



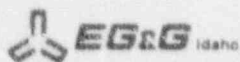
**Idaho
National
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TECHNICAL EVALUATION REPORT

TECHNICAL EVALUATION REPORT ON THE FIRST 10-YEAR
INTERVAL INSERVICE INSPECTION PROGRAM PLAN:
GEORGIA POWER COMPANY,
VOGTLE ELECTRIC GENERATING PLANT, UNIT 1,
DOCKET NUMBER 50-424

B. W. Brown
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ABSTRACT

This report presents the results of the evaluation of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection (ISI) Program, through Revision 3, submitted May 10, 1989, and the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Plan, Revision 0, submitted October 21, 1987. The Program includes the requests for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirements which the Licensee has determined to be impractical. The Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan are evaluated in Section 2 of this report. The ISI Program and Plan are evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the Nuclear Regulatory Commission (NRC) review before granting an operating license. The requests for relief from the ASME Code requirements which the Licensee has determined to be impractical for the first 10-year inspection interval are evaluated in Section 3 of this report.

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Operating Reactor Licensing Issues Program,
Review of ISI for ASME Code Class 1, 2, and 3 Components

SUMMARY

The Licensee, Georgia Power Company, has prepared the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection (ISI) Program and Plan to meet the requirements of the 1983 Edition, Summer 1983 Addenda of the ASME Code Section XI except that the Class 2 welds in the residual heat removal, emergency core cooling, and containment heat removal systems will be selected according to the 1974 Edition through Summer 1975 Addenda as required by 10 CFR 50.55a(b). The first 10-year interval began June 1, 1986 and ends June 1, 1997.

The information in the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program, Revision 0, submitted November 24, 1986, was reviewed, including the requests for relief from the ASME Code Section XI requirements which the Licensee has determined to be impractical. As a result of this review, a request for additional information (RAI) was prepared describing the information and/or clarification required from the Licensee in order to complete the review.

In response to the RAI, the Licensee submitted Revision 0 of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Plan (10-volume set) on October 21, 1987. Revisions 1 and 2 of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program were received in a submittal dated July 18, 1988. Revision 3 of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program was received in a submittal dated May 10, 1989.

Based on the review of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan, the Licensee's responses to the NRC's RAI, and the recommendations for granting relief from the ISI examination requirements that have been determined to be impractical, it has been concluded that the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan, with the exception of Requests for Relief RR-45, RR-47, RR-48 and RR-54, are acceptable and in compliance with 10 CFR 50.55a(g)(4).

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TECHNICAL EVALUATION REPORT ON THE
FIRST 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN:
GEORGIA POWER COMPANY,
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1. INTRODUCTION

Throughout the service life of a water-cooled nuclear power facility, 10 CFR 50.55a(g)(4) (Reference 1) requires that components (including supports) which are classified as American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, Class 2, and Class 3 meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," (Reference 2) to the extent practical within the limitations of design, geometry, and materials of construction of the components. This section of the regulations also requires that inservice examinations of components and system pressure tests conducted during the initial 120-month inspection interval shall comply with the requirements in the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the date of issuance of the operating license, subject to the limitations and modifications listed therein. The components (including supports) may meet requirements set forth in subsequent editions and addenda of this Code which are incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein. The Licensee, Georgia Power Company, has prepared the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection (ISI) Program and Plan to meet the requirements of the 1983 Edition, Summer 1983 Addenda of the ASME Code Section XI except that the Class 2 welds in the residual heat removal (RHR), emergency core cooling (ECC), and containment heat removal (CHR) systems will be selected according to the 1974 Edition through Summer 1975 Addenda as required by 10 CFR 50.55a(b). The first 10-year interval began June 1, 1987 and ends June 1, 1997.

As required by 10 CFR 50.55a(g)(5), if the licensee determines that certain Code examination requirements are impractical and requests relief from them, the licensee shall submit information and justifications to the Nuclear Regulatory Commission (NRC) to support that determination.

Pursuant to 10 CFR 50.55a(g)(6), the NRC will evaluate the licensee's determinations under 10 CFR 50.55a(g)(5) that Code requirements are impractical. The Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

The information in the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program, through Revision 0 (Reference 3), submitted November 24, 1986, was reviewed, including the requests for relief from the ASME Code Section XI requirements which the Licensee has determined to be impractical. The review of the ISI Program was performed using the Standard Review Plans of NUREG-0800 (Reference 4), Section 5.2.4, "Reactor Coolant Boundary Inservice Inspections and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components."

In a letter dated August 14, 1987 (Reference 5), the NRC requested the additional information that was required in order to complete the review of the ISI Program. The requested information was provided by the Licensee in a submittal dated October 21, 1987 (Reference 6). In this response, the Licensee submitted the complete Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Plan (10-volume set) (Reference 7), provided the requested clarifications, and revised and/or withdrew several requests for relief.

In a telephone conference call with the Licensee and the NRC on February 25, 1988, the Licensee committed to provide further information with regard to the ISI examinations of Code Class 1 branch connection welds and clarification on the sampling of augmented welds in engineered safety

systems. These commitments were received in the July 18, 1988 (Reference 8) submittal. Also included in this submittal were Revisions 1 and 2 of the ISI Program. Revision 3 of the ISI Program was received in a submittal dated May 10, 1989 (Reference 9).

The Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan are evaluated in Section 2 of this report. The ISI Program and Plan are evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the NRC's review before granting an operating license.

The requests for relief are evaluated in Section 3 of this report. Unless otherwise stated, references to the Code refer to Section XI of the ASME Code, 1983 Edition, including Addenda through Summer 1983. Specific inservice test (IST) programs for pumps and valves are being evaluated in other reports.

2. EVALUATION OF INSERVICE INSPECTION PROGRAM PLAN

This evaluation consisted of a review of the applicable program documents to determine whether or not they are in compliance with the Code requirements and any license conditions pertinent to ISI activities. This section describes the submittals reviewed and the results of the review.

2.1 Documents Evaluated

Review has been completed on the following information:

- (a) Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program, Revision 0, submitted November 24, 1986;
- (b) Safety Evaluation Report Related to the Operation of Vogtle Electric Generating Plant, Unit 1, dated December 1986 (Reference 10);
- (c) Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Plan, Revision 0 (10-volume set), submitted October 21, 1987;
- (d) Submittal dated November 2, 1987 (Reference 11), containing missing pages from the October 21, 1987 submittal;
- (e) Submittal dated July 18, 1988 (Reference 8), containing Revision 1 and Revision 2 of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program, and;
- (f) Submittal dated May 10, 1989 (Reference 9), containing Revision 3 of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program.

2.2 Compliance with Code Requirements

2.2.1 Compliance with Applicable Code Editions

The inservice inspection program plan shall be based on the Code editions defined in 10 CFR 50.55a(g)(4) and 10 CFR 50.55a(b). Based on the Operating License date of January 16, 1987, the Code applicable to the first interval ISI program is the 1983 Edition with Addenda through Summer 1983. As stated in Section 1 of this report, the Licensee has prepared the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan to meet the requirements of the 1983 Edition, Summer 1983 Addenda of the Code except that, as required by 10 CFR 50.55a(b), the extent of examination for Class 2 piping in the RHR, ECC, and CHR systems has been determined by the 1974 Edition through Summer 1975 Addenda.

2.2.2 Acceptability of the Examination Sample

Inservice volumetric, surface, and visual examinations shall be performed on ASME Code Class 1, 2, and 3 components and their supports using sampling schedules described in Section XI of the ASME Code and 10 CFR 50.55a(b).

The NRC and ASME Code Case N-408 have required that 7.5% of the welds in the RHR, ECC, and CHR systems, which only require a surface examination by Section XI of the Code, be volumetrically examined once each 10-year interval. Review of the ISI Plan shows that the Licensee has committed to perform an ultrasonic examination on a minimum of 7.5% of the required welds in the engineered safety systems [safety injection (SI), CHR, and RHR]. For Vogtle, Unit 1, this commitment requires that 70 welds be ultrasonically examined each 10-year interval. These added welds are mostly in thin-walled or small-diameter piping that Section XI exempts from volumetric weld examinations based on size, thickness, pressure, or temperature.

Sample size and weld selection have been implemented in accordance with the Code and appear to be correct.

2.2.3 Exclusion Criteria

The criteria used to exclude components from examination shall be consistent with Paragraphs IWB-1220, IWC-1220, IWD-1220, and 10 CFR 50.55a(b). The exclusion criteria have been applied by the Licensee in accordance with the Code as discussed in the ISI Program, Section 7, "Basis for Exemptions." It is noted that the exemption criteria for Class 2 components have been upgraded to include portions of Code Case N-408, "Alternative Rules for Examination of Class 2 Piping." The Licensee has committed to volumetrically examine a minimum of 7.5% of the Class 2 piping welds in the engineered safety systems, including the RHR, ECC, and CHR systems, using the exemption criteria contained in Code Case N-408.

2.2.4 Augmented Examination Commitments

The Licensee has stated that the following augmented examinations will be implemented during the first 10-year inspection interval:

- (a) The Reactor Pressure Vessel will be examined to the requirements of Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examination," Revision 1 (Reference 12), to the extent practical.
- (b) The Reactor Coolant Pump flywheels will be examined per the recommendations of Regulatory Position C.4.b. of Regulatory Guide 1.14, Revision 1 (Reference 13), dated August 1975, as required by the Technical Specifications.
- (c) As required by the Technical Specifications, the four main steam lines and feedwater lines from the containment penetration flued

head outboard weld to the upstream weld of the five-way restraint, which is downstream of the main steam isolation valves, will receive a 100% volumetric examination of circumferential and longitudinal pipe welds to the extent practical.

- (d) A minimum of 7.5% of the total number of Class 2 welds in the engineered safety systems (RHR, ECC, and CHR systems) will be subjected to an ultrasonic examination in accordance with the requirements of the Vogtle Electric Generating Plant Safety Evaluation Report paragraph 6.6.3. These added welds are mostly in thin-walled or small-diameter piping that Section XI exempts from volumetric weld examinations because of size, thickness, pressure, or temperature.
- (e) Snubbers installed on safety-related systems, as well as snubbers whose failure of the system on which they are installed would adversely affect a safety-related system, will be examined as required by Section 3/4.7.8 of the Plant Technical Specifications.
- (f) A visual observation for leakage will be performed on accessible ASME Code Class 3 portions of the nuclear service cooling water system. This visual observation is required to be performed with the system at operating pressures during each refueling outage for the first ten years of service. In addition, an ultrasonic examination of two representative welds, which are in piping 24 inches in diameter, one in each unit, will be performed every 40 months for the first 10 years of service [see letter from Licensee, dated February 9, 1987 (Reference 14)].

2.3 Conclusions

Based on the review of the documents listed above, it is concluded that the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan are acceptable and in compliance with 10 CFR 50.55a(g)(4).

3. EVALUATION OF RELIEF REQUESTS

The requests for relief from the ASME Code requirements that the Licensee has determined to be impractical for the first 10-year ISI interval are evaluated in the following sections.

3.1 Class 1 Components

3.1.1 Reactor Pressure Vessel

3.1.1.1 Relief Requests RR-1, RR-2, RR-3, RR-4, RR-5, RR-7, and RR-39, Examination Category B-A, Pressure Retaining Welds in the Reactor Pressure Vessel

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-A, Items B1.11 and B1.12 require a 100% volumetric examination of the Reactor Pressure Vessel shell welds as defined in Figures IWB-2500-1 and IWB-2500-2. Items B1.21 and B1.22 require a 100% volumetric examination of the Reactor Pressure Vessel head welds as defined in Figure IWB-2500-3. Item B1.30 requires a 100% volumetric examination on the Reactor Pressure Vessel shell-to-flange weld as defined in Figure IWB-2500-4. Item B1.40 requires both 100% volumetric and surface examinations of the Reactor Pressure Vessel head-to-flange weld as defined in Figure IWB-2500-5.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code required volume (CRV) of the following 16 welds as listed in Revision 0 of the Vogtle, Unit 1, First 10-Year Interval ISI Program relief requests:

<u>Relief Request</u>	<u>Weld Number</u>	<u>Item</u>	<u>CRV Examinable</u>
RR-1,39:	11201-V6-001-W03	B1.30	98%
RR-2,39:	11201-V6-001-W06	B1.11	66%
RR-3:	11201-V6-001-W18	B1.12	71%
	11201-V6-001-W19	B1.12	71%
	11201-V6-001-W20	B1.12	71%

(continued)

<u>Relief Request</u>	<u>Weld Number</u>	<u>Item</u>	<u>CRV Examinable</u>
RR-4,39:	11201-V6-001-W21	B1.22	89%
	11201-V6-001-W22	B1.22	95%
	11201-V6-001-W23	B1.22	92%
	11201-V6-001-W24	B1.22	98%
RR-5,39:	11201-V6-001-W07	B1.21	74%
RR-7:	11201-V6-001-W01	B1.21	96%
	11201-V6-001-W02	B1.40	65%
RR-39:	11201-V6-001-W04		
	11201-V6-001-W12		
	11201-V6-001-W13		
	11201-V6-001-W14		

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examination will be performed to the maximum extent possible.

Licensee's Basis for Requesting Relief: RR-1, RR-2, RR-3, RR-4, RR-5, and RR-7: The Licensee reports that volumetric examination of the subject welds can be performed only on a limited scope due to keyways, support lugs, lifting lugs, instrumentation tubes, control rod drive housings, and component geometries preventing 100% coverage of the required volume.

RR-39: For RPV welds outside the beltline region, the nominal 45° and 60° ultrasonic examinations are gated as near as possible to the near surface without causing nearly continuous spurious signals in the gate. The Licensee reports that, typically, this gating arrangement causes a slight amount of missed volume for these examinations of approximately 0.35-inch depth for the 45° examination and 0.27-inch depth for the 60° examination.

Evaluation: The Licensee's submittal has been reviewed, including a listing of the welds for which relief is being requested, the weld design, the Code-requirement for which relief is being requested, and the specific obstruction which limits the examination.

Based on the above review, it is noted that a significant percentage of the Code-required volumetric examination of the subject welds, as well as the Code-required leakage and hydrostatic tests, will be performed. The volumetric examination of these welds is impractical to perform to the extent required by the Code because of the limitations discussed above. To fully comply with the Section XI requirements would necessitate extensive modifications of the RPV support lugs, lifting lugs, instrumentation tubes, control rod drive housings, etc., along with modifications of the mechanical scanning equipment. The percentage of the Code-required examination that will be performed for ISI is consistent with that reported during PSI examinations.

Conclusions: Based on the above evaluation, it is concluded that the volumetric examination is impractical to perform to the extent required by the Code and that the limited Section XI volumetric examination of the subject welds, along with the Code-required leakage and hydrostatic tests, provides reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.1.1.2 Relief Request RR-6, Examination Category B-G-1, Reactor Pressure Vessel Flange Ligament Areas

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-G-1, Item B6.40 requires a 100% volumetric examination of the threads in the Reactor Pressure Vessel flange as defined by Figure IWB-2500-12.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume of the threads in the Reactor Pressure Vessel flange.

