are ≤ 165F. Cooling water supply line flow is monitored and trended each refueling outage using ultrasonic flow instrumentation in accordance with GL 89-13.

Anomaly 7.16.1 - Valves 1(2)E41-F018 (SE Section 6.1.1)

Relief valves 1(2)E41-F018 are not included in the IST Program and may have a safety function in protecting the HPCI system in accordance with the scope requirements of Paragraph ISTC 1.1. The licensee should evaluate these relief valves for inclusion in their IST program and revise their program as applicable.

GPC RESPONSE: The HPCI Barometric Condenser does not perform a safety related function. Loss of the Barometric Condenser will not prevent HPCI operation. This relief valve does not have a safety related function.

Anomaly 7.16.2 - Valves 1(2)E41-F052 (SE Section 6.1.2)

Valves 1(2)E41-F052 are only tested in the closed position. Failure of these valves to open could result in the incapability to control barometric condenser level. Therefore, it appears that these check valves have a safety function in the open position in accordance with the scope requirements of Paragraph ISTC 1.1. The licensee should evaluate the open safety function of these check valves for inclusion in their IST Program and revise their program as applicable.

GPC RESPONSE: The HPCI Barometric Condenser does not perform a safety related function. Loss of the Barometric Condenser will not prevent HPCI operation. This check valve does not have a safety function to open.

Anomaly 7.16.3 - Valves 1(2)E41-F104 and 1(2)E41-F111 (SE Section 6.1.3)

Valves 1(2)E41-F104 and 1(2)E41-F111 are included in the IST Program with a safety function of closed. However, a review of the system P&IDs indicated that if for any reason these valves were in the closed position when a vacuum is developed in the turbine exhaust line, the valves will then be required to open. Therefore, it appears that these valves have safety positions of open and closed

in accordance with the scope requirements of Paragraph 1.1. The licensee should evaluate the open safety function of these check valves for inclusion in their IST Program and revise their program as applicable.

GPC RESPONSE: The IST Program has been revised to include a safety position of open and closed for these valves.

Anomaly 7.17.1 - Valves 1(2)E11-F006A-D (SE Section 6.2.1)

Valves 1(2)E11-F006A-D are identified with a safety position of open. These valves may be required to close if the suction of one RHR pump is to be isolated from the suction of the other RHR pump (in the same train) during the SDC mode of the system. If this system configuration is, in fact, a valid one at Hatch, then these valves should have safety positions of open and closed. The licensee should evaluate the closed safety function of these valves for inclusion in their IST Program and revise their program as applicable.

GPC RESPONSE: For design basis events initiated during SDC mode, these valves may be required to close to allow opening the desired 1E11-F004 valves. The IST Program will be revised by April 12, 1997 to incorporate the required testing in the closed direction.

Anomaly 7.17.2 - Valves 1(2)E11-F003A&B and 1(2)E11-F047A&B (SE Section 6.2.2)

Valves 1(2)E11-F003A&B and 1(2)E11-F047A&B are identified with a safety position of open. Should the plant require LPCI injection in a configuration which bypasses the RHR heat exchanger, these valves would be required to close. If this system configuration is, in fact, a valid one at Hatch, then it would appear that these valves should have safety positions of open and closed. The licensee should evaluate the closed safety function of these valves in their IST Program and revise their program as applicable.

GPC RESPONSE: These valves are normally open and remain open for all design basis events as determined by the scope review for the GL89-10 program. They are conservatively included in the IST Program with a safety function to open in response to an automatic LOCA signal. No changes to the IST Program are required.

Anomaly 7.17.3 - Valves 1(2)E11-F119A&B (SE Section 6.3.1)

Motor operated valves 1(2)E11-F119A&B, which serve as cross-tie isolation valves between the two trains of RHRSW on Units 1 and 2, are not included in the Hatch IST Program. NUREG-1482, Table 2.2, lists cross-tie valves in BWR service water systems as valves with safety functions that are frequently omitted from IST Programs. Their safety functions would be to open to allow cross-tie of the two trains of RHRSW and to close to isolate the trains from each other. The licensee should determine if these valves do have a safety function and revise their IST program as applicable.

GPC RESPONSE: These valves are normally closed and remain closed for all design basis events as determined by the scope review for the GL89-10 program. No changes to the IST Program are required.

Anomaly 7.18 - RR-V-7 (SE Section 5.7)

The licensee should clarify the testing and inspection plan for the HPCI suppression pool pump suction check valves 1(2)E41-F045. If these valves are considered a group of two with one valve in the group tested every refueling outage, then the check valve inspection frequency is in accordance with the guidance of GL 89-04, Position 2, and the supplemental guidance provided in NUREG-1482. A specific request for relief from the Code requirements is not required if the guidance provided in the generic letter is met.

