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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 REQUEST FOR ADDITIONAL INFORMATION ON
PLANT HATCH ISI PROGRAM FOR SECOND INTERVAL

Gentlemen:

By letter dated July 7, 1988, the Nuclear Regulatory Commission (NRC) requested Georgia Power Company (GPC) to provide additional information regarding the Hatch Unit 1 and 2 Inservice Inspection (ISI) Program for the second 10-year interval. Our responses to your requests are contained in Enclosures 1 and 2. An uncontrolled copy of the Plant Hatch Units 1 and 2 Second 10-year Examination Plan is provided in Enclosure 3.

We hope the enclosed material will be helpful in your review. You may contact this office if you have questions.

Sincerely,

W. G. Hairston, III
Senior Vice President
Nuclear Operations

GKM/km

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Enclosures:
1. Response to RFAI on Second 10-Year ISI Interval
2. Technical Position on Regulatory Guide 1.150, Revision 1
3. Second 10-Year Examination Plan for Both Units

c: (See next page.)

Georgia Power

c: Georgia Power Company (w/o Enclosure 3)
Mr. H. C. Nix, General Manager - Hatch
Mr. L. T. Gucwa, Manager Licensing and Engineering - Hatch
GO-NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. P. Crocker, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II (w/o Enclosure 3)
Dr. J. N. Grace, Regional Administrator
Mr. J. E. Menning, Senior Resident Inspector - Hatch

Georgia Power

ENCLOSURE 1

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION ON
PLANT HATCH ISI PROGRAM FOR SECOND INTERVAL

The following is a response to the NRC Request for Additional Information (RFAI) on the Plant Hatch ISI program (L. P. Crocker to W. G. Hairston, III) dated July 7, 1988.

2.A NRC Request for Additional Information (RFAI)

Provide isometric drawings showing the welds, components, and supports which the ASME Code requires to be examined during the second 10-year interval.

GPC Response

The details of our inspection program for the second 10-year interval are contained in a document entitled "Second 10-Year Examination Plan" for each unit. Included within the document are isometrics, itemized listings of the components subject to examination, NDE procedure references, and other descriptive data necessary to implement the ISI program. The Inservice Inspection Program document, as previously submitted, contains sufficient detail for the staff to determine that our program meets applicable regulations and codes. Notwithstanding, enclosed is the latest copy of our plan document for each unit (3 volumes/unit) for your information and use. It should be noted that this is an uncontrolled copy of our Second 10-year Examination Plan.

2.B NRC RFAI

Provide an itemized listing of the components subject to examination during the second 10-year interval.

GPC Response

See Response to RFAI 2.A.

2.C NRC RFAI

Provide a list of the nondestructive examination procedures that are to be used during the second inspection interval.

GPC Response

See Response to RFAI 2.A.

2.D NRC RFAI

Section 1.4 of the ISI Program states, in part: "...the classification of components as ASME Class 1, 2, or 3 equivalent for this program does not imply that the components were designed in accordance with ASME requirements". Section 1.9 states: "The acceptance standards for Class 1, 2, and 3 components will be either Article IWB-3000 or the Section III construction code for the plant, as applicable. ...The acceptance standards for Class 1, 2, and 3 component supports will be either IWF-3000 or the Section III construction Code for the plant, as applicable".

GPC Response

The first three paragraphs of Section 1.9 will be deleted and replaced with the following statement:

"Standards for examination evaluation of (ASME Class) CL 1, 2, and 3 components, including component supports, will be in accordance with Article IWA-3000."

2.E NRC RFAI

Augmented examinations have been established by the NRC when added assurance of structural reliability is deemed necessary. Examples of documents which may require augmented examination are:

(1) High Energy Fluid Systems Protection Against Postulated Piping failures in Fluid Systems Outside Containment, Branch Technical Position ASB 3-1;

(2) Regulatory Guide 1.150, Ultrasonic Testing of Reactor Vessel Welds During Pre-service and Inservice Examinations;

(3) NUREG-0619, BWR Feedwater Nozzle and CRD Return Line Nozzle Cracking;

ENCLOSURE 1 (Continued)
RESPONSE TO RFAI - HATCH ISI PROGRAM

(4) NUREG-0803, Integrity of BWR Scram System Piping; and

(5) Generic Letter 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping (ref NUREG-0313).