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examination will be completed to the maximum extent possible.

Licensee's Basis for Requesting Relief: The Licensee states that 100% of the Code-required volumetric examination of the flange ligament area cannot be performed as a surface discontinuity, due to the flange mating surface, exists in the flange ligament scan region. The Licensee reports that approximately 92% of the required volume will be covered for each of the 54 flange ligaments.

Evaluation: Review of the Licensee's submittal shows that a significant percentage (92%) of the Code-required volumetric examination can be completed on each stud hole ligament area. The remainder of the examination is limited by the lip of the flange seal surface. The limitation to examination and the percent of examination that can be completed are consistent with other plants of similar design.

Conclusions: Based on the above evaluation, it is concluded that the volumetric examination is impractical to perform to the extent required by the Code and that the limited

Section XI volumetric examination provides reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.1.1.3 Relief Request RR-9, Examination Category B-G-1, Reactor Pressure Vessel Studs

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-G-1, Item B6.30 requires both 100% surface and volumetric examinations of the Reactor Pressure Vessel closure studs (when removed). These examinations are to be as defined in Figure IWB-2500-12.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of the Reactor Pressure Vessel closure studs per the requirements of ASME Code Section V, Article 5.

Licensee's Proposed Alternative Examination: The more sensitive shear-wave examination, as described below, will be used. The Code-required surface examination will be performed if the studs are removed.

Licensee's Basis for Requesting Relief: The Licensee reports that a more sensitive examination, wherein a shear-wave transducer is lowered into the heater hole in the center of the stud, has been developed. The calibration block contains three notches of varying lengths and depths which were electrical discharge machined (EDM) into the thread area. This calibration technique will be used in lieu of the bottom hole technique.

Evaluation: In the Licensee's response to the staff's request for additional information (RAI), the Licensee verified that the subject bolting examination is based on ASME Code Case N-307 which allows for a revised ultrasonic examination volume when the examinations are conducted from the center-drilled hole. Code Case N-307 is listed in Regulatory Guide 1.147 as an NRC approved Code Case.

Therefore, the intent of the Code requirement will be met by the use of Code Case N-307.

Also, ASME Code Section XI, Paragraph IWA-2240 permits the use of alternative examination methods, a combination of methods, or newly developed techniques, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those of the specified method.

Conclusions: Based on the above evaluation, it is concluded that the intent of the Code will be met and, therefore, relief is not required for RR-9.

3.1.1.4 Relief Request RR-11, Examination Category F-B, Visual Examination of Reactor Pressure Vessel Supports

Code Requirement: Section XI, Table IWF-2500-1, Examination Category F-B, Item F2.30 requires a visual (VT-3) examination on linear-type component supports as defined in Figure IWF-1300-1.

Licensee's Code Relief Request: Relief is requested from performing the Code-required visual (VT-3) examination of the following four Reactor Pressure Vessel supports:

11201-V6-001-RS1
11201-V6-001-RS2
11201-V6-001-RS3
11201-V6-001-RS4

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: The subject Reactor Pressure Vessel supports are encased in concrete which renders them inaccessible for visual examination. The reactor vessel nozzles render them inaccessible from the top side. Removal of the examination barriers is impractical.

Evaluation: The Licensee's submittal has been reviewed, including the listing of the supports for which relief is being requested and Attachment 1 showing the support design and the concrete obstruction. Based on this review, it has been determined that, as the Licensee has stated, a visual examination of the subject supports is impractical to perform from the bottom side because the supports are encased in concrete and the visual examination is impractical to perform from the top side because of interference from the nozzles. The subject supports would require extensive modification in order to perform the Code-required visual examination.

Conclusions: Based on the above evaluation, it is concluded that the Code-required visual (VT-3) examination of the subject Reactor Pressure Vessel supports is impractical to perform. Therefore, it is recommended that relief be granted as requested.

3.1.1.5 Relief Request RR-40, Basic Ultrasonic Calibration Blocks for Examination of the Reactor Pressure Vessel Welds

Code Requirement: ASME Code Section V, Article 4, Figure T-434.1 requires a notch length of 2 inches in basic ultrasonic calibration blocks for examination of vessel welds.

Licensee's Code Relief Request: Relief is requested from the required notch length of 2 inches for Calibration Block Nos. ISI-D-400A through ISI-D-403A (four blocks total).

Licensee's Proposed Alternative Examination: The Code-required examination will be performed using instruments calibrated on the subject blocks containing notches less than 2 inches long.

Licensee's Basis for Requesting Relief: The four subject calibration blocks, supplied by the reactor pressure vessel manufacturer, contain notches that are approximately 1-3/4 inches in length. The Licensee reports that these notches provide no difficulty in establishing acceptable calibrations.

Evaluation: The Licensee's submittal of relief request RR-40 has been reviewed and it has been determined that the use of 1-3/4 inch long notches, in lieu of the Code-required 2-inch notch, will have no detrimental effect on the examination as it can only provide for a more sensitive examination.

Conclusions: Based on the above evaluation, it is concluded that the use of the subject calibration blocks will meet or exceed the Code requirement. Therefore, it is recommended that relief be granted as requested.

3.1.1.6 Relief Request RR-52, Examination Category B-H, Reactor Pressure Vessel Integrally Welded Attachments

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-H, Item B8.10 requires a 100% surface examination of RPV integrally welded attachments as defined by Figure IWB-2500-15.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required area (CRA) of the following integrally welded attachments:

<u>Weld Number</u>	<u>CRA Examinable</u>
11201-V6-001-W204	75%
11201-V6-001-W205	75%
11201-V6-001-W206	75%

Licensee's Proposed Alternative Examination: None. The Code-required surface examination will be performed to the maximum extent possible.

Licensee's Basis for Requesting Relief: Geometric configuration and the location of the control rod drive support braces presents physical limitations that prevent complete coverage of the RPV Closure Head lifting lugs required for the surface examination.

Evaluation: Review of the Licensee's submittal shows that a significant percentage of the Code-required surface examination will be performed on each of the subject lifting lugs. This limited Section XI surface examination will provide reasonable assurance of the continued inservice structural integrity.

Conclusions: It is concluded that the surface examination is impractical to perform to the extent required by the Code. Therefore, it is recommended that relief be granted as requested.

3.1.2 Pressurizer

3.1.2.1 Relief Requests RR-10 and RR-16, Examination Category B-H, Pressurizer Integrally Welded Attachments

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-H, Item B8.20 requires a 100% surface examination of the Pressurizer integrally welded attachments as defined by Figures IWB-2500-13 and IWB-2500-15.

Licensee's Code Relief Request: RR-10: Relief is requested from examining 100% of the Code-required surface of Pressurizer support skirt weld 11201-V6-002-W35.

RR-16: Relief is requested from performing the Code-required surface examination of Pressurizer integral welded attachments 11201-V6-002-W23 through W30 (eight welds).

Licensee's Proposed Alternative Examination: RR-10: None. The Licensee reports that area A-B as shown on Figure IWB-2500-13 will receive the Code-required surface examination.

RR-16: None.

Licensee's Basis for Requesting Relief: RR-10: The Pressurizer heater penetrations restrict access for personnel to perform a surface examination of the Pressurizer skirt weld area as described by C-D on Figure IWB-2500-13.

RR-16: The support rack assembly, which holds the spray and relief piping of the Pressurizer, rests above the integrally welded attachments and restricts access to the welds. The Licensee reports that removal of the rack assembly to perform the necessary surface examination is not feasible.

Evaluation: The Licensee's requests for relief have been reviewed and it has been determined that a significant percentage of the Code-required surface examination of Pressurizer skirt weld No. 11201-V6-002-W35 can and will be completed. In order to complete the Code-required surface examination on the remainder of this weld and the eight welds listed in RR-16, the Pressurizer would require extensive modifications.

Conclusions: Based on the above evaluation, it is concluded that compliance with the specific requirements of Section XI for the subject welds is impractical. Therefore, it is recommended that relief be granted as requested.

3.1.2.2 Relief Requests RR-12, RR-14, and RR-15, Examination
Categories B-B, B-D, and B-F, Pressurizer Vessel and Surge
Nozzle-to-Vessel Welds

Code Requirement: RR-12: Section XI, Table IWB-2500-1, Examination Category B-F, Item B5.40 requires both 100% surface and volumetric examinations of Pressurizer nozzle-to-safe end welds as defined by Figure IWB-2500-8.

RR-12, RR-14, and RR-15: Section XI, Table IWB-2500-1, Examination Category B-B, Item B2.11 requires a 100% volumetric examination of the Pressurizer shell-to-head welds as defined in Figure IWB-2500-1. Examination Category B-D, Items B3.110 and B3.120 require a 100% volumetric examination of the Pressurizer nozzle-to-vessel welds and the nozzle inside radius sections as defined in Figure IWB-2500-7(b).

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume (CRV) of the following Pressurizer welds:

	<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
RR-12:	11201-V6-002-W01	Upper Head-to-Upper Shell Weld	68%
RR-12:	11201-V6-002-W05	Lower Shell-to-Lower Head Weld	84%
RR-12:	11201-V6-002-W10	Upper Head-to-6" Safety Nozzle Weld	50%
RR-12:	11201-V6-002-W11	Upper Head-to-6" Safety Nozzle Weld	50%
RR-12:	11201-V6-002-W12	Upper Head-to-6" Safety Nozzle Weld	50%
RR-12:	11201-V6-002-W13	Upper Head-to-6" Safety Nozzle Weld	50%
RR-12:	11201-V6-002-W14	Upper Head-to-4" Spray Nozzle Weld	50%

(continued)

	<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
RR-12:	11201-V6-002-W17	6" Safety Nozzle-to-Safe End Weld	50%
RR-12:	11201-V6-002-W18	6" Safety Nozzle-to-Safe End Weld	50%
RR-12:	11201-V6-002-W19	6" Safety Nozzle-to-Safe End Weld	50%
RR-12:	11201-V6-002-W20	6" Safety Nozzle-to-Safe End Weld	50%
RR-14:	11201-V6-002-W16	Surge Nozzle-to-Vessel Weld	20 to 30% (head side)
RR-15:	11201-V6-002-IR06	Surge Nozzle inner radius section	0%

Licensee's Proposed Alternative Examination: RR-12: The Code-required surface examination of the nozzle-to-safe end welds will be performed. The Code-required volumetric examination will be performed to the maximum extent possible (see above table). In addition, a surface examination will be performed on the head-to-nozzle welds to supplement the limited volumetric examinations.

RR-14: In addition to the limited volumetric examination as outlined in the above table, a surface examination covering 85% of the Pressurizer surge nozzle-to-vessel weld will be performed during ISI.

RR-15: None.

Licensee's Basis for Requesting Relief: RR-12: The Pressurizer upper head-to-shell weld can receive only 68% of the Code-required volumetric examination because of interferences caused by nozzles, supports, and identification plates. The lower head-to-shell weld can receive only 84% of the Code-required volumetric examination because the

Pressurizer skirt limits access. The five Pressurizer head-to-nozzle and four nozzle-to-safe end welds can receive only 50% of the Code-required volumetric examination as volumetric examination is not possible from the nozzle side of the welds.

RR-14: The electrical heater well couplings and associated cables surround the Pressurizer surge nozzle on the bottom head. These heater couplings restrict coverage of the required examination volume of weld 11201-V6-002-W16. The extent of the coverage that was obtained is 0% from the nozzle side and 20 to 30% from the head side of the weld. In addition to the limited volumetric examination coverage, a surface examination covering 85% of the subject weld will be performed for ISI.

RR-15: Pressurizer surge nozzle inner radius section 11201-V6-002-IR06 cannot be volumetrically examined as the nozzle barrel prohibits an ultrasonic scan from the nozzle side and the heater well couplings prohibit the scan from the vessel side.

Evaluation: Based on review of RR-12, RR-14, and RR-15, the Pressurizer would require extensive modification in order to perform the volumetric examination to the extent required by the Code because of the geometric restrictions discussed above. The limited volumetric examinations, in conjunction with the Code-required and/or augmented surface examinations and the hydrostatic tests, provide reasonable assurance of the continued inservice structural integrity.

Conclusions: Based on the above evaluation, it is concluded that the volumetric examination is impractical to perform to the extent required by the Code. Therefore, it is recommended that relief be granted as requested.

3.1.2.3 Relief Request RR-13, Ultrasonic Calibration Blocks for the Pressurizer Nozzle-to-Safe End Welds

NOTE: Relief was requested from using calibration blocks made from material of the same nominal diameter and nominal wall thickness as the Pressurizer nozzle-to-safe end welds. This relief request had been previously granted for PSI with the condition that proper calibration blocks be obtained and utilized for all future ISI examinations.

In the October 21, 1987 response to the NRC request for additional information with regard to the above, the Licensee withdrew Request for Relief RR-13.

3.1.3 Heat Exchangers and Steam Generators

3.1.3.1 Relief Request RR-19, Examination Category B-B, Volumetric Examination of Steam Generator Channel Head-to-Tube Sheet Weld

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-B, Item B2.40 requires a 100% volumetric examination of the tubesheet-to-head weld on the primary side of the Steam Generators as defined by Figure IWB-2500-6.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume of the following Steam Generator tubesheet-to-head welds:

11201-B6-001-W08
11201-B6-002-W08
11201-B6-003-W08
11201-B6-004-W08

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examination will be completed to the maximum extent possible, as outlined in the Attachment 1 to RR-19.

Licensee's Basis for Requesting Relief: Four vessel supports and an identification tag prevent access to 100% of the weld length by the transducer. The tubesheet interferes with transducer placement for the upstream scans and the curvature of the channel head interferes with the downstream scans.

Evaluation: Attachment 1 of the Licensee's submittal identifies the percentage of the Code-required volumetric examination which can be completed for each type of search unit scan in both the upstream and downstream directions. For each of the four subject welds, it is noted that a significant percentage of the Code-required volume can and will be examined. The Steam Generators would require extensive

modification in order to comply with the exact Section XI requirements.

Conclusions: Based on the above evaluation, it is concluded that the volumetric examination of the subject welds is impractical to perform to the extent required by the Code and that the limited Section XI volumetric examination, along with the required hydrostatic test, will provide reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.1.3.2 Relief Request RR-42, Examination Category B-D, Volumetric Examination of Steam Generator Inlet and Outlet Nozzle Inner Radii

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-D, Item B3.140 requires a 100% volumetric examination of the Steam Generator nozzle inside radius section as defined by Figure IWB-2500-7.

Licensee's Code Relief Request: Relief is requested from performing 100% of the Code-required volumetric examination of the following Steam Generator inlet and outlet nozzles:

Examination Identification Nos.

11201-B6-001-IR-01
11201-B6-001-IR-02
11201-B6-002-IR-01
11201-B6-002-IR-02
11201-B6-003-IR-01
11201-B6-003-IR-02
11201-B6-004-IR-01
11201-B6-004-IR-02

Licensee's Proposed Alternative Examination: None. The Licensee reports in Reference 6 that the inside surface of each steam generator primary side nozzle inner radius section will be visually examined to the maximum extent practical.

