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Georgia Power
a subsidiary of
The Southern Company

October 29, 1996

Docket No. 50-366

HL-5250

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

Edwin I. Hatch Nuclear Plant - Unit 2
Request for Alternative to 10 CFR 50.55a(g)(6)(ii)(A)
Augmented Examination of Reactor Pressure Vessel

Gentlemen:

In accordance with the requirements of 10 CFR 50.55a(g)(6)(ii)(A), the reactor pressure vessel (RPV) shell welds on Plant Hatch Unit 2 were examined during the Fall 1995 refueling outage. Physical limitations prevented completing the examination of 90% of the examination volume of one RPV circumferential weld.

Based on the information and justification provided in the enclosure, Georgia Power Company requests NRC authorization of an alternative examination per the provisions of 10 CFR 50.55a(g)(6)(ii)(A)(5) for this one weld.

Should you have questions or concerns regarding this matter, please contact this office.

Sincerely,

J. T. Beckham, Jr.

IFL/eb

Enclosure: Request for Alternative to 10 CFR 50.55a(g)(6)(ii)(A)

cc: (See next page.)

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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. S. D. Ebneter, Regional Administrator
Mr. B. L. Holbrook, Senior Resident Inspector - Hatch

State of Georgia
Mr. J. D. Tanner, Commissioner - Department of Natural Resources

Enclosure

Edwin I. Hatch Nuclear Plant - Unit 2
Request for Alternative to 10 CFR 50.55a(g)(6)(ii)(A)

Georgia Power Company (GPC) has determined that the augmented examinations of the Plant Hatch Unit 2 reactor pressure vessel (RPV) cannot be performed to the extent required by 10 CFR 50.55a(g)(6)(ii)(A) without undue hardship. In accordance with 10 CFR 50.55a(g)(6)(ii)(A)(5), GPC requests NRC authorization of an alternative examination based on other pertinent examinations performed to date which provide an acceptable level of quality and safety.

A. Required Examinations

10 CFR 50.55a(g)(6)(ii)(A) requires all licensees to augment their RPV examinations by implementing once, as part of the inservice inspection (ISI) interval in effect on September 8, 1992, the examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel," in Table IWB-2500-1 of subsection IWB of the 1989 Edition of Section XI, Division 1 of the ASME Boiler and Pressure Vessel Code. The requirements specify that essentially 100% of each shell weld be examined. 10 CFR 50.55a(g)(6)(ii)(A)(2) defines "essentially 100%" as "more than 90% of the examination volume of each weld."

B. Completed Examinations

GPC evaluated whether to perform the augmented examinations from either the inside diameter (ID) or the outside diameter (OD) of the RPV. The nuclear steam supply system (NSSS) vendor performed access studies to determine the coverage that could be obtained from each side of the welds. The studies clearly showed that the OD examination was the preferred method based on significantly more coverage obtained. The circumferential shell weld examinations could not be fully examined by either method. However, the examination of longitudinal welds contrasted significantly between methods. All longitudinal weld examinations were shown to exceed the 90% requirement for the OD method, while only 3 of the 12 examinations would have satisfied the Rule for examinations from the ID method. Therefore, the OD method was selected.

The primary ultrasonic (UT) examination technique used to gain full access to all shell welds was an automated OD magnetic crawler with a low profile. This technique was supplemented with manual UT examinations of accessible areas. The automated and manual examinations were performed in accordance with the criteria specified in the 1980 Edition of ASME Code Section XI, with Addenda through Winter 1981, and USNRC Regulatory Guide (RG) 1.150. The technical information and guidance

presented in RG 1.150, and also the utility ad-hoc group alternative guide, are key to the development and application of effective ISI procedures for the examination of RPV shell welds.

On Unit 2, a total of 4 circumferential and 12 longitudinal RPV shell welds were examined to satisfy the requirements of both the augmented RPV shell weld rule and ASME Code Section XI. The examination results for these welds revealed no recordable indications that exceed the allowable standards of ASME Code Paragraph IWB-3500. Enclosed Table 1 provides the examination results and limitations for each of the 16 welds.

These completed examinations provide GPC reasonable assurance that unacceptable service-induced flaws have not developed in these welds. The examinations were performed to the extent practical using state-of-the-art equipment and techniques and within the limitations of design and access of the RPV. Continued acceptable levels of quality and safety is assured. Based on the results of the examinations discussed above, GPC concludes that the public health and safety will not be endangered.