Address the degree of compliance with each of the above and discuss any other augmented examination(s) which are being incorporated in the Edwin I. Hatch Nuclear Plant, Unit 1 and 2, Second 10-Year Interval ISI Program.

GPC Response

(1) Regarding ASB 3-1, Hatch Unit 1 is committed to a December 1972 NRC letter from A. Giambusso concerning High Energy Pipe Breaks Outside Containment, in which augmented examinations were not required. In an October 9, 1975 letter from the NRC to GPC, the NRC documented a GPC commitment to perform the following augmented inspections on Hatch Unit 2:

> "The applicant will provide the design criteria that has been utilized to design the piping between the Containment Isolation Valves. The applicant has stated that breaks have not been postulated in these areas. The applicant will commit to provide 100% volumetric inspection of pipe welds in these areas on a best effort as accessible basis."

The above commitment applies to Main Steam Feedwater, High Pressure Coolant Injection (HPCI) Steam, Reactor Core Isolation Cooling (RCIC) Steam, and Reactor Water Clean Up (RWCU).

(2) Subsequent to issuance of Regulatory Guide (RG) 1.150, we upgraded our Nondestructive Examination (NDE) Procedures associated with Reactor Vessel Pressure (RPV) examination to include applicable technical guidance contained in the Regulatory Guide which we considered beneficial to quality. These NDE Procedures are available on site for NRC review at any time. Enclosure 2 provides a summary of GPC's technical position relative to RG 1.150.

(3) GPC complies with NUREG-0619 as defined in January 22, 1981 and April 4, 1985 letters from GPC to the NRC. Examinations of the feedwater nozzle bore, inside blend radii, and safe-end welds are conducted in accordance with Table 2 and Section 4.3.2.3 of the NUREG. On Hatch Unit 1, the feedwater nozzles were declad and triple sleeved, and double piston spargers were installed during the Spring 1979 outage. Hatch Unit 2 was declad and had welded in spargers installed prior to operation.

On both units at Hatch, the Control Rod Drive (CRD) return line was cut, capped, and rerouted to feedwater via a thermal tee connection in the RWCU line. Examination of this connection is performed each refueling outage, to the extent practical, in order to detect thermal stress cracking.

(4) GPC's position with regard to NUREG-0803 is as defined in our March 5, 1982 letter to the NRC. As a result, the welds on the scram discharge header are examined as Class 2 welds per IWC-2000.

(5) GPC's position with regard to Generic Letter 88-01 is as defined in our letter, SL-4489, dated June 30, 1988, which was submitted to the Commission for review.

(6) In addition to the augmented examinations discussed above, GPC also performs augmented examinations, as described in our 10-Year Examinations Plan, relative the the following:

a. IEB 80-13	Core spray spargers
b. -----	RPV head thickness
c. GE SIL 330	Jet pump beams
d. GE SIL 420	Jet pump sensing lines
e. GE SIL 433	Shroud head bolts

2.F NRC RFAI

Section 3.0 of the ISI Program states that, based on the 74S75 Code Section XI, the pressure/temperature exemption will not be used for welds in the Residual Heat Removal (RHR), Core Spray (CS), and HPCI systems. The control of water chemistry to minimize stress corrosion is not an acceptable basis for exempting components from examination because practical evaluation, review, and acceptance standards cannot be defined. Verify that the chemistry control exclusion of 74S75 paragraph IWC-1220(c) will not be used.

GPC Response

The chemistry control exclusion of 74S75 paragraph IWC-1220(c) is not being used at this time by GPC at Plant Hatch as a basis for exemption.