Licensee's Basis for Requesting Relief: The Steam Generator primary side nozzles are integrally cast as part of the channel head. The nozzle inner radius sections cannot be volumetrically examined from the outside of the nozzle or channel head because the rough, as-cast contact surface is not suitable for ultrasonic coupling and the geometrical configuration requires an excessively long test metal distance, resulting in high ultrasonic attenuation. The inside of the nozzle and channel head areas are covered with cladding in the "as-welded" condition; therefore, meaningful volumetric

examination cannot be performed from the "as-welded" surface. Even with proper preparation of the inside surface for volumetric examination, an adequate examination of the area of interest (base metal just below the cladding) could not be achieved due to the resulting ultrasonic response at the clad-to-base metal interface.

Evaluation: The Licensee's submittal has been reviewed and it has been determined that the reported as-cast surface condition, along with the excessively long test metal distance which results in high ultrasonic attenuation, precludes the Code-required volumetric examination from being performed from the outside surface. The as-welded surface of the ID cladding prohibits ultrasonic examination from the inside surface. Therefore, the Steam Generator channel heads would require extensive rework in order to comply with the Code Section XI requirements.

Conclusions: Based on the above, it is concluded that the Licensee's proposed visual examination and the Code-required pressure test will provide reasonable assurance of the continued inservice structural integrity. Compliance with the specific requirements of Section XI for the specific nozzle inside radius sections is impractical. Therefore, it is recommended that relief be granted as requested.

3.1.4 Piping Pressure Boundary

3.1.4.1 Relief Requests RR-8, RR-17, RR-20, RR-24, and RR-26 (part 1 of 2), Examination Category B-J, Pressure Retaining Welds in Class 1 Piping

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-J, Item B9.11 requires both 100% surface and volumetric examinations of Class 1 pressure retaining circumferential welds 4 inch and greater nominal pipe size as defined by Figure IWB-2500-8.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume (CRV) of the following 44 Class 1 circumferential piping welds:

<u>Relief Request</u>	<u>Examination ID No.</u>	<u>CRV Examinable</u>
RR- 8:	11201-009-9	46%
	11201-010-7	50%
	11201-011-8	50%
	11201-012-9	50%
RR-17:	11201-001-5	50%
	11201-002-5	50%
	11201-003-5	50%
	11201-004-6	50%
	11201-005-1	50%
	11201-006-1	50%
	11201-007-1	50%
	11201-008-1	50%
RR-20:	11201-049-3	93%
	11201-059-11	90%
RR-24:	11201-005-8	90%
	11201-006-8	90%
	11201-007-8	90%
	11201-008-3	90%
	11201-009-1	75%
	11201-010-1	75%
	11201-011-1	75%
	11201-012-1	75%

(continued)

<u>Relief Request</u>	<u>Examination ID No.</u>	<u>CRV Examinable</u>
RR-26:	11204-124-1	50%
	11204-124-7	50%
	11204-124-8	50%
	11204-124-11	88%
	11204-124-12	88%
	11204-124-15	50%
	11204-124-16	50%
	11204-125-1	50%
	11204-125-7	50%
	11204-125-8	50%
	11204-125-15	50%
	11204-125-16	50%
	11204-126-1	50%
	11204-126-7	50%
	11204-126-8	50%
	11204-126-15	50%
	11204-126-16	50%
	11204-127-1	50%
	11204-127-7	50%
	11204-127-8	50%
	11204-127-19	50%
	11204-127-20	50%

Licensee's Proposed Alternative Examination: RR-8: In addition to the Code-required surface examination and the limited mechanized ultrasonic examination, a supplemental manual ultrasonic examination using a refracted longitudinal wave, calibrated on the centrifugally cast piping calibration block, will be performed from the safe-end outside diameter to obtain the examination coverage listed above.

RR-17, RR-20, RR-24, and RR-26: None. In addition to the Code-required surface examination, the volumetric examination will be performed to the extent practical (as identified above).

Licensee's Basis for Requesting Relief: RR-8: The four Reactor Vessel safe end-to-elbow welds listed above can receive only a limited Code-required volumetric examination (65% coverage from the safe-end side and 0% from the elbow side) because of physical limitations due to the geometric

configuration of the elbows. The Licensee reports that, in addition to the limited mechanized volumetric examination, a supplemental manual ultrasonic examination using a refracted longitudinal wave, calibrated on the centrifugally cast piping calibration block, will be performed from the safe-end side. With this technique, 92% coverage can be obtained on one weld and 100% coverage can be obtained on the other three. The refracted longitudinal wave is required due to the close proximity of the nozzle-to-safe end weld. No coverage can be obtained from the elbow side due to O.D. taper.

RR-17: The eight Steam Generator Class 1 nozzle-to-elbow welds listed above can receive only 50% of the Code-required volumetric examination from the elbow side of the weld due to nozzle geometry. The Licensee reports that these welds will be ultrasonically examined 100% from the elbow side using the refracted longitudinal wave examination technique discussed in RR-22 (evaluated in Paragraph 3.1.4.3 of this report).

RR-20: The two pipe-to-tee welds listed above can receive only 90% and 93% of the Code-required volumetric examination due to physical restrictions caused by the tee geometry.

RR-24: The four Reactor Coolant (RC) Pump inlet nozzle-to-elbow welds listed above can receive only 90% of the Code-required volumetric examination and the four RC Pump outlet nozzle-to-pipe welds can receive only 75% of the Code-required volumetric examination. Full Code-required coverage is not possible because of the increasing taper of the nozzle with increasing distance from the weld.

RR-26: The two 10-inch pipe-to-tee welds listed above can receive only 88% of the Code-required volumetric examination and the 20 10-inch pipe-to-valve welds can receive only 50% of the Code-required volumetric examination due to metallurgical constraints and the geometric configuration of the tees and

valves. Because the SA-376 material exhibited severe angular variations and significant attenuation problems during the attempted shear-wave ultrasonic examinations, a refracted longitudinal wave, which is a 1/2 V-path examination technique, will be used. On the pipe-to-valve configurations, the weld will be examined from the pipe side. Scanning from the valve side is not possible due to valve geometry. On pipe-to-tee configurations, the weld will be examined from the pipe side using the refracted longitudinal wave. Only partial scanning from the tee side is possible due to tee geometry.

Evaluation: The Licensee's submittal was reviewed, including the Attachments that list the welds for which relief is being requested, the weld configurations, the Code requirements, a brief description of the restriction, and the approximate percentage of the Code-required examination that can be completed.

Complete examinations that meet the requirements of ASME Code Section XI will be performed on welds of similar configuration using the same inspection techniques, equipment, and procedures as those for the partially inspected welds. Since the welds receiving limited examination are seeing the same operating and environmental conditions as the inspected welds, reasonable assurance of the structural integrity of the welds for which relief is requested will be attained.

With regard to limitations due to the metallurgical properties of cast stainless steel, the Licensee should monitor the development of new or improved examination techniques and, as improvements are achieved, incorporate these techniques as part of the inservice examination requirements for the components or welds which received a limited ISI examination.

Conclusions: Based on the above review, it is concluded that the volumetric examination of the subject welds is impractical

to perform to the extent required by the Code. The Code-required surface examination and the limited volumetric examination of these welds, in conjunction with the required hydrostatic test and the complete Code-required examinations on welds of similar configuration, will provide reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.1.4.2 Relief Request RR-21, Examination Category B-J, Class 1 Branch Connection Welds 4 Inch and Larger Nominal Pipe Size

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-J, Item B9.31 requires both 100% surface and volumetric examinations of branch pipe connection welds 4 inch and greater nominal pipe size as defined by Figures IWB-2500-9, -10, and -11.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume (CRV) of the following 11 Class 1 branch pipe connection welds:

Weld Number	Weld Description	CRV Examinable	
		Pipe Side	Branch Side
11201-001-2	12" Branch Connection	50%	90%
11201-002-2	6" Branch Connection	50%	90%
11201-003-2	6" Branch Connection	50%	90%
11201-004-2	16" Branch Connection	50%	90%
11201-004-3	12" Branch Connection	50%	90%
11201-009-4	4" Branch Connection	0%	100%
11201-009-6	10" Branch Connection	50%	0%
11201-010-4	10" Branch Connection	50%	0%
11201-011-5	10" Branch Connection	50%	0%
11201-012-4	4" Branch Connection	0%	100%
11201-012-6	10" Branch Connection	50%	0%

Licensee's Proposed Alternative Examination: None. In addition to the Code-required surface examination, an ultrasonic examination will be performed to the extent possible (as defined above).

Licensee's Basis for Requesting Relief: Two basic weld configurations are used for the branch connection designs on the main loop piping. The 4-inch branch connections were installed using a "set-on" weld design, while the 6-, 10-, 12-, and 16-inch branch connections were installed using a "set-in" design.

Typically, examination coverage of branch connection welds can be obtained by scanning from the main run of pipe using a 45° shear wave technique. In this case, due to the cast stainless material used in the main loop, the examination is limited to a 1/2 V-path examination using a refracted longitudinal (RL) wave technique developed for this piping.

Examination of the 4-inch branch connection welds from the main run of piping using the 1/2 V-path RL wave is not possible due to the geometry of the "set-on" configuration. However, partial coverage of the 6-, 10-, 12-, and 16-inch branch connection welds from the main run using the 1/2 V-path RL technique is possible because of the "set-in" configuration. Approximately 50% of the Code-required volume (one beam direction only) for the 6-, 10-, 12-, and 16-inch branch connection welds can be examined using this technique.

To increase coverage and provide two-directional coverage, scanning from the branch connection side will also be used where possible. The forged stainless steel material used in all but the 10-inch branch connections allows the use of shear wave ultrasonic techniques; however, the geometry of the fittings still presents problems in obtaining Code-required coverage.

Based on plots and calculations, the Licensee determined that the only feasible examination from the branch connection side would be a shear wave technique from the taper of the fitting. This technique will rely on the ability of the shear wave to reflect off of the inner wall at the fitting bore, and should result in approximately 80% of the required volume being examined on the 4-inch branch connections.

The fitting side of the 10-inch branch connection is cast stainless steel; this precludes the use of a shear wave

technique. Also, due to the geometry of the part, examination from the branch connection side using the 1/2 V-path RL technique is not feasible.

When examinations are conducted from the branch connection side, calibration blocks will be fabricated to match the actual configuration of the components to the extent practical. Reflectors would be machined into these "mockups" in the appropriate locations. In cases where it is determined that one mockup would provide adequate representation for two branch connection sizes, only one calibration block will be fabricated. For example, only one mockup would be provided for the 12- and 16-inch branch connections if it is determined to provide appropriate calibration.

Evaluation: The Licensee's submittal has been reviewed, including the list of specific branch connection welds with an estimate of the accessible percentage of each and a sketch showing the configurations of the branch connections for which relief is being requested.

The Licensee has made significant efforts, as described above, to perform the Code-required volumetric examinations on the subject branch connections. Examination of branch connection welds is typically difficult due to the configuration of the branch connection fittings and weld design. These problems exist for branch connection welds in the Vogtle main loop piping, in addition to the problems of examining cast stainless steel piping material. Based on the materials of construction and the branch connection design, the complete Code required volumetric examination cannot be performed. However, a significant percentage can and will be performed.

Conclusions: Based on the above evaluation, it is concluded that the volumetric examination is impractical to perform to

the extent required by the Code and that the limited Section XI volumetric examination of the branch connection welds, along with the Code-required surface examination and pressure test, provide reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.1.4.3 Relief Requests RR-22 and RR-23, Ultrasonic Techniques and Calibration Blocks for Examination of Pressure Retaining Welds of Cast Stainless Steel (Grade SA 351-CF8A) Components in the Reactor Coolant System

Code Requirement: RR-22: Section XI, Appendix III, Paragraph III-4420 requires that the ultrasonic examination be performed using sufficiently long examination beam paths to provide coverage of the required examination volume in two beam-path directions. The examination shall be performed from two sides of the weld, where practicable, or from one side of the weld as a minimum. Paragraph III-4430 requires that the angle beam examination for reflectors transverse to the weld be performed on the weld crown on a single scan path to examine the weld root by 1/2 V-path in two directions along the weld. Paragraph III-2430 requires that manual scanning be done at twice (+6 dB) the primary reference level, as a minimum.

RR-23: Section XI, Appendix III, Paragraph III-3410 requires that basic calibration blocks be made from material of the same nominal diameter and nominal wall thickness or pipe schedule as the pipe to be examined.

Licensee's Code Relief Request: RR-22: Relief is requested from performing volumetric examinations on the cast stainless steel using conventional shear-wave techniques.

RR-23: Relief is requested from obtaining calibration blocks for each nominal pipe size ranging from 27.5- to 31-inch ID with wall thicknesses ranging from 2.32 to 2.62 inches.

Licensee's Proposed Alternative Examination: RR-22: In addition to the Code-required surface examination, a refracted longitudinal wave ultrasonic examination, which is a 1/2 V-path examination, will be performed. Scanning will be done at the primary reference level.

RR-23: The calibration block fabricated from the hot leg piping (29-inch I.D. and 2.45-inch nominal wall thickness) will be used to examine the cold leg (27.5-inch I.D. and 2.32-inch nominal wall thickness) and the crossover leg (31-inch I.D. and 2.6-inch nominal wall thickness) piping welds. This calibration block will also be used to examine the 27.5-, 29-, and 31-inch I.D. elbows of the 2.35-, 2.48-, and 2.62-inch wall thicknesses, respectively.

Licensee's Basis for Requesting Relief: RR-22: The cast SA-351, CF8A material contains a banded microstructure that consists of grains ranging in size from extremely coarse to very fine. This irregular grain structure causes significant attenuation and some angular variations during a typical shear-wave ultrasonic examination. A technique was developed wherein a 1.0-inch, dual-element, focused transducer utilizing a 45° refracted longitudinal wave with a frequency of 1.0 MHz is used. During calibration, the primary reference level is set using side-drilled holes. Calibrations using side-drilled holes are more sensitive than those using notches and cause the primary reference level to be set higher. Scanning is possible only at the primary reference level due to excessive noise associated with the higher gain levels and the metallurgical structure of the material. A demonstration using this technique was performed for NRC Region II, during PSI, and determined to be a conservative method of detecting ID reflectors [NRC report numbers 50-424/85-18 (Reference 15) and 50-424/85-25 (Reference 16)].

RR-23: Section XI, Paragraph IWA-2232(c) allows the use of Article 5 of Section V for the ultrasonic examination of piping made of other than ferritic materials. Section V, Article 5, Paragraph T-540 delineates the examination requirements of welds in wrought and cast materials. Paragraph T-543.3.1 allows for use of a block of essentially the same curvature or,

alternatively, a flat block for examinations where the examination surface diameter is greater than 20 inches. Also, Figure T-546.1 allows a calibration block thickness of 3 inches to be used for thicknesses between 2 and 4 inches. Using this analysis, the single calibration block, fabricated from hot leg pipe, is appropriate for examination of the cold leg and crossover leg components.