GPC RESPONSE: RR-V-7 has been revised to clarify that these two valves are two groups of one valve. NRC review and approval is required.

ROJ-V-27 (SE Appendix C)

The proposed disassembly and inspection frequency and method is consistent with the guidance provided in GL89-04, Position 2. Any extension of the disassembly and inspection frequency should be implemented in accordance with Position 2. The licensee should also note that extension of the disassembly frequency to every other refueling outage is permissible only in cases of extreme hardship.

GPC RESPONSE: ROJ-V-27 has been revised to clarify that disassembly and inspection frequency is at least one of the two valves each refueling outage.

RR-G-1 (SE Section 3.1.4)

The alternative was authorized pursuant to 10CFR50.55a(a)(3)(i) in the letter from the NRC dated August 29, 1995, based on the alternative providing an acceptable level of quality and safety. The licensee should revise their IST program to indicate that the requirements of Appendix I augment the rules of Subsection ISTC in their IST program.

GPC RESPONSE: RR-G-1 has been revised to clarify the applicability of Appendix I.

ATTACHMENT 1

REFUELING OUTAGE JUSTIFICATION

ROJ-V-25

REFUELING OUTAGE JUSTIFICATION

ROJ-V-25

SYSTEM: HPCI (1E41 and 2E41)

VALVE(S): 1E41-F102, 1E41-F103
2E41-F102, 2E41-F103

CATEGORY: C

CLASS: 2

FUNCTION: Steam Exhaust Line Vacuum Breakers

TEST REQUIREMENT: Verify forward flow exercise and reverse flow closure quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION: Open exercising of these in series simple check valves cannot be confirmed quarterly during surveillance testing because there is no instrumentation provided that can be used to determine each valve's disk movement.

Close exercising of these in series simple check valves cannot be confirmed quarterly during surveillance testing because there is no available indication that each valve is actually closed.

Individually exercising these in series check valves during normal operation would require the HPCI turbine exhaust vacuum relief line to be isolated thus rendering the HPCI system inoperable per Technical Specification definition.

ALTERNATE TESTING: During the local leakrate test for valves 1(2)E41-F104 and 1(2)E41-F111 the piping is pressurized between valves 1(2)E41-F111 and 1(2)E41-F104. Valve 1(2)E41-F103 is then vented as part of the test to exercise both check valves open thus ensuring their vacuum breaker function since this flow rate will be greater than that required for vacuum relief.

Closure of at least one of the in series valves is proven during quarterly HPCI pump surveillance testing. If at least one of the valves did not close, steam would bypass the suppression pool into the torus bay air space and cause a resultant temperature increase.

Reverse flow closure is also proven in conjunction with LLRT of valves 1(2)E41-F104 and 1(2)E41-F111. With the boundary between valves 1(2)E41-F104 and 1(2)E41-F111 pressurized, separate vents for the 1(2)E41-F102 and 1(2)E41-F103 are individually opened in a sequence that confirms each valve to be closed.

The Appendix J, type C LLRT or a similar pressure decay type test will be performed at least each refueling outage to confirm individual open and close exercising of valves 1(2)E41-F102 and 1(2)E41-F103.

ATTACHMENT 2

REFUELING OUTAGE JUSTIFICATION

ROJ-V-29

REFUELING OUTAGE JUSTIFICATION

ROJ-V-29

SYSTEM: RHR & Core Spray (CS) Systems

VALVE(S): 1E11-F126A,B
1E21-F040A,B
2E11-F124A,B
2E21-F040A,B

CATEGORY: C

CLASS: 2

FUNCTION: Jockey Pump to RHR & CS System Keep-Fill Isolation Valves

TEST REQUIREMENT: Reverse flow closure quarterly per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located in the jockey pump supply piping to the RHR and Core Spray System piping. These valves isolate the non-safety related jockey pump system piping from the safety related RHR and CS System piping and are required to close to maintain the safety related piping full of water.

The jockey pumps are in operation during normal plant operation and there is no way of isolating the individual check valves for testing. There are no connections provided which would allow for any testing which could be used to verify valve closure while the jockey pump system is in operation.

ALTERNATE TESTING: One valve for each unit will be disassembled, manually exercised and visually inspected each refueling outage per the guidance of GL 89-04. The valve internals will be confirmed as structurally sound (no loose or corroded parts) and the disk manually exercised to confirm full stroke capability.

If the disassembled valve is not capable of being manually full stroke exercised or there is binding or failure of valve internals, the remaining valves from that unit will be disassembled, inspected and manually exercised per the guidance of GL 89-04, Position 2.