2.G NRC RFAI

Paragraph 10 CFR 50.55a(b)(2)(iv) requires that ASME Code Class 2 piping welds in the RHR, Emergency Core Cooling (ECC), and Containment Heat Removal (CHR) systems be examined; these systems should not be completely exempted from inservice volumetric examination based on Section XI exclusion criteria contained in IWC-1220. Later editions and addenda of the Code require volumetric examination of Class 2 welds in piping with greater than or equal to 3/8-inch nominal wall thickness and greater than 4-inch nominal pipe size (NPS). The staff has previously determined that a 7.5% augmented volumetric sample constitutes an acceptable resolution at similar plants. Verify that volumetric examination will be performed on at least a 7.5% sample of the Class 2 piping welds in these systems.

GPC Response

As required by 10 CFR 50.55a (Code of Federal Regulations), the extent of examinations for all Class 2 ECCS piping welds was determined by the requirements of Paragraph IWC-1220, Table IWC-2520 (Category C-F and C-G welds), and Paragraph IWC-2411 of Section XI, 1974 Edition with Addenda through Summer 1975. To make this plan even more comprehensive, those welds with high stress values were selected for examination to the extent practical.

However, some exemptions allowed by Section XI such as pressure/temperature were not used for particular systems. The following summarizes the general weld selection criteria for Class 2 systems:

RHR, Core Spray, and HPCI

1. GPC examines the required welds within the 10-year interval using the 1974 Code with Addenda through Summer 1975 for selection, and the 1980 Code with Addenda through Winter 1981 for technique.

2. High stress and terminal end locations are selected when practical.

3. The pressure/temperature exemption is not applied.

4. In addition to Code requirements, GPC examines (UT or surface as applicable) welds on branch connection lines greater than one inch in diameter that could impact the safety-related function of the system out to the first closed manual valve, reverse check valve, or power operated valve. Otherwise, component connections, piping and associated valves, and vessels (and their supports), that are 4 inches nominal pipe size and smaller are exempt. A minimum of 7.5% of the total welds will be examined (volumetric or surface as applicable) each 10-year inspection interval.

5. GPC examines 100% of attachment welds within 10 years where the base material of the attachment is greater than or equal to 3/4 inches thick.

Other Class 2 Systems

As permitted in 10 CFR 50.55a, the remaining Class 2 piping welds were selected using the 1974 Edition of the Code with Addenda through summer 1975. The following components were exempted per IWC-1220:

1. Components in systems where both the design pressure and temperature are equal to or less than 275 psig and 200°F, respectively.

2. Components in systems or portions of systems, other than ECC systems, which do not function during normal reactor operation.

3. Component connections, piping and associated valves, and vessels (and their supports), that are four inches NPS and smaller.

2.H NRC RFAI

Relief Request 2.1.1 includes discussion of performing the Code-required volumetric examination on Reactor Pressure Vessel closure head welds (Examination Category B-A, Items B1.21 and B1,22) as well as beltline region welds (Items B1.11 and B1.12). Specific relief is being requested for the beltline region welds; however, in the justification for the closure head welds, it is indicated that relief from the Code-required volumetric examination may not be required and it is stated that: "If it is found during examinations that 100% coverage cannot be obtained, specific relief will be requested at that time".

GPC Response

During the 1985 update to the 1980 Code, the NRC had several questions concerning the extent of examination possible on the RPV to meet the requirements of the new Code. The existing discussions under Items B1.21 and B1.22 defined the best estimate at that time for the examination of the bottom head and closure head welds. As there is no relief required from the code at this time for Category B1.21 or B1.22, these sections will be deleted from relief request 2.1.1.

2.1 NRC RFAI

Relief Request 3.1.2 requests relief from performing the Code-required surface examination of the welded attachments on RHR, CS, HPCI and RCIC suction lines to the torus. As an alternative, the Licensee proposes performing a visual examination (VT-1) of the subject welds at Unit 2 and performing a best effort magnetic particle (MT) examination of the subject welds at Unit 1.