Evaluation: The Licensee's submittal has been reviewed, including NRC Region II report Numbers 50-524/85-18 and 50-524/85-25, and it has been determined that the examination procedures meet the methodology requirements of ASME Code Section XI and, as reported by Region II, the Licensee has successfully demonstrated his techniques, equipment, and procedures for examination of the Primary Coolant System at Vogtle Electric Generating Plant, Unit 1.

With regard to limitations due to the metallurgical properties of cast stainless steel, the Licensee should monitor the development of new or improved examination techniques and, as improvements are achieved, incorporate these techniques as part of the inservice examination requirements for the components or welds which received a limited ISI examination.

Conclusions: Based on the above evaluation, it is concluded that the Licensee's proposed examinations provide reasonable assurance of the continued inservice structural integrity and that compliance with the specific requirements of Section XI for the subject welds is impractical. Therefore, it is recommended that relief be granted as requested.

3.1.4.4 Relief Request RR-25, Ultrasonic Calibration Block for Examination of Pressure Retaining Reactor Coolant Pump Nozzle-to-Pipe Welds

Code Requirement: Section XI, Appendix III, Paragraph III-3411 states that calibration blocks shall be fabricated from one of the materials specified for the piping being joined by the weld and, if material of the same specification is not available, material of similar chemical analysis, tensile properties, and metallurgical structure may be used.

Licensee's Code Relief Request: Relief is requested from obtaining a calibration block for the following Reactor Coolant Pump outlet nozzle-to-pipe welds:

11201-009-1
11201-010-1
11201-011-1
11201-012-1

Licensee's Proposed Alternative Examination: The Code-required surface examination will be performed and an ultrasonic examination will be performed from the pipe side through the overlay material.

Licensee's Basis for Requesting Relief: The 27.5-inch piping is significantly thinner than the Reactor Coolant Pump discharge nozzles. Weld metal was deposited on the pipe to increase the thickness of the pipe to that of the nozzle so that a full penetration weld could be made. This overlay material extends approximately 6 inches on the pipe side of the welds. The Licensee reports that the refracted longitudinal wave examination, which has previously been demonstrated to be the superior technique for examining cast material, will be completed using high scanning levels. The Licensee also reports that the pipe I.D. geometry can be observed during this inspection. Thus, the longitudinal wave will penetrate the

pipe overlay. As a result, defects will be observed, if present, regardless of the calibration technique used. The ultrasonic calibration block to be used will be the cast piping block that has not been overlaid with weld material.

Evaluation: The Licensee's submittal has been reviewed, including a drawing showing the pump nozzle-to-pipe weld with the weld overlay. The limited Section XI volumetric examination, which has been demonstrated to detect I.D. geometric indications, along with the Code-required surface examination and the hydrostatic test, will provide reasonable assurance of the continued inservice structural integrity.

The Licensee should monitor the development of new or improved examination techniques and, as improvements are achieved, incorporate these techniques as part of the inservice examination requirements for the components or welds which received a limited ISI examination.

Conclusions: Based on the above evaluation, it is concluded that compliance with the specific requirements of Section XI for the subject welds is impractical. Therefore, it is recommended that relief be granted as requested.

3.1.4.5 Relief Request RR-41. Basic Ultrasonic Calibration Blocks for Examination of the Reactor Pressure Vessel Nozzle-to-Safe End Welds

Code Requirement: Section XI, Article III-3411 requires that basic calibration blocks be fabricated from one of the materials specified for the piping being joined by the weld.

Licensee's Code Relief Request: The Licensee has requested to use a cast stainless steel piping calibration block (No. ISI-D-331A) in conjunction with a composite calibration block (No. ISI-D-405A) for the mechanized examination of Reactor Pressure Vessel nozzle-to-safe end welds 11201-V6-001-W33 through 11201-V6-001-W40 (eight welds total).

Licensee's Proposed Alternative Examination: The Code-required surface examination will be performed from the outside of the weld. Also, a mechanized ultrasonic examination will be performed from the inside using the composite calibration block in conjunction with the curved surface cast piping calibration block as discussed below.

Licensee's Basis for Requesting Relief: The RPV manufacturer supplied a flat block fabricated from SA-508 CL-2 and SA-240 Type-316 welded together to form a composite block to be used for the examination of the nozzle-to-safe end welds. Due to the special near-surface examination technique being applied from inside the vessel during the mechanized examination, the flat contour of the composite calibration block could not be used alone to establish a calibration which was representative of the examination to be performed. An attenuation comparison performed between the centrifugally cast block (ISI-D-331A) and the flat composite calibration block (ISI-D-405A) revealed that calibration using ISI-D-331A would provide a more sensitive

examination for three of the four channels used for the examination. Based on this information, calibration block ISI-D-331A was used to establish both the sweep position and calibration sensitivity for three channels. The sweep position for the other channel was established from ISI-D-331A and the sensitivity was established from ISI-D-405A. The Licensee reported that the use of the curved surface of the centrifugally cast calibration block, as well as adding the increased sensitivity, provided a superior calibration for the special near-surface examination technique applied to these welds.

Evaluation: It is noted that Section XI, Paragraph IWA-2240, permits the use of alternative examination methods, a combination of methods, or newly developed techniques, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those of the specified method. The examination technique proposed by the Licensee meets the intent of the Code requirements for the RPV nozzle-to-safe end welds.

Conclusions: Based on the above evaluation, it is concluded that the intent of the Code will be met. Therefore, relief is not required for RR-41.

3.1.5 Pump Pressure Boundary

3.1.5.1 Relief Request RR-27, Examination Categories B-L-2 and B-M-2, Visual Examination of Class 1 Pump Casings and Valve Bodies

Code Requirement: Section XI, Table IWB-2500-1, Examination Category B-L-2, Item B12.20, and Examination Category B-M-2, Item B12.50, require a visual examination (VT-3) of the internal surfaces of Class 1 pump casings and valve bodies, respectively, that exceed 4 inch nominal pipe size. The examinations are limited to one pump or valve within a group of pumps or valves which are of the same construction design and manufacturing method, and that perform similar functions. The examination may be performed at the end of the 10-year interval.

Licensee's Code Relief Request: Relief is requested from performing the Code-required visual examination (VT-3) of the internal pressure boundary surfaces of the Class 1 pump casings and valve bodies.

Licensee's Proposed Alternative Examination: Class 1 pumps and valves, exceeding 4 inch nominal pipe size, will receive a visual examination of the internal surfaces when disassembled for maintenance.

Licensee's Basis for Requesting Relief: The Licensee states that disassembly of these pumps and valves for the visual examination during the inspection interval, in the absence of required maintenance, represents an unnecessary exposure to radiation and contamination and is counter to the ALARA guidelines to keep the occupational dose rates as low as reasonably achievable. In view of the cost in man-rem and in view of the minimal benefits obtained, the Licensee concludes that this Code requirement does not provide sufficient benefits to justify the radiation exposure.

Evaluation: The visual examination is to determine whether unanticipated severe degradation of the pump casing or valve body is occurring due to phenomena such as erosion, corrosion, or cracking. However, previous experience during examination of similar pumps and valves at other plants has not shown any significant degradation of pump casings or valve bodies. The concept of visual examination if the pump or valve is disassembled for maintenance is acceptable. The disassembly of the pumps or valves for the sole purpose of inspection is a major effort and, in addition to the possibility of wear or damage to the internal surfaces of the components, could result in personnel receiving excessive radiation exposure. However, if the pumps or valves are disassembled for maintenance, the internal surfaces would be examined, in which case relief would not be required for those particular components.

Conclusions: Based on the above evaluation, it is concluded that the Code requirement is impractical. Therefore, it is recommended that relief be granted provided that: (a) the visual examination (VT-3) of the internal surfaces of the pumps and valves is performed whenever the internal surfaces are made accessible due to disassembly for maintenance, and (b) if the subject pumps or valves have not been disassembled, this fact should be reported by the Licensee in the ISI Summary Report at the end of the interval.

3.1.6 Valve Pressure Boundary

3.1.6.1 Relief Request RR-27, Examination Categories B-L-2 and B-M-2,
Visual Examination of Class 1 Pump Casings and Valve Bodies

NOTE: See the evaluation of this relief request under
Section 3.1.5.1.

3.1.7 General (No relief requests)

3.2 Class 2 Components

3.2.1 Pressure Vessels

3.2.1.1 Relief Requests RR-28 and RR-32, Examination Category C-B, Class 2 Vessel Nozzle Inner Radius Sections

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-B, Item C2.22 requires a 100% volumetric examination of the Class 2 vessel nozzle inside radius sections (vessels with greater than 1/2 inch nominal wall thicknesses) as defined by Figure IWC-2500-4.

Licensee's Code Relief Request: RR-28: Relief is requested from performing the Code-required volumetric examination of the Steam Generator outlet nozzle inside radius section of nozzle 11201-B6-001-IR03.

RR-32: Relief is requested from performing the Code-required volumetric examination of the Residual Heat Removal Heat Exchanger inlet and outlet nozzle inside radius sections 1205-E6-002-IR01 and 1205-E6-002-IR02.

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: RR-28: The configuration of the Steam Generator steam outlet nozzle is such that the nozzle does not have an inner radius. The nozzle is manufactured from a forging that is a solid block of steel. Seven holes, each 8.5 inches in diameter, have been drilled through this forging to provide an outlet for the steam. Thus, this nozzle does not have a conventional inner radius.

RR-32: The configuration of the Residual Heat Removal Heat Exchanger inlet and outlet nozzles are such that the nozzles do

not have an inner radius. The subject nozzles have a sharp inner corner, with a reinforcing metal plate welded behind the inner corners, instead of the usual smooth, round configuration.

Evaluation: The Steam Generator outlet nozzle was designed with an internal multiple hole type flow restrictor. This design does not use a radiused nozzle as described in Figure IWC-2500-4, but instead has several individual inner radii, corresponding to each hole. Therefore, the Code-required volumetric examination of the nozzle inside radius sections cannot be performed.

As shown in the drawing of the Residual Heat Removal Heat Exchanger nozzle-to-vessel welds, the subject nozzles were designed without a nozzle inside radius section. Therefore, the Code-required volumetric examination cannot be performed. Compliance with the exact Section XI requirements would require redesign of these nozzles.

Conclusions: Based on the above, it is concluded that compliance with the specific requirements of Section XI for the subject nozzle inside radius sections is impractical. Therefore, it is recommended that relief be granted as requested.

3.2.1.2 Relief Requests RR-29 and RR-30 (Part 1 of 2), Examination Categories C-A and C-B, Class 2 Vessel and Nozzle-to-Vessel Welds

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-A, Items C1.10, C1.20, and C1.30 require a 100% volumetric examination of pressure retaining welds in Class 2 pressure vessels as defined by Figures IWC-2500-1 and IWC-2500-2. Examination Category C-B, Item C2.21 requires both 100% surface and volumetric examinations of nozzle-to-shell (or head) welds as defined by Figure IWC-2500-4.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume (CRV) of the following welds:

RR-29: Steam Generators

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11201-B6-001-W18	32" Steam Outlet Nozzle-to-Head Weld	50%
11201-B6-002-W19	16" Main Feedwater Nozzle-to-Shell Weld	50%
11201-B6-003-W05	Lower Cone End Stub Barrel-to-Lower Shell Barrel "B" Weld	90%
11201-B6-004-W07	Lower Shell Barrel "A"-to-Tube Plate Weld	94%
11201-B6-004-W26	6" Aux. Feedwater Nozzle-to-Shell Weld	46%

RR-30: Regenerative Heat Exchanger

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11208-E6-001-W01	Head-to-Tube Sheet Weld	94%
11208-E6-001-W02	Tube Sheet-to-Shell Weld	93%
11203-E6-001-W09	Tube Sheet-to-Shell Weld	93%
11208-E6-001-W10	Tube Sheet-to-Head Weld	94%

RR-30: Excess Letdown Heat Exchanger

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11208-E6-002-W01	Unit Flange-to-Channel Head Weld	45%

RR-30: Letdown Heat Exchanger

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11208-E6-003-W03	Vessel Head-to-Head Flange	29%

RR-30: Letdown Reheat Heat Exchanger

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11208-E6-007-W03	Vessel Flange-to-Vessel Shell	84%

RR-30: Discharge Pulsation Dampener

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11208-V4-002-W01	Hemi Head-to-Hemi Head Weld	89%

RR-30: Boron Injection Tank

<u>Identification No.</u>	<u>Description</u>	<u>CRV Examinable</u>
11204-V6-001-W01	Nozzle-to-Head Weld	50%
11204-V6-001-W02	Head-to-Shell Weld	38%
11204-V6-001-W03	Head-to-Shell Weld	50%
11204-V6-001-W04	Nozzle-to-Head Weld	50%

Licensee's Proposed Alternative Examination: None. The Licensee reports that the Code-required volumetric examination will be performed to the maximum percentage possible (see percentages above).

Licensee's Basis for Requesting Relief: Access limitations are generally due to geometric configuration of the welded areas. Flanges and supports restrict coverage of the required examination volume on some of the subject welds. The specific restrictions for each weld are described by the Licensee in the tables attached to relief requests RR-29 and RR-30.

Evaluation: The Licensee's submittals have been reviewed, including the Attachments listing the welds or components for which relief is being requested, the weld configuration, the Code requirement, the reason for the limited examination, and the approximate percentage of the Code-required examination that can be completed. It is noted that, in most cases, a significant portion of the Code-required volumetric examination can and, as the Licensee states, will be completed. The subject components would require extensive modifications in order to obtain complete compliance with the specific requirements of Section XI.

Conclusions: Based on the above, it is concluded that the volumetric examination is impractical to perform to the extent required by the Code and that the limited Section XI volumetric examination, in conjunction with the required hydrostatic tests, provide a reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.2.1.3 Relief Request RR-31, Use of Piping Calibration Blocks to Examine Thin-Wall Vessels

Code Requirement: Section XI, Paragraph IWA-2232 requires the use of the applicable requirements of Article 5 of Section V for the ultrasonic examination of Class 1 and Class 2 vessel welds in material other than ferritic steel. However, Article 5 does not provide specific guidance on how to perform these examinations.

Licensee's Code Relief Request: The Licensee requests the modification of the Section V, Article 5 requirement to allow the use of Section XI, Appendix III for examination of the following Class 2 thin-wall vessels:

- RHR Heat Exchanger 11205-E6-002
- Letdown Heat Exchanger 11208-E6-003
- Letdown Reheat Heat Exchanger 11208-E6-007
- Excess Letdown Heat Exchanger 11208-E6-002
- Regenerative Heat Exchanger 11208-F6-001
- Suction Dampener 11208-V4-001

Licensee's Proposed Alternative Examination: Calibration standards, designed in accordance with Figures T-547.1 and T-546.1 of ASME Section V and containing 10% T notch depths and side-drilled holes, will be utilized to perform ultrasonic examinations on the above listed thin-wall vessels.

Licensee's Basis for Requesting Relief: Article 5 of Section V does not give complete guidance for performing ultrasonic examination of austenitic welds. However, Paragraph T-548 does give permission to modify or supplement the provisions of this article. The calibration blocks that will be used were fabricated from the same diameter and wall thickness piping as the heat exchangers.