Partial flow exercising after re-assembly is confirmed by filling the subject RHR & CS piping utilizing the associated jockey pump.

ATTACHMENT 3

REFUELING OUTAGE JUSTIFICATION

ROJ-V-30

REFUELING OUTAGE JUSTIFICATION

ROJ-V-30

SYSTEM: Plant Service Water (PSW)

VALVE(S): 1P41-F438A,B
2P41-F306A,B,

CATEGORY: C

CLASS: 3

FUNCTION: PSW Pump Motor Cooling Check Valve

TEST REQUIREMENT: Forward flow operability quarterly per ISTC 4.5.1

BASIS FOR JUSTIFICATION: These valves are located in the PSW pump motor cooling water supply lines. Both PSW pump motors in a division are provided with cooling water flow anytime that any PSW pump in that division is in operation. There is no installed instrumentation which can be utilized for measuring the flow in the cooling water piping to ensure that the valve is exercised open.

PARTIAL EXERCISING: Each valve is corfirmed to be at least partial exercised during performance of operator daily rounds by monitoring the PSW pump motor bearing temperatures. Motor bearing temperatures are confirmed to be $\leq$ 165°F twice daily during normal rounds.

ALTERNATE TESTING: The GPC PSW flow monitoring program developed in response to NRC GL 89-13 utilizes ultrasonic flow measuring devices each refueling outage to measure the flow in each PSW pump motor cooling water supply line. These measurements are trended to ensure that proper cooling water flow is provided to the PSW pump motors.

Ultrasonic flow measurement of each cooling water supply line each refueling outage in conjunction with daily pump motor bearing temperature monitoring ($\leq$ 165°F) confirms that the subject check valves are open sufficiently to perform their safety related function. Such flow measurement and temperature monitoring should also ensure that any check valve degradation is detected and corrected prior to valve failure.

ATTACHMENT 4

RELIEF REQUEST

RR-V-7

RELIEF REQUEST

RR-V-7

SYSTEM: HPCI

VALVE: 1E41-F045
2E41-F045

CATEGORY: C

CLASS: 2

FUNCTION: HPCI Pump Suction (Alternate source from suppression pool)

TEST REQUIREMENT: Verify forward flow operability quarterly per ISTC 4.5.1 and ISTC 4.5.2.

BASIS FOR RELIEF: This normally closed check valve is located on the HPCI pump suction line from the suppression pool. The valve does not experience flow during any normal mode of reactor operation or shutdown conditions or during HPCI pump surveillance testing. The normal suction source for the HPCI pump is the condensate storage tank (CST) for periodic surveillance testing and ECCS injection. The pump suction transfers to the suppression pool upon indication of a low water level in the CST which would only occur during an extended HPCI injection because 100,000 gallons of water are always maintained in the CST for ECCS usage.

Forward flow exercising this valve would require aligning the HPCI pump suction to the suppression pool and discharging to the CST. This flow path would significantly degrade the water quality in the CST.

ALTERNATE TESTING: For each unit (1 valve/group/unit), every other refueling outage the valve will be disassembled, manually exercised and visually inspected to confirm that it is capable of full stroking and that its internals are structurally sound (no loose or excessively corroded parts). This frequency is considered adequate to detect degradation which would prevent the valve from meeting its safety function. The valve remains in the closed position in a torus water environment and does not experience flow which could cause wear. Additionally, past disassemblies and inspections have shown little, if any, degradation other than the expected minor corrosion.

Generic Letter 89-04 requires that a partial flow test be performed on check valves that are disassembled prior to their return to service. There is no possible flow path available for partial flow testing this check valve that would not introduce suppression pool water into the HPCI system piping or back to the CST. This is a simple swing check valve (Powell Fig. 1561-WE) which does not require removal of the valve internals to perform a manual stroke test or visual inspection. Even if exercising/inspection

resulted in valve repairs, the valve could still be manually stroked after the internals were reinstalled in the valve.

Therefore, full stroke capability of the valve is ensured prior to installation of the bonnet cover.

This relief request is required because all of the requirements (partial exercise after reassembly, and frequency of disassembly (every other outage)) of GL 89-04, Position 2, are not practicable.

ATTACHMENT 5

REFUELING OUTAGE JUSTIFICATION

ROJ-V-27

REFUELING OUTAGE JUSTIFICATION

ROJ-V-27

SYSTEM: Plant Service Water (1P41)

VALVE(S): 1P41-F552A & C

CATEGORY: C

CLASS: 3

FUNCTION: Diesel Generator Cooling Water Discharge Line Check Valve

TEST REQUIREMENT: Verify forward flow exercise quarterly or at cold shutdown per ISTC 4.5.1

BASIS FOR JUSTIFICATION:

These normally open check valves are located in the cooling water discharge lines from diesel generators 1A and 1C. There are no system design provisions to measure cooling water flow and thus verify forward flow operability.