The Safety Evaluation Report (SER), dated September 29, 1986, granted relief for two of the welds (1E51 and 1E41) at Unit 1 based on a significant percentage (80-100%) of the weld surface receiving a Code-required surface examination (MT). For the remaining welds at Unit 1 and all of the subject welds at Unit 2, relief was denied based on the fact that the paint on these welds precludes not only dye penetrant surface examination, but also visual examination. Also, the Licensee had not given sufficient justification (man-hours and radiation exposure) that removal of the paint and performance of a dye penetrant examination is impractical.

Relief Request 3.1.2, as submitted February 24, 1988, does not appear to contain any information different from that evaluated in the SER, dated September 29, 1986. Therefore, provide further technical justification as to why relief should be granted for those welds for which relief was previously denied in the September 29, 1986 SER.

GPC Response

In reviewing your request for additional information, we have determined that the welds in question are actually part of the primary containment and, as such, are outside the scope of our Section XI ISI Program. Relief Request 3.1.2 will, therefore, be withdrawn as it is no longer deemed applicable.

2.J NRC RFAI

General Relief Request 8.1.1 requests relief from the requirements of Section XI, Appendix III, which delineates the requirements for design and fabrication of basic calibration blocks used for ultrasonic examination of Class 1 and 2 piping systems. The Licensee's justification for relief states, in part:

> "Correlation of ultrasonic data with previous examinations as required by Subarticle IWA-1400 of Section XI makes it necessary that these basic calibration blocks be used so future examination results can be correlated with past results."

Discuss the impact of obtaining appropriate calibration blocks made from material of the same nominal diameter, nominal wall thickness or pipe schedule, and material specifications as the pipe to be examined. Also discuss why the Code-required calibration blocks could not be used in conjunction with the ones used during previous examinations to provide correlations with the previous examination data.

GPC Response

It is GPC's position that obtaining calibration blocks solely to meet the 1980 Code would require unwarranted expenditures of time and money (approximately $300,000) without a corresponding increase in safety. The use of the existing blocks with side-drilled holes as calibration reflectors provides meaningful and thorough examinations, which provides adequate assurance of structural integrity. The following is a list of actions required to obtain approximately fifty (50) 1980 Code calibration blocks:

1. Design calibration blocks
2. Prepare approximately 50 new drawings
3. Locate sources of materials
4. Develop purchase orders and procure material
5. Special order or have manufactured any material not available
6. Audit all suppliers to ensure traceability
7. Verify material received and test as needed
8. Develop list of qualified machine shops
9. Develop specifications for fabrication and send out bids
10. Award bid and audit machine shop

11. Have blocks machined
12. Measure and verify all dimensions to be in tolerance
13. As-built calibration block drawings
14. Place in Plant Hatch inventory system
15. Run comparisons between old and new blocks
16. Revise Second Ten-Year Examination Plans to reflect new numbers

2.K NRC RFAI

Provide a list of the ultrasonic calibration standards being used during the second 10-year intervals at Hatch Units 1 and 2. This list should include the calibration standard identifications, material specifications, and sizes.

GPC Response

A summary listing of calibration blocks currently used at Plant Hatch is provided for your information. Due to changing requirements and techniques, the actual calibration blocks used are subject to change at any time.

Calibration Block Listing
(Information Only)