Evaluation: It is noted that the later 1986 Code Edition of Section XI, Mandatory Appendix I, "Ultrasonic Examinations,"

Paragraph I-2000 requires that ultrasonic examination of vessel welds less than or equal to 2 inches in thickness and all piping welds shall be conducted in accordance with Appendix III, as supplemented by Appendix I.

Also, Section XI, Paragraph IWA-2240 states that alternative examination methods, a combination of methods, or newly developed techniques may be substituted for the methods specified in Division 1 of Section XI, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those of the specified method.

Since the later Code Edition requires the use of Appendix III, as supplemented by Mandatory Appendix I, and Paragraph IWA-2240 permits the use of alternative examination methods, provided the inspector is satisfied that the results are demonstrated to be equivalent or superior, the Licensee's proposal should be considered acceptable.

Conclusions: Based on the above, it is concluded that the Licensee's proposed alternative examination method is technically justified as being equivalent or superior to the specified method. Therefore, it is recommended that relief be granted as requested.

3.2.2 Piping

3.2.2.1 Relief Request RR-26 (part 2 of 2) and RR-34, Examination Category C-F, Pressure Retaining Welds in Class 2 Piping

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-F, Item C5.21 requires both 100% surface and volumetric examinations of pressure retaining circumferential welds in Class 2 piping as defined by Figure IWC-2500-7.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required volume (CRV) on the following welds:

<u>Relief Request</u>	<u>Examination ID No.</u>	<u>CRV Examinable</u>
RR-26:	11204-120-6	50%
	11204-121-6	50%
	11204-122-6	50%
	11204-123-6	50%
RR-34:	11301-001-5	32%
	11301-001-6	50%
	11301-001-8	41%
	11301-002-5	41%
	11301-002-6	50%
	11301-002-8	50%
	11301-002-9	99%
	11301-002-10	99%
	11301-003-5	32%
	11301-003-6	32%
	11301-003-8	32%
	11301-004-5	44%
	11301-004-6	41%
	11301-004-8	41%
	11301-108-14	86%

Licensee's Proposed Alternative Examination: None. In addition to the Code-required surface examination, the Code-required ultrasonic examination will be performed to the maximum extent possible (see above table).

Licensee's Basis for Requesting Relief: Physical limitations due to geometric configuration of the welded areas (valve-to-pipe or pipe-to-penetration welds) restrict coverage of the Code-required examination volume.

Evaluation: The Licensee's submittal was reviewed, including the Attachments that list the welds for which relief is being requested, the weld configurations, the Code requirements, a brief description of the restriction, and the approximate percentage of the Code-required examination that can be completed. As the Licensee has stated, the geometric configurations of the subject welds restrict coverage of the Code-required examination volume.

Complete examinations which meet the requirements of ASME Code Section XI will be performed on welds of similar configuration using the same inspection techniques, equipment, and procedures as those for the partially inspected welds. Since the welds receiving limited examination are seeing the same operating and environmental conditions as the inspected welds, reasonable assurance of the continued inservice structural integrity of the welds for which relief is requested will be attained.

Conclusions: Based on the above review, it is concluded that the volumetric examination is impractical to perform to the extent required by the Code. Therefore, it is recommended that relief be granted as requested.

3.2.2.2 Relief Requests RR-35, RR-36, and RR-37, Augmented Volumetric Examination of Class 2 Piping Welds in the Engineered Safety Systems

Augmented Requirement: As a condition of licensing, Georgia Power Company agreed to volumetrically examine a minimum of 7.5% of the Class 2 welds in the engineered safety systems (Containment Heat Removal, Emergency Core Cooling, and Residual Heat Removal Systems). These examinations should be performed in accordance with the following requirements:

Section XI, Paragraph III-4420 requires that the volumetric examination be performed using a sufficiently long beam path to provide coverage of the required examination volume in two beam-path directions. The examinations shall be performed from two sides of the weld, where practicable, or from one side of the weld as a minimum. Paragraph III-4430 requires that the angle beam examination for reflectors transverse to the weld be performed on the weld crown on a single scan path to examine the weld root by 1/2 V-path in two directions along the weld. Paragraph III-3410 requires that the basic calibration block be made from materials of the same nominal diameter and nominal wall thickness or pipe schedule as the pipe to be examined. Paragraph III-3430 requires that basic calibration blocks contain circumferential and longitudinal notches whose sides are perpendicular to the surface and at least 1.0 inch long on the O.D. and I.D. surfaces.

Licensee's Relief Request: RR-35: Relief is requested from performing the angle beam examination for reflectors transverse to the weld.

RR-36 and RR-37: Relief is requested from examining 100% of the augmented examination required volume (ARV) of the following 89 welds (6-inch and larger NPS) as listed in RR-36, and 46 welds (2- to 4-inch NPS) as listed in RR-37:

Relief Request 36

<u>Examination ID No.</u>	<u>ARV Examinable</u>	<u>Examination ID No.</u>	<u>ARV Examinable</u>
11202-001-1	50%	11206-007-1	50%
11202-001-17	50%	11206-007-10	50%
11202-140-9	50%	11206-008-1	50%
11202-140-27	50%	11206-008-10	50%
11202-141-19	50%	11206-008-16	94%
11202-188-4	50%	11204-001-9	50%
11202-188-5	50%	11204-006-1	50%
11202-189-1	50%	11204-006-64	50%
11202-189-2	50%	11204-006-72	50%
11202-189-3	44%	11204-007-17	50%
11202-189-7	50%	11204-008-33	50%
11202-192-16	50%	11204-011-8	50%
11202-196-7	50%	11204-012-2	50%
11202-197-3	50%	11204-038-1	80%
11202-202-18	50%	11204-038-8	80%
11202-202-22	50%	11204-123-5	85%
11202-204-1	50%	11204-177-13	50%
11202-204-15	50%	11204-192-1	50%
11202-205-1	50%	11205-003-62	97%
11202-205-14	50%	11205-003-64	50%
11202-207-14	50%	11205-004-54	50%
11202-209-4	50%	11205-005-1	50%
11202-209-5	93%	11205-005-32	50%
11202-211-1	50%	11205-006-1	50%
11202-211-3	50%	11205-006-2	50%
11202-211-17	50%	11205-006-3	50%
11202-212-15	50%	11205-006-20	50%
11202-212-19	50%	11205-006-27	50%
11202-212-36	50%	11205-007-1	50%
11202-216-41	50%	11205-007-23	94%
11202-216-42	50%	11205-007-77	50
11202-218-1	50%	11205-008-1	50%
11202-218-20	50%	11205-009-1	50%
11202-220-2	97%	11205-009-24	50%
11202-220-12	50%	11205-039-3	50%
11202-225-50	50%	11208-137-1	37%
11202-229-12	50%	11208-137-8	94%
11202-229-13	50%	11208-137-15	50%
11206-003-1	50%	11208-139-4	94%
11206-004-4	50%	11208-139-8	93%
11206-004-17	50%	11208-139-30	50%
11206-005-1	48%	11208-139-35	50%
11206-005-55	50%	11208-411-2	50%
11206-006-1	48%	11208-411-51	88%
11206-006-51	50%		

Relief Request 37

<u>Examination ID No.</u>	<u>ARV</u> <u>Examinable</u>	<u>Examination ID No.</u>	<u>ARV</u> <u>Examinable</u>
11204-014-13	50%	11208-022-7	88%
11204-014-20	50%	11208-022-22	88%
11204-014-26	92%	11208-023-36	88%
11204-014-54	50%	11208-023-43	88%
11204-015-13	50%	11208-023-55	88%
11204-028-1	93%	11208-023-56	88%
11204-037-56	50%	11208-023-59	81%
11204-063-54	50%	11208-023-76	88%
11204-169-1	50%	11208-044-1	50%
11204-169-45	50%	11208-044-2	75%
11204-197-8	88%	11208-044-4	75%
11208-003-2	50%	11208-046-2	75%
11208-003-4	50%	11208-046-3	75%
11208-003-6	50%	11208-046-4	75%
11208-003-17	50%	11208-099-4	75%
11208-003-21	50%	11208-101-6	50%
11208-003-30	50%	11208-123-55	50%
11208-003-33	50%	11208-146-5	50%
11208-003-49	75%	11208-146-17	95%
11208-003-57	75%	11208-147-2	75%
11208-022-2	85%	11208-147-3	75%
11208-022-5	91%	11208-147-5	50%
11208-022-6	88%	11208-147-8	75%

Licensee's Proposed Alternative Examination: RR-35: An axial ultrasonic scan, using a 1/4-inch diameter 60° shear wave transducer will be performed on the required welds. This transducer will use a modified wedge to reduce the front wedge to index point distance.

RR-36, RR-37: None. In addition to a surface examination, an ultrasonic examination will be performed to the maximum extent possible.

Licensee's Basis for Requesting Relief: RR-35: The Licensee states that because the thin-wall piping welds at Vogtle have extremely wide weld crowns on both circumferential and longitudinal welds the scans parallel to the welds will not be performed since the sound beam cannot be made to hit the root area of the weld. The weld crowns cannot be ground flush because of minimum wall thickness violations due to weld shrinkage at the root.

RR-36 and RR-37: The Licensee states that physical limitations due to geometric configuration of the welded areas (i.e., valve-to-pipe, reducer-to-pipe, flange-to-pipe, elbow-to-pipe) and piping support obstructions prevent complete coverage of the required volume.

Evaluation: The information submitted by the Licensee has been reviewed, including the attachments that list the welds for which relief is being requested, the weld configuration, the restriction, and the approximate percentage of the augmented examination that can be completed. The physical limitations described prevent complete coverage of the subject thin-wall and small-diameter piping welds to the extent described by the Licensee. A significant portion of the augmented examination commitment will be completed. The augmented examinations provide reasonable assurance of the continued inservice structural integrity.

NOTE: In the original submittal of RR-35 (Revision 0) for ISI, the Licensee also requested relief from using calibration standards as required by Section XI, Article III. The Licensee proposed using a flat calibration block containing side-drilled holes in lieu of the Code-requirement. This relief request had been previously granted for PSI with the condition that proper calibration blocks be obtained and utilized for all future ISI examinations.

In the October 21, 1987 response to the NRC request for additional information with regard to why the proper calibration blocks were not being obtained for use during ISI examinations, the Licensee committed to modify RR-35 to delete the request for relief from calibration block requirements. This request was deleted in RR-35 (Revision 1), submitted July 18, 1988.

Conclusions: Based on the above, it is concluded that the augmented examination of these welds is impractical to perform to the extent required. Therefore, it is recommended that relief be granted as requested provided that proper calibration blocks are obtained and used during ISI examinations.

3.2.3 Pumps

3.2.3.1 Relief Request RR-30 (Part 2 of 2), Examination Category C-G, Class 2 Pump Casing Weld

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-G, Item C6.10 requires a 100% surface examination of Class 2 pump casing welds as defined by Figure IWC-2500-8.

Licensee's Code Relief Request: Relief is requested from examining 100% of the Code-required surface area on Safety Injection Pump casing-to-suction nozzle weld 11204-P6-003-W02.

Licensee's Proposed Alternative Examination: None. The Code-required surface examination will be completed to the maximum extent practical.

Licensee's Basis for Requesting Relief: The Licensee reports that only 66% of the Code-required surface area can be examined because the pump supports prevent access to the remaining area.

Evaluation: The information submitted by the Licensee has been reviewed and it is noted that a significant portion of the Code-required surface examination can and will be performed. Because of the interference caused by the pump supports, the Safety Injection Pump would require extensive modification in order to obtain complete compliance with the specific requirements of Section XI.

Conclusions: Based on the above, it is concluded that the Section XI surface examination is impractical to perform to the extent required by the Code and that the limited surface examination will provide reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.2.4 Valves (No relief requests)

3.2.5 General

3.2.5.1 Relief Request RR-33, Examination Category C-D, Pressure Retaining Class 2 Bolting Exceeding 2 Inch Diameter

NOTE: Relief was requested from performing the Code-required volumetric examination of the Safety Injection Pump casing studs if the pumps were not disassembled for maintenance. In the October 21, 1987, response to the NRC request for additional information, the Licensee withdrew Request for Relief RR-33.

3.3 Class 3 Components (No relief requests)

3.4 Pressure Tests

3.4.1 Class 1 System Pressure Tests (No relief requests)

3.4.2 Class 2 System Pressure Tests

3.4.2.1 Relief Request RR-44, Examination Category C-H, Hydrostatic Test of Class 2 Components Which Cannot be Isolated from Class 1 Components

Code Requirement: Section XI, Article IWC-5000 requires that Class 2 pressure retaining components within each system boundary be subjected to a system hydrostatic pressure test for each system or portions of systems. The system hydrostatic test pressure shall be at least 1.10 times the system pressure for systems with design temperatures of 200°F or less, and at least 1.25 times the system pressure for systems with design temperatures above 200°F. The system pressure shall be the lowest pressure setting among the safety or relief valves provided for overpressure protection within the boundary of the system to be tested. For systems (or portions of systems) not provided with safety or relief valves, the system design pressure shall be substituted for the system pressure.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic test at the specified test pressure for the following portions of piping and valves between the boundary valves and the first shutoff valves:

<u>Line No.</u>	<u>Check Valve(s)</u>	<u>Shutoff Valves</u>
1208-023	1208-U4-006	1208-U4-005
1208-042	1208-U4-359	1208-U4-356
1208-044	1208-U4-360	1208-U4-357
1208-046	1208-U4-361	1208-U4-358
1208-488	1208-U6-037	HV-8147
1208-008	1208-U6-035	HV-8146 & 1208-U4-498
1204-063	1204-U6-013	HV-8801A&B
1204-082	1204-U6-013	HV-8843
1204-058	1204-U6-013	HV-1204-U4-007
1204-016	1204-U4-120	HV-8802A & HV-8881
1204-197	1204-U4-121	HV-8802A & HV-8881

(continued)

<u>Line No.</u>	<u>Check Valve(s)</u>	<u>Shutoff Valves</u>
1204-020	1204-U6-128	HV-8840 & HV-8825
1204-201	1204-U6-129	HV-8840 & HV-8825
1204-017	1204-U4-123	HV-8802B & HV-8824
1204-199	1204-U4-122	HV-8802B & HV-8824
1204-029	1204-U4-146	HV-8835 & HV-8823
1204-030	1204-U4-145	HV-8835 & HV-8823
1204-031	1204-U4-144	HV-8835 & HV-8823
1204-032	1204-U4-143	HV-8835 & HV-8823
1204-039	1204-U6-147	HV-8809A
	1204-U6-148	HV-8890A
1204-041	1204-U6-149	HV-8809B
	1204-U6-150	HV-8890B

Licensee's Proposed Alternative Examination: In lieu of pressurizing the above portions of piping to Class 2 requirements, the piping will be pressurized to Class 1 requirements.

Licensee's Basis for Requesting Relief: The test pressures required by IWC-5222 (Class 2) are higher than those required by IWB-5222 (Class 1). Paragraph IWC-5222 requires a test pressure of 1.25 times the system pressure or system design pressure. Paragraph IWB-5222 requires a test pressure of 1.02 to 1.10 times the system nominal operating pressure depending on the temperature. These portions of Class 2 piping are isolated from Class 1 piping by utilizing check valves which open with flow to Class 1. To pressurize the upstream side of the check valves to Class 2 requirements would result in exceeding the Class 1 hydrostatic test pressure requirements for adjacent Class 1 piping.