C. Alternative Examination

GPC requests relief from the augmented examinations on weld 2C-2 (upper shell to upper intermediate shell circumferential weld) based on physical limitations. Six stabilizer brackets limit access to weld 2C-2, thereby prohibiting "essentially 100%" examination. The weld received an 83.7% examination volume coverage. Enclosed Figure 1 shows the configuration of weld 2C-2.

The examination of RPV shell welds ensures an acceptable level of quality and safety even though 90% of the weld volume of shell circumferential weld 2C-2 could not be examined from the OD. The overall examination volume coverage for all RPV circumferential and longitudinal welds was 93%, and each remaining circumferential and longitudinal weld received at least 90% coverage.

GPC's position is based on the extensive evaluation performed by the BWRVIP, of which The Southern Company is an active participant. In anticipation that BWR plants would encounter physical limitations in meeting the regulatory requirements for augmented RPV examination, the BWRVIP Beltline Team evaluated the inspection requirements for RPV shell welds by addressing the following areas: fabrication practices, inservice inspection data, operational issues, degradation mechanisms, nondestructive examination capabilities, and probabilistic fracture mechanics analysis results.

The results of the BWRVIP Beltline Team's extensive evaluation are contained in EPRI Report TR-105697, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)," transmitted to the NRC for review and approval by letter dated September 28, 1995. The report clearly demonstrates that longitudinal welds are more critical than circumferential welds and recommends that no circumferential welds be examined. The report also provides technically justified recommendations for alternative inspection requirements.

D. Examinations from the ID of the RPV

GPC performed an evaluation to determine the feasibility of mobilizing the ID equipment to obtain 90% coverage for weld 2C-2. The ID access study indicated that 92.2% coverage could be obtained on weld 2C-2; however, the cost to procure this equipment in an effort to examine only a small percentage of one circumferential weld was estimated to be very expensive. Additionally, as has been mentioned before, the BWRVIP has shown that circumferential shell welds do not require examination as discussed in the EPRI Report TR-105697. GPC considers this option to be a hardship which does not provide a compensating increase in the level of quality and safety.

E. Conclusion

The evaluations and examinations performed, in conjunction with the technical position in BWRVIP EPRI Report TR-105697, meet the objective of the augmented examinations defined in 10 CFR 50.55a(g)(6)(ii)(A) in that the RPV shell welds were examined to the extent possible. They provide assurance of an acceptable level of quality and safety and assure the RPV weld integrity is maintained.

Table 1
Unit 2 Fall 1995 RPV Shell Weld Examinations

Circumferential Welds

Weld ID No.	Total No. of Inches	% Automated / % Manual	% Total	Cause of Limitations
2C-2	737.9	70. 3/13.4	83.7	Stabilizer brackets
2C-3	737.9	95.8/ 0.0	95.8	
2C-4	737.9	96.2/ 0.0	96.2	
2C-5	737.9	95.0/ 0.0	95.0	

Longitudinal Welds

Weld ID No.	Total No. of Inches	% Automated / % Manual	% Total	Cause of Limitations
2C-1-A	103.6	73.1/20.6	93.7	Main steam nozzle 2N3C; RPV flange
2C-1-B	151.0	91.2/ 0.0	91.2	RPV flange
2C-1-C	151.0	92.1/ 0.0	92.1	RPV flange
2C-2-A	153.0	95.7/ 0.0	95.7	
2C-2-B	153.0	94.5/ 1.1	95.6	Insulation support bracket & stabilizer bracket
2C-2-C	124.5	73.7/16.7	90.4	Feedwater nozzle 2N4D
2C-3-A	152.0	91.4/ 0.0	91.4	Bevels for 2C-3 & 2C-4
2C-3-B	152.0	94.3/ 0.0	94.3	Bevel for 2C-3
2C-3-C	152.0	93.6/ 0.0	93.6	Bevels for 2C-3 & 2C-4
2C-4-A	150.0	86.3/ 4.6	90.9	Recirc nozzles 2N1A & 2N2A; bevels for 2C-4 & 2C-5
2C-4-B	150.0	75.4/16.5	91.9	Recirc nozzle 2N2E; bevels for 2C-4 & 2C-5
2C-4-C	150.0	81.1/12.6	93.7	Recirc nozzle 2N2H; bevels for 2C-4 & 2C-5