ID Number	Block Description	ID Number	Cal Block Description
2-H	6" Sch. 80 SA-376, Tp. 304	28-H	Pump Stud; 2-3/4" Diam. SA-540, Gr. B-23
4-H	3" Sch. 80 SA-106, Gr. B	29-H	28"-1.50" Nom. Wall SA-106, Gr. B
5-H	6" Sch. 80 SA-106, Gr. B	30-H	Step Block SA-36
7-H	4" Sch. 80 AISI-SE-1043	36-H	RPV Block SA-508, Cl. 2
10-H	10" Sch. 80 SA-106, Gr. B	37-H	9"-1.60" Nom. Wall SA-508, Cl. 2
11-H	24" Sch. 80 SA-106, Gr. B	43-H	14" Sch. 100 SA-333, Gr. 6
12-H	24" Sch. 80 SA-106, Gr. B	45-H	24" Sch. 30 SA-106, Gr. B
13-H	14" Sch. 120 SA-106, Gr. B	46-H	18" Sch. 100 SA-106, Gr. B
14-H	20" Sch. 80 SA-106, Gr. B	50-H	6" Sch. 120 SA-333, Gr. 6
15-H	12" Sch. 100 SA-106, Gr. B	51-H	20" Sch. 100 SA-333, Gr. 6
17-H	12" Sch. 60 SA-312, Tp. 304	52-H	8" Sch. 100 SA-106, Gr. B
18-H	10" Sch. 80 SA-312, Tp. 304	53-H	16" Sch. 100 SA-106, Gr. B
21-H	.75" Plate SA-312, Tp. 304	54-H	10" Sch. 100 SA-106, Gr. B
22-H	1.5" Plate SA-240, Tp. 304	56-H	12" Sch. 80 SA-333, Gr. 6
23-H	RPV-Stud; 6-1/4" Diam. SA-29	61-H	6.875" x 9" x 24" SA-533, Gr. B, Cl. 1 Clad SFA5.4, Tp. 308
		62-H	5.875" x 9" x 23.5" SA-533, Gr. B, Cl. 1 Clad SFA5.4, Tp. 308

Calibration Block Listing
(Information Only)

ID Number	Block Description	ID Number	Cal Block Description
63-H	5.0" x 9" x 20" SA-533, Gr. B, Cl. 1 Clad SFA5.4, Tp. 308	88-H	12" Sch. 120 SA-106, Gr. B
64-H	4.5" x 9" x 18" SA-533, Gr. , Cl. 1	92-H	28"-2.30" Nom. Wall SA-358, Gr. 304
65-H	24" Sch. 40 SA-333, Gr. 6	97-H	5.4"-0.750" Nom. Wall SB-166, Alloy 600
70-H	12" Sch. 100 SA-333, Gr. 6	106-H	1.01" Plate SA-508, Cl. 2
72-H	1.250" Plate SA-516, Gr. 70	108-H	10" Sch. 160 SA-106, Gr. B
73-H	0.850" Plate SA-516, Gr. 70	116-H	14" Sch. 80 SA-106, Gr. B
77-H	18" Sch. 120 SA-106, Gr. B	119-H	3.0" Plate SA-533, Gr. B, Cl. 1 Clad SFA5.4, Tp. 308
78-H	13.5"-1.20" Nom. Wall SB-166, Alloy 600	120-H	5.437"D x 0.625T SA-508, Cl. 2
79-H	10.9"-0.60" Nom. Wall SB-166, Alloy 600	121-H	5.437"D x 0.813T SA-182, F304
80-H	4" Sch. 80 SA-376, Tp. 304	122-H	4" Sch. 120 SA-106, Gr. B
81-H	8" Sch. 140 SA-106, Gr. B	124-H	Jet Pump Beam
82-H	16" Sch. 80 SA-106, Gr. B	125-H	3" x 4" x 12" SA-508, Cl. 2 Clad SFA5.4, Tp. 308
83-H	18"-2.10" Nom. SA-516, Gr. 70	128-H*	28"D x 1.184"T SA-358, Tp. 316NG
84-H	28"-1.80" Nom. Wall SA-182, F-304	129-H*	22"D x 1.75"T SA-358, Tp. 316NG
85-H	12"-1.20" Nom. Wall SA-182, F-304	130-H*	20"D x 0.879"T SA-358, Tp. 316NG

Calibration Block Listing
(Information Only)

ID Number	Block Description	ID Number	Cal Block Description
131-H*	24"D x 1.186"T SA-358, Tp. 316NG	134-H	SS-Plate - Tp. 304 Clad SFA5.4, Tp. 308 Overlay Block
132-H*	12"D x 0.792T SA-358, Tp. 316NG	135-H	1" Thick Pipe SA-508/SB166 Welded Composite SFA5.14ERN, CR-3 Overlay Overlay Block
133-H*	6"D x 0.432"T SA-358, Tp. 316NG	136-H	Shroud Head Bolt SB-166 N06600 HW/A/G