Evaluation: The system's design does not permit pressurizing the sections of piping to the Code-required pressure without either extensive temporary valve modifications or overpressurizing the Class 1 sections of connected piping. Because of this, the Code-required test pressure is impractical to attain. However, these sections of piping will be subjected

to a pressure slightly higher than normal operation pressure. The visual inspection of the piping during the pressure test, as well as other NDE examinations for selected welds in the systems, will provide reasonable assurance of the continued inservice structural integrity of the piping.

Conclusions: Based on the above evaluation, it is concluded that the Code-required test pressure is impractical to attain. Therefore, it is recommended that relief be granted as requested.

3.4.2.2 Relief Request RR-45, Examination Category C-H, Class 2 System Hydrostatic and System Pressure Tests

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H, Items C7.30, C7.40, C7.70, and C7.80 require a system hydrostatic test and a system pressure test during system functional and system inservice testing of Class 2 piping and valves.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic and system pressure tests on Class 2 piping systems of containment penetrations which are not required for operation to support engineered safety features systems.

Licensee's Proposed Alternative Examination: None. The Licensee states that piping systems that penetrate the containment vessel will be tested as required by Appendix J of 10 CFR 50.

Licensee's Basis for Requesting Relief: The Licensee's Basis for Relief states, "IWA-1320(d) states 'The portion of piping that penetrates a containment vessel, which is required by Section III to be constructed to Class 1 and 2 rules for piping and which may differ from the classification of the balance of the piping system, need not affect the overall system classification that determines the applicable rules of this Division.' Relief is requested from the system pressure test requirements of Examination Category C-H on the Class 2 portions of piping that penetrate the containment vessel on the piping systems described above. The safety-related function of these piping penetrations is to minimize the release of radioactivity to the outside atmosphere following a 'Loss of Coolant Accident.' Appendix J of 10 CFR Part 50 requires

adequate testing of containment penetrations to provide assurance of structural integrity and, as such, further testing by Section XI is not necessary."

Evaluation: Appendix J addresses the structural integrity of the primary containment, not the structural integrity of the Code Class 2 piping for which relief is being requested. The request for relief does not contain a specific listing of Class 2 piping system(s)/line(s) involved and the Licensee has not provided adequate technical information to justify the determination that the Code-requirement is impractical.

Conclusions: Based on the above evaluation, it is concluded that the Licensee has not justified the determination of impracticality and that imposing the Code requirement on the Licensee would not result in hardship. Therefore, it is recommended that relief be denied.

3.4.2.3 Relief Request RR-46, Examination Category C-H, Visual (VT-2) Examinations During System Functional or System Inservice Test

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H, Items C7.10, C7.30, C7.50, and C7.70 require a VT-2 examination during a system functional or a system inservice test of Class 2 pressure vessels, piping, pumps, and valves, respectively per IWC-5221.

Licensee's Code Relief Request: Relief is requested to allow VT-2 visual examination of pressure retaining components during conditions other than system functional or system inservice testing.

Licensee's Proposed Alternative Examination: A VT-2 visual examination will be performed on pressure retaining components at pressures which meet or exceed the requirements of IWC-5221.

Licensee's Basis for Requesting Relief: Portions of some systems are normally pressurized or can be pressurized to their normal operating pressures without the system being pressurized during a system functional test or a system inservice test. A typical example of the above is the portion of a system from an atmospheric storage tank to the suction side of a pump.

Evaluation: ASME Code Section XI, Paragraph IWA-2240 permits the use of alternative examination methods, a combination of methods, or techniques, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those specified.

The Licensee has stated that the VT-2 visual examination will be performed on pressure retaining components at pressures which meet or exceed the Code requirements. However, the

Licensee has not addressed the test pressure hold time prior to the start of VT-2 examinations. It is noted that the system functional test, conducted to verify operability in systems (or components) not required to operate during normal plant operation while under system operating pressure, requires a hold time of 10 minutes after attaining the system operating pressure. The system inservice test, conducted to perform VT-2 visual examination while the system is in service under operating pressure, requires no holding time provided the system has been in operation for at least 4 hours. The appropriate test pressure hold times should be adhered to for the alternative visual examination.

Conclusions: Based on review of the Licensee's submittal and the above evaluation, it is concluded that relief should be granted provided that (a) the appropriate hold time, as well as the test pressures, meet or exceed the Code-requirement, and (b) the subject VT-2 visual examination for leakage is performed once each inspection period.

3.4.3 Class 3 System Pressure Tests

3.4.3.1 Relief Request RR-48, Examination Category D-A, Class 3 System
Inservice Test of Systems Used in Support of Reactor Shutdown
Function

Code Requirement: Section XI, Table IWD-2500-1, Examination Category D-A, Item D1.10 requires a VT-2 visual examination of pressure retaining components during a system inservice test (IWD-5221). Paragraph IWA-5213(c) requires that systems be in operation for at least 4 hours prior to the start of the VT-2 visual examination during the system inservice test.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-2 visual examination during the system inservice test for the following Class 3 Chemical and Volume Control (CVC) lines:

Line 1208-242 from 1208-P6-006 to 1208-F6-003
Line 1208-243 from 1208-P6-007 to line 1208-242
Line 1208-213 from line 1208-242 to 1208-T4-003
 & valve 273
Line 1208-131 from 1208-F6-003 to valve HV-8104
 & line 1208-134
Line 1208-134 from line 1208-131 to valve 188, line 1208-118
 & valve HV-8439
Line 1208-118 from line 1208-134 to valve 174
Line 1208-116 from line 1208-134 to valves FV-0111B
 & FV-0110B
Line 1208-127 from line 1208-116 to valve 171
Line 1208-450 from line 1208-131 to line 1208-213

Licensee's Proposed Alternative Examination: A VT-2 visual examination will be performed during system functional testing in lieu of system inservice testing.

Licensee's Basis for Requesting Relief: Paragraph IWA-5213(c) requires that systems be in operation for at least 4 hours prior to the start of VT-2 visual examination during system

inservice test. The Licensee states that those portions of systems listed above are not normally in operation for durations of at least 4 hours.

Evaluation: Paragraph IWA-5213(b) requires a hold time of only 10 minutes for system functional tests. This hold time may be adequate if the subject lines are not insulated. However, if the subject lines are insulated, the Licensee should address the following: Can the insulation be removed for the functional testing? If the insulation cannot be removed and if the operating time is less than the Code-required 4 hours, what would the maximum operating time be prior to the VT-2 visual examination? Is it possible for the subject system to remain in operation for the Code-required 4 hours in order to meet the Code requirement? The Licensee has not provided adequate information to justify that the Code-required examination is impractical.

Conclusions: Based on the above evaluation, it is concluded that the Licensee has not justified the determination of impracticality and that imposing the Code requirement on the Licensee would not result in hardship. Therefore, it is recommended that relief be denied.

3.4.3.2 Relief Request RR-49, Examination Category D-A, System Hydrostatic Test and Visual (VT-2) Examination of Class 3 Vertical Pit Type Pumps

Code Requirement: Section XI, Table IWD-2500-1, Examination Category D-A, Item D1.10 requires a system hydrostatic test (IWD-5223) and a VT-2 visual examination during system inservice testing (IWD-5221) of Class 3 components in support of reactor shutdown function.

Licensee's Code Relief Request: Relief is requested from performing the Code-required hydrostatic test and VT-2 visual examination during the system inservice test of the Class 3 vertical pit type pumps. The following nuclear service cooling water (NSCW) pumps and transfer pumps are affected by this relief request:

1-1202-P4-001	1-1202-P4-005
1-1202-P4-002	1-1202-P4-006
1-1202-P4-003	1-1202-P4-007
1-1202-P4-004	1-1202-P4-008

Licensee's Proposed Alternative Examination: None. These pumps are periodically tested as required by Subsection IWP. These tests verify operability of the pumps and, by doing so, would detect significant leakages through the pressure retaining boundary. A VT-2 visual examination will be performed each inspection period during system inservice testing of portions of the pumps which are not submerged in the NSCW tower basin.

Licensee's Basis for Requesting Relief: The NSCW pumps and transfer pumps are vertical pit type pumps which take suction from the NSCW tower basins. Since these pumps are vertical pit type pumps, there are no isolation valves on the suction side of the pumps to facilitate hydrostatic testing. Therefore, the performance of a hydrostatic test on the pumps and the piping

to the first discharge shutoff valve is impractical. In addition, the performance of a VT-2 visual examination during system inservice testing is also impractical on the suction side portion of these pumps because they are submerged in the NSCW tower basin.

Evaluation: As there are no isolation valves on the suction side of these vertical pit type pumps, a hydrostatic test is impractical. Likewise, the performance of the VT-2 visual examination for evidence of leakage of the submerged section on the suction side of the pumps is impractical. The inservice tests, as required by Subsection IWP to verify operability of these pumps, would detect significant leakages through the pressure retaining boundary.

Conclusions: Based on the above evaluation, it is concluded that the Code-required hydrostatic testing and VT-2 requirements are impractical for the portions of Class 3 piping listed above and that the functional tests of these pumps will provide reasonable assurance of the continued inservice structural integrity. Therefore, it is recommended that relief be granted as requested.

3.4.3.3 Relief Request RR-50, Examination Categories D-A, D-B, and D-C, Visual (VT-2) Examinations During System Functional or System Inservice Tests

Code Requirement: Section XI, Table IWD-2500-1, Examination Category D-A, Item D1.10 and Examination Category D-C, Item 3.10 require a VT-2 visual examination of pressure retaining components during a system inservice test per IWD-5221. Examination Category D-B, Item D2.10 requires a VT-2 visual examination of pressure retaining components during a system functional test per IWD-5222.

Licensee's Code Relief Request: Relief is requested to allow VT-2 visual examination of pressure retaining components during conditions other than system functional or system inservice testing.

Licensee's Proposed Alternative Examination: The Code-required VT-2 visual examination will be performed on pressure retaining components at pressures which meet or exceed the requirements of IWD-5221 or IWD-5222.

Licensee's Basis for Requesting Relief: Portions of some systems are normally pressurized or can be pressurized to their normal operating pressures without the system being pressurized during a system functional test or a system inservice test. The Licensee states that a typical example of the above is the portion of a system from an atmospheric storage tank to the suction side of a pump. Relief is requested to allow VT-2 visual examination of the pressure retaining components at any time as long as the portion of the system being examined is subjected to pressures which meet or exceed the requirements of IWD-5221 or IWD-5222.

Evaluation: ASME Code Section XI, Paragraph IWA-2240 permits the use of alternative examination methods, a combination of methods, or techniques, provided the Inspector is satisfied that the results are demonstrated to be equivalent or superior to those specified.

The Licensee has stated that the VT-2 visual examination will be performed on pressure retaining components at pressures which meet or exceed the Code requirements. However, the Licensee has not addressed the test pressure hold time prior to the start of VT-2 examinations. It is noted that the system functional test, conducted to verify operability in systems (or components) not required to operate during normal plant operation while under system operating pressure, requires a hold time of 10 minutes after attaining the system operating pressure. The system inservice test, conducted to perform VT-2 visual examination while the system is in service under operating pressure, requires no holding time provided the system has been in operation for at least 4 hours. The appropriate test pressure hold times should be adhered to for the alternative visual examination.

Conclusions: Based on review of the Licensee's submittal and the above evaluation, it is concluded that relief should be granted provided that (a) the appropriate hold time, as well as the test pressures, meet or exceed the Code-requirement, and (b) the subject VT-2 visual examination for leakage is performed once each inspection period.

3.4.3.4 Relief Request RR-51, Examination Category D-B, Visual (VT-2) Examination During System Functional Test

Code Requirement: Section XI, Table IWD-2500-1, Examination Category D-B, Item D2.10 requires a VT-2 visual examination of Class 3 pressure retaining components during a system functional test as defined by IWD-5222.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-2 visual examination during a system functional test of the following portions of systems:

Line 1217-267 from valve 084 to line 1217-071
Line 1217-268 from valve 085 to line 1217-072
Line 1217-266 from valve 086 to line 1217-073
Line 1217-265 from valve 087 to line 1217-150
Line 1217-073 from line 1217-266 to line 1217-150
Line 1217-071 from line 1217-267 to line 1217-150
Line 1217-072 from line 1217-268 to line 1217-150
Line 1217-150 from valve HV-2041 to lines
1217-071, 1217-022, 1217-073, & 1217-265

Licensee's Proposed Alternative Examination: A VT-2 visual examination will be performed during system inservice testing in lieu of system functional test.

Licensee's Basis for Requesting Relief: The Licensee states that the portions of systems listed above are pressurized during normal system operation and, as such, it is requested that the VT-2 visual examination be allowed to be performed during a system inservice test.

Evaluation: A system functional test is conducted to verify operability in systems (or components) not required to operate during normal plant operation while under system operating pressure. A system inservice test VT-2 examination is conducted while the system is in service under operating pressure. Therefore, the Licensee's proposal to perform the

VT-2 visual examination on the subject piping when pressurized during normal system operation meets the intent of the Code.

Conclusions: Based on the above evaluation, it is concluded that the specific Code requirement is impractical and that the alternative test proposed by the Licensee meets the intent of the Code. Therefore, it is recommended that relief be granted as requested.

4.3.5 Relief Request: RR-53, Examination Category D-C, VT-2 Visual Examination During Hydrostatic and System Inservice Tests of Spent Fuel Cooling and Purification System.

Code Requirement: Section XI, Table IWD-2500-1, Examination Category D-C, Item U3.10 requires VT-2 visual examinations during hydrostatic and system inservice tests of Class 3 pressure containing components.

Licensee's Code Relief Request: Relief is requested from performing the Code-required VT-2 visual examination during hydrostatic and system inservice tests on Class 3 piping of the Spent Fuel Cooling and Purification System which are encased in concrete or submerged in the spent fuel pit.

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: Portions of the Spent Fuel Cooling and Purification System are encased in concrete or submerged in the spent fuel pit precluding any direct or remote means of performing the Code-required VT-2 visual examination. In addition, the requirements of Paragraph IWA-5244(b) for buried piping cannot be met because the piping is submerged preventing the use of flow instrumentation. The Licensee also reports that the Technical Specifications require that spent fuel pit water level be maintained.

Evaluation: Because the subject portions of the Spent Fuel Cooling and Purification System are encased in concrete or submerged in the spent fuel pit, the Code-required VT-2 visual examination during hydrostatic and system inservice tests is impractical. The continued monitoring of the spent fuel pit water level, as required by the Technical Specifications, will provide reasonable assurance of the continued inservice structural integrity of the subject piping.

Conclusions: Based on the above evaluation, it is concluded that the Code-required VT-2 visual examination during hydrostatic and system inservice tests of the encased or submerged portions of these lines is impractical to perform. Therefore, it is recommended that relief be granted as requested.