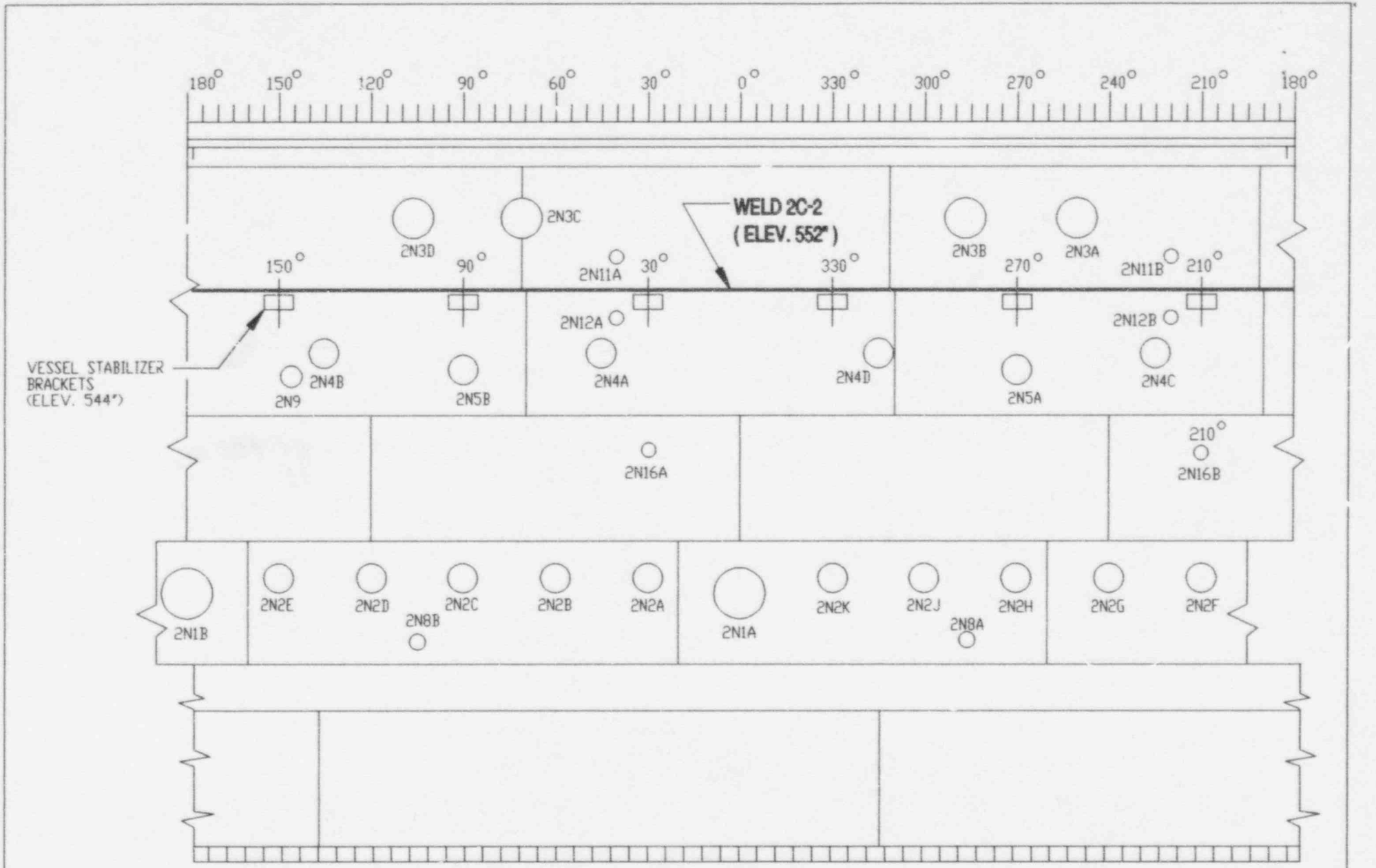

FIGURE - 1

PROJECT	TITLE
E I HATCH UNIT 2	O.D. LIMITATIONS FOR RPV SHELL WELD EXAMINATIONS