*Built during 1984 Hatch-2 Recirc. Piping Replacement

Georgia Power

ENCLOSURE 2

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
TECHNICAL POSITION ON REGULATORY GUIDE 1.150, REV. 1

The examination program for the RPV in the past has been performed in accordance with Sections V and XI of the ASME Code. Regulatory Guide (RG) 1.150, Revision 1, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examination", has been issued to provide technical guidance for RPV examinations. It is the position of GPC that the intent of RG 1.150, Rev. 1 (dated February 1, 1983) in it entirety does not apply to Plant Hatch. But it is also our position that portions of the RG provide technical guidance that would improve our RPV weld examination program. Therefore, the RPV weld examination program for Plant Hatch is conducted in accordance with Sections V and XI of the ASME code, augmented with portions of RG 1.150, R 1. Our position is summarized below.

1. **Instrument Performance Checks**

   Each combination of transducer, cable, and ultrasonic instrument used for RPV weld examinations are subject to the instrument performance checks.

   1.1 Pre-Examination Performance Checks

   The performance checks for the instrument will be performed in the field before and after the weld examinations.

   1.2 Field Performance Checks

   D. Screen Height Linearity

   As a minimum, the screen height linearity of each ultrasonic instrument shall be performed before and after examining all the welds that require examination in the RPV during one outage. Screen height linearity will be checked as part of the calibration requirements.

E. Amplitude Control Linearity

As a minimum, the amplitude control linearity of each ultrasonic instrument shall be performed before and after examining all the welds that require examination in the RPV during one outage. The initial instrument sensitivity during the performance of the amplitude control linearity check should be such that it falls at the calibration sensitivity or at some point between the calibration sensitivity and the scanning sensitivity. Amplitude control linearity shall be checked as part of the calibration requirements.

F. Angle Beam Profile Characterization

The vertical beam profile shall be determined for each search unit to be used during the examination prior to the examination. Beam profile curves shall be determined at different depths to cover the material thickness to be examined. Each transducer will have angle beam profile characterization on each different calibration block for which it is to be used for.

2. Calibration

The system calibration shall be performed to establish the DAC curve and the sweep range calibration in accordance with Article 4, Section V of the ASME Code.

2.1 Calibration for Manual Scanning

A static calibration shall be performed. The signal responses shall be maximized during calibration and sizing of indications. Upon completion of calibration, detection of flaws shall be demonstrated by reference hole detection at scanning speed and detection level.

3. Examination

The scope and extent of the ultrasonic examinations shall comply with IWA-2000, Section XI of the ASME Code. The examinations shall have a minimum 25 percent scan overlap based on transducer element size.

3.1 Internal Surface (Clad Components)

The capability to effectively detect defects at the internal clad/base metal interface shall be demonstrated by the use of a 2 percent notch which penetrates the internal (clad) surface of the calibration block.

3.2 Scanning Weld-Metal Interface

The volume of weld and adjacent base material to be examined as required by Section XI of the ASME Code will be examined with a 0°, and nominal 45° and 60° examination techniques.

6. Recording and Sizing of Indications

Indications determined to be from geometric sources will not be sized. When indications are evaluated as geometric in origin, the basis for this determination shall be described on the data sheet. All indications producing a response of 50 percent DAC or greater shall be recorded. The length of the reflector shall be determined by 50 percent DAC or half amplitude, whichever is applicable. If the size of an indication exceeds the allowable limits of Section XI of the ASME Code, the indication will be investigated to determine if it was present since fabrication. If fracture mechanics is necessary for continued operation, this will be determined by Georgia Power Company and they will take the necessary steps to resolve the indications.

This technical guidance from Regulatory Guide 1.150 Revision 1 will be applied to all welds in the RPV examination program.