3.4.4 General

3.4.4.1 Relief Request RR-47, Examination Categories C-H, D-A, and D-B, Visual (VT-2) Examinations During System Functional or System Inservice Tests of Systems Which Contain Air During System Operation

Code Requirement: Section XI, Table IWC-2500-1, Examination Category C-H, Items C7.10, C7.30, and C7.70, and Examination Categories D-A and D-B, Items D1.10 and D2.10, respectively, all require a VT-2 visual examination of pressure retaining components during a system functional or system inservice test.

Licensee's Code Relief Request: Relief is requested from performing a VT-2 visual examination during system functional or system inservice testing of the containment hydrogen monitor system and the radiation monitor system. Both of these systems contain air during system operation.

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: The Licensee reports that the containment hydrogen monitor system and the radiation monitor system contain air during system operation. The VT-2 visual examinations are conducted to locate evidence of leakage from pressure retaining components. Since these systems are air-containing systems, a VT-2 visual examination will not locate evidence of leakage and, as such, a VT-2 visual examination is unnecessary. The Licensee also reports that the system hydrostatic tests required once per interval are sufficient to ensure the integrity of the pressure-retaining boundary.

Evaluation: Paragraph IWC-5210(b) of the Code states, in part, that "The system pressure tests and visual examinations shall be conducted in accordance with IWA-5000 and this Article. The contained fluid in the system shall serve as the pressurizing medium Where air is used, the test procedure shall permit the detection and location of through-wall leakages in components of the system tested." The Licensee has not provided technical information to justify the determination that the Code-required examination and test procedures are impractical.

Conclusions: Based on the above evaluation, it is concluded that the Licensee has not justified the determination of impracticality and that imposing the Code requirement on the Licensee would not result in hardship. Therefore, it is recommended that relief be denied.

3.4.4.2 Relief Request RR-54, Examination Categories B-P, C-H, D-A, D-B, and D-C, Hydrostatic Testing of Piping Systems 1-Inch and Less Nominal Pipe Size

Code Requirement: Section XI, Tables IWB-, IWC-, and IWD-2500-1, Examination Categories B-P, C-H, D-A, D-B, and D-C all require system hydrostatic testing on all sizes of pressure retaining components.

Licensee's Code Relief Request: Relief is requested from performing system hydrostatic testing on (a) piping \leq 1-inch nominal pipe size (NPS) and (b) components and their connections in piping \leq 1-inch NPS.

Licensee's Proposed Alternative Examination: None. The Licensee states that system hydrostatic testing and the accompanying VT-2 visual examination will be performed on piping \leq 1-inch NPS and components and their connections in piping \leq 1-inch NPS which are unisolatable from larger diameter piping which require system hydrostatic testing.

Licensee's Basis for Requesting Relief: The Licensee states that specific system hydrostatic testing on piping \leq 1-inch NPS and components and their connections in piping \leq 1-inch NPS is impractical. Typically piping and components of this small diameter are used for sampling systems, reactor pressure vessel head vent systems, excess letdown systems, and for instrumentation applications. The systems mentioned are seldom operated and, as such, degradation is expected to be negligible. Piping and components used for instrumentation applications (i.e., pressure indicators, flow indicators) are subjected to essentially no-flow conditions and, as such, failure mechanisms which cause degradation are minimal.

Evaluation: The only Code-required examination for the subject small diameter (\leq 1-inch NPS) pressure retaining components is the system hydrostatic test with a VT-2 visual examination for leakage. Just because the Licensee feels the Code-requirement is unjustified is not sufficient for granting relief based on impracticality. Requiring the Licensee to perform the Code-required hydrostatic test with a VT-2 visual examination for evidence of leakage would not result in hardship.

Conclusions: Based on the above evaluation, it is concluded that the Licensee has not demonstrated that the Code requirement is impractical and, therefore, the subject small diameter (\leq 1-inch NPS) pressure retaining components should not be generically exempted from the Code-required hydrostatic testing requirements. Imposing the Code-requirement would not result in undue hardship. Therefore, it is recommended that relief be denied.

3.5 General

3.5.1 Ultrasonic Examination Techniques

3.5.1.1 Relief Request RR-18, Use of ASME Code Section XI, Appendix III for Ultrasonic Examination of Austenitic and Dissimilar Metal Piping Welds

Code Requirement: Section XI, Paragraph IWA-2232(c) requires the use of Section V, Article 5 for the ultrasonic examination of non-ferritic piping.

Licensee's Code Relief Request: Relief is requested from the requirement of Paragraph IWA-2232(c).

Licensee's Proposed Alternative Examination: Ultrasonic examination of austenitic and dissimilar metal piping welds will be performed using the requirements of ASME Code Section XI, Appendix III.

Licensee's Basis for Requesting Relief: ASME Code Section XI, Appendix III, Supplement 7 provides more appropriate guidance for ultrasonic examination of austenitic and dissimilar metal piping welds.

Evaluation: Review has been completed on the Licensee's submittal and also on the Licensee's response to NRC Question 250.4 with regard to the use of Appendix III as modified by Supplement 7. The Licensee has stated that, when the examination can be conducted from only one side of the weld, other angles may be used to ensure adequate examination of the weld and adjacent base material on both sides of the weld. Also, any crack-like indication, regardless of amplitude, will be investigated and recorded by a Level II

or III examiner to accurately identify and locate the indication. All recordable indications are to be evaluated and dispositioned by Level II or III personnel to the extent practical in order to determine the nature of the indication.

Conclusions: Based on the above, it is concluded that Appendix III of Section XI is an acceptable alternative because it is technically acceptable and is also referenced in 10 CFR 50.55a(b). Therefore, it is recommended that relief be granted as requested.

3.5.2 Exempted Components (No relief requests)

3.5.3 Other

3.5.3.1 Relief Request RR-38, Subsection IWE, Requirements for Class MC Components

Code Requirement: Section XI, Table IWE-2500-1, delineates examination requirements for Class MC components.

Licensee's Code Relief Request: Relief is requested from performing the Code-required examinations as outlined in Table IWE-2500-1.

Licensee's Proposed Alternative Examination: None.

Licensee's Basis for Requesting Relief: The Licensee states that the Federal Register, Volume 48, No. 28, Monday, February 7, 1983, Page 5532, relative to 10 CFR 50 Codes and Standards for Nuclear Power Plants, Item No. 4, indicated that Subsection IWE, "Requirements for Class MC Components of Light Water Cooled Power Plants," was added to Section XI of the ASME Code by the Winter 1981 Addenda. However, 10 CFR 50.55a presently only incorporates those portions of Section XI that address the ISI requirements for Class 1, 2, and 3 components and their supports. The regulations do not currently address the ISI of containments. Since this amendment is only intended to update current regulatory requirements to include the latest Code addenda, the requirements of Subsection IWE are not imposed upon Licensees by the NRC as a result of this amendment.

Evaluation: 10 CFR 50.55a requires compliance with Section XI of the ASME Code, which included Subsection IWE. Federal

Register, Volume 48, No. 28, Monday, February 7, 1983,
Page 5532 indicates that Subsection IWE is not required since
this subsection is, at the current time, under evaluation.

Conclusions: Based on the above review, it is concluded that
relief is not required.

3.5.3.2 Relief Request RR-43, Visual Examination (VT-4) of Snubbers

Code Requirement: Section XI, Article IWF-5000 outlines the inservice test requirements for hydraulic and mechanical type snubbers. Personnel performing these tests are to be qualified to both VT-3 and VT-4 visual examination requirements.

Licensee's Code Relief Request: Relief is requested from using Article IWF-5000 and qualified VT-4 visual examination personnel.

Licensee's Proposed Alternative Examination: The Licensee proposes performing the subject testing of snubbers per the Plant Technical Specifications.

Licensee's Basis for Requesting Relief: Instead of using Article IWF-5000, the testing of snubbers per the Plant Technical Specifications will be performed. This testing program is designed to demonstrate the functional integrity of the snubbers. The Licensee states that this program is, at least, equivalent to the requirements of Article IWF-5000. The functional testing of the snubbers will be performed by personnel trained in the proper use of the test apparatus using approved procedures. In addition, the required VT-3 examination will be performed using qualified personnel.

Evaluation: ASME Code Section XI requires an additional 10% sample if a snubber fails. The Licensee's Technical Specification requires that additional samples are based on the number of failures within a snubber type and in no case less than one-half of the initial sample size. Therefore, generic component support failures which would be found under examinations as required by Subsection IWF should also be found under the sampling plan proposed by the Licensee.

Conclusions: Based on the above evaluation, it is concluded that the Licensee's proposed alternative for the selection and examination of supports to be examined provides an acceptable level of quality and safety as it meets or exceeds the Code requirements. Therefore, it is recommended that relief be granted as requested.

4. CONCLUSION

Pursuant to 10 CFR 50.55a(g)(6), it has been determined that certain Section XI required inservice examinations are impractical to perform. In all cases except Requests for Relief RR-45, RR-47, RR-48, and RR-54, the Licensee has either withdrawn a request for relief (RR-13 and RR-33) or demonstrated that specific Section XI requirements are impractical. Conditional relief should be granted for Requests for Relief RR-27, RR-35, RR-36, RR-37, RR-46, and RR-50 provided that the Licensee meets the conditions/additional requirements defined in the relief request evaluations and conclusions in Section 3 of this report. Relief is not required for Requests for Relief RR-9, RR-38, and RR-41 as the Licensee is meeting the Regulations and Code requirements. In the cases of Requests for Relief RR-45, RR-47, RR-48, and RR-54, it is concluded that: (a) the Licensee has not provided information to support the determination that the Code requirement is impractical and (b) requiring the Licensee to comply with the Code requirement would not result in hardship.

This technical evaluation report has not identified any practical method by which the Licensee can meet all the specific inservice inspection requirements of Section XI of the ASME Code for the existing Vogtle Electric Generating Plant, Unit 1, facility. Requiring compliance with all the exact Section XI required inspections would require redesign of a significant number of plant systems, sufficient replacement components to be obtained, installation of the new components, and a baseline examination of these components. Even after the redesign efforts, complete compliance with the Section XI examination requirements probably could not be achieved. Therefore, it is concluded that the public interest is not served by imposing certain provisions of Section XI of the ASME Code that have been determined to be impractical. Pursuant to 10 CFR 50.55a(g)(6), relief is allowed from these requirements which are impractical to implement if granting the relief will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the Licensee that could result if the requirements were imposed on the facility.

The development of new or improved examination techniques should continue to be monitored. As improvements in these areas are achieved, the Licensee should incorporate these techniques in the ISI program plan examination requirements.

Based on the review of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Program, through Revision 3, the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Plan, Revision 0, the Licensee's responses to the NRC's request for additional information, and the recommendations for granting relief from the ISI examination requirements that have been determined to be impractical, it has been concluded that the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Program and Plan, with the exception of Requests for Relief RR-45, RR-47, RR-48, and RR-54, are acceptable and in compliance with 10 CFR 50.55a(g)(4).

5. REFERENCES

1. Code of Federal Regulations, Volume 10, Part 50.
2. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Division 1:
1983 Edition through Summer 1983 Addenda
1974 Edition through Summer 1975 Addenda
3. Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Program, Revision 0, submitted November 24, 1986.
4. NUREG-0800, Standard Review Plans, Section 5.2.4, "Reactor Coolant Boundary Inservice Inspection and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components," July 1981.
5. Letter, dated August 14, 1987, M. A. Miller (NRC) to J. P. O'Reilly [Georgia Power Company (GPC)], "Request for Additional Information on the First 10-Year Interval Inservice Inspection Program Plan."
6. Letter, dated October 21, 1987, L. T. Gucwa (GPC) to Document Control Desk (NRC), Response to Request for Additional Information on the First 10-Year Interval Inservice Inspection Program Plan.
7. Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Plan (10-volume set), Revision 0, dated June 11, 1987.
8. Letter, dated July 18, 1988, W. G. Hairston, III (GPC) to Document Control Desk (NRC), containing Revisions 1 and 2 to Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Program.
9. Letter, dated May 10, 1989, W. G. Hairston, III (GPC) to Document Control Desk (NRC), containing Revision 3 to Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection Program.

10. NUREG-1137, Supplement 4, Safety Evaluation Report Related to the Operation of Vogtle Electric Generating Plant, Unit 1, dated December 1986.
11. Letter, dated November 2, 1987, L. T. Gucwa (GPC) to Document Control Desk (NRC), forwarding pages inadvertently omitted from October 21, 1987 submittal of inservice inspection plan.
12. Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations," Revision 1, dated February 1983.
13. Regulatory Guide 1.14, "Reactor Coolant Pump Flywheel Integrity," Revision 1, dated August 1985.
14. Letter, dated February 9, 1987, J. A. Bailey (GPC) to Document Control Desk (NRC), Nuclear Service Cooling Water Systems.
15. Letter, dated May 8, 1985, V. L. Brownlee (NRC) to R. J. Kelly (GPC), forwarding NRC Inspection Report Nos. 50-424/85-18 and 50-425/85-18 regarding GPC demonstration of ultrasonic examination procedures and equipment on centrifugally cast stainless steel.
16. Letter, dated July 1, 1985, V. L. Brownlee (NRC) to R. J. Kelly (GPC), forwarding NRC Inspection Report Nos. 50-424/85-25 and 50-425/85-25 regarding (in part) PSI examination procedures.

BIBLIOGRAPHIC DATA SHEET

(See instructions on the reverse.)

1. TITLE AND SUBTITLE

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10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

This report presents the results of the evaluation of the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval Inservice Inspection (ISI) Program, through Revision 3, submitted May 10, 1989, and the Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Plan, Revision 0, submitted October 21, 1987. The Program includes the requests for relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI requirements which the licensee has determined to be impractical. The Vogtle Electric Generating Plant, Unit 1, First 10-Year Interval ISI Program and Plan are evaluated in Section 2 of this report. The ISI Program and Plan are evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the Nuclear Regulatory Commission (NRC) review before granting an operating license. The requests for relief from the ASME Code requirements which the Licensee has determined to be impractical for the first 10-year inspection interval are evaluated in Section 3 of this report.