Each diesel generator is operated for a minimum of one hour at 1710 - 2000 kW (approx. 60 percent of continuous rated load) during testing once each month. Partial forward flow operability is verified during this test by monitoring diesel generator oil and jacket cooling water temperatures. If sufficient cooling water flow was not provided to the diesel generator, elevated oil and jacket cooling water temperatures would be evident.

Each diesel generator is also operated for a minimum of one hour at 2250 - 2400 kW (approx. 80 percent of continuous rated load) semi-annually. Partial flow operability is again verified during this test by monitoring diesel generator oil and jacket cooling water temperatures.

During each refueling outage (at least once per 18 months) each diesel generator is operated for a minimum of 24 hours. During the first two hours of this test, the diesel is loaded to $\geq$ 3000 kW (approx. 105 percent of continuous rated load) and during the remaining 22 hours of this test, the diesel is loaded to 2775 - 2825 kW (approx. 90 percent of continuous rated load). Diesel generator oil and jacket cooling water temperatures are monitored during this test to ensure that sufficient cooling water is provided.

Acceptable operation of the diesel generators during the monthly and semi-annual tests verifies that the valves are not stuck in the closed position. Acceptable operation of the diesel generators during each refueling outage test verifies that the check valves have opened sufficiently to perform their design function. The diesel generator oil and jacket cooling water temperatures for each test are trended to ensure no significant changes occur from test to test.

ALTERNATE TESTING: Existing monthly and semi-annual diesel surveillance testing will be utilized to prove at least partial check valve exercising. The existing refueling outage frequency diesel testing will be utilized to confirm that the valves will open sufficiently to perform their design safety function.

Additionally, at least one of the two valves will be disassembled, manually exercised and visually inspected each refueling outage on a rotating frequency in accordance with NRC GL 89-04, Position 2. This disassembly frequency should be adequate to detect any valve degradation in sufficient time to take corrective action and prevent the valve from being unable to performing its safety function.

The valves are flanged into the system piping and are completely removed when inspected. The valve is visually inspected and manually full stroke exercised prior to being reinstalled in the pipe line. The valve disassembly is performed prior to the 24 hour diesel surveillance test, thus the safety function of the valve is confirmed after reassembly by monitoring diesel generator cooling during testing. This diesel testing confirms at least partial valve exercising after reinstallation in the system.

Existing diesel generator surveillance testing in conjunction with the periodic disassembly and inspection should confirm the capability of the valves to perform their intended safety function and should identify any degradation concerns prior to the valves becoming inoperable.

ATTACHMENT 6

RELIEF REQUEST

RR-G-1

GENERAL RELIEF REQUEST

RR-G-1

SYSTEMS: All in Scope of IST Program

VALVES: All in Scope of IST Program

PUMPS: All in Scope of IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The version of 10 CFR 50 in effect on January 1, 1995, paragraph 50.55a(b)(2) specifies the applicable Code to be the ASME XI, 1988 Addenda through 1989 Edition. The 1989 Edition of ASME XI references OM part 6 and 10 for inservice pump and valve testing respectfully. Paragraph 50.55a(b)(2)(viii) specifies the Code applicable inservice pump and valve testing to be the ASME/ANSI part 6 and ASME/ANSI part 10 of the OMa-1988 Addenda to the OM-1987 Edition

BASIS FOR RELIEF: The ASME/ANSI OM document was issued as a Code with the ASME OM Code 1990 Edition. This edition was amended with the OMa Code 1991 Addenda, the OMb Code 1992 Addenda, and the OMc Code 1994 Addenda. The ASME OM Code 1995 Edition was issued in early 1995. With each addenda and edition of the ASME OM Code, the ASME OM Code Committee has included updated inservice testing requirements based on improved knowledge, operating history and experience and changes in testing technology. Beginning with the ASME OM Code 1990 Edition, the format of the document was also changed to read like a Code instead of a standard as it was initially drafted. Therefore, application of later versions of the ASME OM Code, than specified in 10 CFR 50, should enhance the quality of the IST Program.

ALTERNATE TESTING: The versions of the ASME OM Code utilized for the updated E. I. Hatch, Unit 1 and 2, Inservice Testing Program shall be as specified below.

Inservice Testing of Valves (all except safety/relief valves) - ASME OM Code 1990 Edition

Inservice Testing of Pumps - ASME OM Code 1990 Edition

Inservice Testing of Safety/Relief Valves - ASME OM Code 1995 Edition (The requirements of ASME OM Code 1995 Edition, Appendix I, augment the rules of Subsection ISTC 4.4.)