12. KEY WORDS/DESCRIPTORS (Use words or phrases that will assist researchers in locating the report.)

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TABLE 1
SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-1	Reactor Pressure Vessel	B-A	B1.30	Shell-to-Flange Weld: 11201-V6-001-W03	Volumetric	None (volumetric examination to maximum extent practical)	Withdrawn by 10/2/91 letter
RR-2	Reactor Pressure Vessel	B-A	B1.11	Circumferential Shell Weld: 11201-V6-001-W06	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-3	Reactor Pressure Vessel	B-A	B1.12	Longitudinal Shell Welds: 11201-V6-001-W18, W19, and W20	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-4	Reactor Pressure Vessel	B-A	B1.22	Meridional Head Welds: 11201-V6-001-W21, W22, W23 and W24	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-5	Reactor Pressure Vessel	B-A	B1.21	Circumferential Head Weld: 11201-V6-001-W07	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)

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RR-6	Reactor Pressure Vessel	B-G-1	B6.40	Flange Ligament Areas	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-7	Reactor Pressure Vessel	B-A	B1.21	Circumferential Closure Head Weld: 11201-V6-001-W01	Volumetric	None (volumetric examination to maximum extent practical and 100% surface if required)	Granted Note (1)
			B1.40	Closure Head-to-Flange Weld: 11201-V6-001-W02	Volumetric and Surface		
RR-8	Class 1 Piping Welds	B-J	B9.11	RPV Safe-end Welds: 11201-009-9 11201-010-7 11201-011-8 11201-012-9	Volumetric and Surface	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)
RR-9	Reactor Pressure Vessel	B-G-1	B6.30	RPV Closure Studs	Volumetric and Surface (when removed)	Ultrasonic shear-wave examination per Code Case N-307	Relief not required
RR-10	Pressurizer	B-H	B8.20	Support Skirt Weld: 11201-V6-002-W35	Surface	None (surface examination to maximum extent practical)	Granted Note (1)

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RR-11	Reactor Pressure Vessel	F-B	F2.30	RPV Supports: 11201-V6-001-RS1, -RS2, -RS3, and -RS4	VT-3 Visual	None	Granted Note (1)
RR-12	Pressurizer	B-B	B2.11	Circumferential Shell-to-Head Welds: 11201-V6-002-W01, -W05	Volumetric	None (surface examination of nozzle-to-safe end welds and head-to-nozzle welds and volumetric examination to maximum extent practical)	Granted Note (1)
		B-D	B3.110	Head-to-Nozzle Welds: 11201-V6-002-W10, -W11, -W12, -W13, and -W14	Volumetric		
		B-F	B5.40	Nozzle-to-Safe End Welds: 11201-V6-002-W17, -W18, -W19, and -W20	Volumetric and Surface		
RR-13	Pressurizer			Ultrasonic calibration blocks for the Nozzle-to-Safe end welds			Withdrawn in 10/21/87 submittal
RR-14	Pressurizer	B-D	B3.110	Surge Nozzle-to-Vessel weld: 11201-V6-002-W16	Volumetric	Surface and Volumetric examination to maximum extent practical	Granted Note (1)
RR-15	Pressurizer	B-D	B3.120	Surge Nozzle inner radius section: 11201-V6-002-IR06	Volumetric	None	Granted Note (1)

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RR-16	Pressurizer	B-H	B8.20	Support Brackets: 11201-V6-002-W23 through -W30 (eight welds)	Surface	None	Granted Note (1)
RR-17	Steam Generator Class 1 Piping	B-J	B9.11	Nozzle-to-Elbow Welds: 11201-001-5 11201-002-5 11201-003-5 11201-004-6 11201-005-1 11201-006-1 11201-007-1 11201-008-1	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)
RR-18	Piping Welds (general)			All austenitic and dissimilar metal piping welds	Volumetric exams per Section V, Article 5	Volumetric exams per Section XI, Appendix III	Granted Note (2)
RR-19	Steam Generator	B-B	B2.40	Channel Head-to-Tube Sheet Welds: 11201-B6-001-W08 11201-B6-002-W08 11201-B6-003-W08 11201-B6-004-W08	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-20	Class 1 Piping	B-J	B9.11	Class 1 Piping Welds: 11201-049-3 11201-050-11	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)

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RR-21	Class 1 Piping	B-J	B9.31	Branch Connection Piping Welds: 11201-001-2 11201-002-2 11201-003-2 11201-004-2 11201-004-3 11201-009-4 11201-009-6 11201-010-4 11201-011-5 11201-012-4 11201-012-6	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)
RR-22	Class 1 Piping			Pressure Retaining Cast Stainless Steel (Grade SA 351-CF8A) Welds in the Reactor Coolant System	Surface and Volumetric	100% surface examination and a refracted longitudinal wave ultrasonic examination	Granted Note (1)
RR-23	Class 1 Piping			Ultrasonic Calibration Block for Reactor Coolant System Pressure Retaining Cast Stainless Steel (Grade SA 351-CF8A) Welds ranging in size from 27.5 to 31-inch ID and wall thickness from 2.32 to 2.62 inches	Material of same diameter and wall thickness	Use 29-inch calibration block for 27.5 through 31-inch piping	Granted Note (1)
RR-24	Class 1 Piping	B-J	B9.11	RC Pump Nozzle-to-Elbow/Pipe Welds: 11201-005-8 11201-006-8 11201-007-8 11201-008-8 11201-009-1 11201-010-1 11201-011-1 11201-012-1	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Except welds 11201-005-8 & 11201-009-1 which have been withdrawn by 10/2/91 letter

TABLE 1

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RR-25	Class 1 Piping			Ultrasonic Calibration Block for RC Pump Nozzle-to-Pipe Welds: 11201-009-1 11201-010-1 11201-011-1 11201-012-1	Volumetric	Volumetric examination will be performed using existing calibration block without weld overlay	Granted Note (1)
RR-26	Class 1 Piping	B-J	B9.11	Welds: 11204-124-1 11204-124-7 11204-124-8 11204-124-11 11204-124-12 11204-124-15 11204-124-16 11204-125-1 11204-125-7 11204-125-8 11204-125-15 11204-125-16 11204-126-1 11204-126-7 11204-126-8 11204-126-15 11204-126-16 11204-127-1 11204-127-7 11204-127-8 11204-127-19 11204-127-20	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)
	Class 2 Piping	C-F	C5.21	Welds: 11204-120-6 11204-121-6 11204-122-6 11204-123-6			

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RR-27	Class 1 Pumps and Valves	B-L-2 B-M-2	B12.20 B12.50	Internal Surfaces of Class 1 Pumps and Valves as applicable	VT-3 Visual	None (VT-3 exam if disassembled for maintenance)	Granted Note (1)
RR-28	Steam Generator	C-B	C2.22	Outlet Nozzle inside radius section: 11201-B6-001-IR03	Volumetric	None	Granted Note (1)
RR-29	Steam Generators	C-A	C1.10	Shell Circumferential Weld: 11201-B6-003-W05	Volumetric	None (volumetric examination to maximum extent practical and 100% surface examination of C-B welds)	Granted Note (1)
			C1.30	Tubesheet-to-Shell Weld: 11201-B6-004-W07			
		C-B	C2.21	Nozzle-to-Shell Welds: 11201-B6-001-W18 11201-B6-002-W19 11201-B6-004-W26	Surface and Volumetric		

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RR-30	Class 2 Vessels	C-A	C1.10	Letdown Reheat HX Weld: 11208-E6-007-W03 Pulsation Dampener Weld: 11208-V4-G02-W01	Volumetric	None (all Code-required examinations will be performed to the maximum extent practical)	Granted Note (1)
			C1.20	Excess Letdown HX Weld: 11208-E6-002-W01 Letdown HX Weld: 11208-E6-003-W03 Boron Inj. Tank Welds: 11204-V6-001-W02 11204-V6-001-W03			
			C1.30	Regenerative HX Welds: 11208-E6-001-W01 11208-E6-001-W02 11208-E6-001-W09 11208-E6-001-W10			
		C-B	C2.21	Boron Inj. Tank Nozzle: 11204-V6-001-W01 11204-V6-001-W04	Surface and Volumetric		
		C-G	C6.10	Safety Inj. Pump Casing Weld: 11204-P6-003-W02	Surface		
RR-31	Class 2 Thin-wall Vessel Welds	C-A		11205-E6-002 (RHR HX) 11208-E6-003 (LHX) 11208-E6-007 (LRHX) 11208-E6-002 (ELHX) 11208-E6-001 (RIHX) 11208-V4-001 (SD)	Volumetric exams per Section V, Article 5	Volumetric exams per Section XI, Appendix III	Granted Note (2)

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RR-32	RHR Heat Exchanger Nozzles	C-B	C2.22	Inside Radius Sections: 11205-EG-002-IR01 11205-E6-002-IR02 11205-E6-002-W09,W10,W11 and W12	Volumetric & Surface	None	Granted Note (1)
RR-33	SI Pump	C-D		Casing studs			Withdrawn in 10/21/87 submittal
RR-34	Class 2 Piping	C-F	C5.21	Welds: 11301-001-5 11301-001-6 11301-001-8 11301-002-5 11301-002-6 11301-002-8 11301-002-9 11301-002-10 11301-003-5 11301-003-6 11301-003-8 11301-004-5 11301-004-6 11301-004-8 11301-108-14	Surface and Volumetric	None (100% surface examination and volumetric examination to maximum extent practical)	Granted Note (1)
RR-35	Class 2 Piping in Engineered Safety Systems	C-F		Augmented Examinations of thin-walled and small-diameter piping welds in ES systems	Surface and Volumetric (7.5% of the welds in each ES system)	100% Surface and Axial scan using 60-degree 1/4-inch dia. transducer with modified wedge	Granted -provided proper calibration blocks are obtained Note (1)

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RR-36	Class 2 Piping in Engineered Safety Systems	C-F		Augmented Examinations of the following thin-walled piping welds (greater than 4-inch nominal pipe size) in the ES systems (89 total):	Surface and Volumetric (7.5% of the welds in each ES system)	None (100% surface examination and volumetric examination to maximum extent practical)	Granted -provided proper calibration blocks are obtained Note (1)
			11202-001-1	11202-001-17	11202-140-9	11202-140-27	11202-141-19
			11202-188-4	11202-188-5	11202-189-1	11202-189-2	11202-189-3
			11202-189-7	11202-192-16	11202-196-7	11202-197-3	11202-202-18
			11202-202-22	11202-204-1	11202-204-15	11202-205-1	11202-205-14
			11202-207-14	11202-209-4	11202-209-5	11202-211-1	11202-211-3
			11202-211-17	11202-212-15	11202-212-19	11202-212-36	11202-216-41
			11202-216-42	11202-218-1	11202-218-20	11202-220-2	11202-220-12
			11202-225-50	11202-229-12	11202-229-13	11206-003-1	11206-004-4
			11206-004-17	11206-005-1	11206-005-55	11206-006-1	11206-006-51
			11206-007-1	11206-007-10	11206-008-1	11206-008-10	11206-008-16
			11204-001-9	11204-006-1	11204-006-64	11204-006-72	11204-007-17
			11204-008-33	11204-011-6	11204-012-2	11204-038-1	11204-038-8
			11204-123-5	11204-177-13	11204-192-1	11205-003-62	11205-003-64
			11205-004-54	11205-005-1	11205-005-32	11205-006-1	11205-006-2
			11205-006-3	11205-006-20	11205-006-27	11205-007-1	11205-007-23
			11205-007-77	11205-008-1	11205-009-1	11205-009-24	11205-039-3
			11208-137-1	11208-137-8	11208-137-15	11208-139-4	11208-139-8
			11208-139-30	11208-139-35	11208-411-2	11208-411-51	

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<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-37	Class 2 Piping in Engineered Safety Systems	C-F		Augmented Examinations of the following small-diameter piping welds (46 total) in the ES systems:	Surface and Volumetric (7.5% of the welds in each ES system)	None (100% surface examination and volumetric examination to maximum extent practical)	Granted -provided proper calibration blocks are obtained Note (1)
			11204-014-13	11204-014-20	11204-014-26		
			11204-014-54	11204-015-13	11204-028-1		
			11204-037-56	11204-063-54	11204-169-1		
			11204-169-45	11204-197-8	11208-003-2		
			11208-003-4	11208-003-6	11208-003-17		
			11208-003-21	11208-003-30	11208-003-33		
			11208-003-49	11208-003-57	11208-022-2		
			11208-022-5	11208-022-6	11208-022-7		
			11208-022-22	11208-023-36	11208-023-43		
			11208-023-55	11208-023-56	11208-023-59		
			11208-023-76	11208-044-1	11208-044-2		
			11208-044-4	11208-046-2	11208-046-3		
			11208-046-4	11208-099-4	11208-101-6		
			11208-123-55	11208-146-5	11208-146-17		
			11208-147-2	11208-147-3	11208-147-5		
			11208-147-8				

TABLE 1
SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-38	Class MC Components			As outlined in IWE-2500-1	Exams outlined in Table IWE-2500-1	None	Relief not required
RR-39	Reactor Pressure Vessel	B-A	B1.11 B1.12 B1.21 B1.22 B1.30	Near surface gaging prevents examination of .350-inch or less of the following welds: 11201-V6-001-W03, -W04, -W06, -W07, -W12, -W13, -W14, -W21, -W22, -W23, and -W24	Volumetric	None (volumetric examination to maximum extent practical)	Granted Note (1)
RR-40	Reactor Pressure Vessel			Ultrasonic Calibration Blocks: ISI-D-400A, -401A, -402A, and -403A	2-inch notch lengths	1 3/4-inch notch lengths	Granted Note (2)

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SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-41	Reactor Coolant System Piping			Basic UT Calibration Blocks for RPV Nozzle-to-Safe End Welds: 11201-V6-001-W33, -W34, -W35, -W36, -W37, -W38, -W39, and -W40	Surface and Volumetric	100% surface examination and mechanized UT examination from I.D. using composite calibration block in conjunction with cast piping calibration block	Relief not required
RR 42	Steam Generator Nozzles	B-D	B3.140	Inside Radius Sections: 11201-B6-001-IR-01, -02 11201-B6-002-IR-01, -02 11201-B6-003-IR-01, -02 11201-B6-004-IR-01, -02	Volumetric	None (inside radii will be visually examined to maximum extent practical)	Granted Note (1)
RR-43	Snubbers	IWF		Hydraulic and mechanical type snubbers	VT-3 VT-4 Visual	Perform subject testing of snubbers per the Plant Technical Specifications	Granted Note (2)

TABLE 1

SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-44	Class 2 Components	C-H		Class 2 components which cannot be isolated from Class 1 components	Hydrostatic test per IWA-5000 and IWC-5000	Hydrostatic test at Class 1 test pressures per IWA-5000 and IWB-5000	Granted Note (1)

<u>Line No.</u>	<u>Check Valve(s)</u>	<u>Shutoff Valves</u>
1208-023	1208-U4-006	1208-U4-005
1208-042	1208-U4-359	1208-U4-356
1208-044	1208-U4-360	1208-U4-357
1208-046	1208-U4-361	1208-U4-358
1208-488	1208-U6-037	HV-8147
1208-008	1208-U6-035	HV-8146 & 1208-U4-498
1204-063	1204-U6-013	HV-8801A&B
1204-082	1204-U6-013	HV-8843
1204-058	1204-U6-013	HV-1204-U4-007
1204-016	1204-U4-120	HV-8802A & HV-8881
1204-197	1204-U4-121	HV-8802A & HV-8881
1204-020	1204-U6-128	HV-8840 & HV-8825
1204-201	1204-U6-129	HV-8840 & HV-8825
1204-017	1204-U4-123	HV-8802B & HV-8824
1204-199	1204-U4-122	HV-8802B & HV-8824
1204-029	1204-U4-146	HV-8835 & HV-8823
1204-030	1204-U4-145	HV-8835 & HV-8823
1204-031	1204-U4-144	HV-8835 & HV-8823
1204-032	1204-U4-143	HV-8835 & HV-8823
1204-039	1204-U6-147	HV-8809A
	1204-U6-148	HV-8890A
1204-041	1204-U6-149	HV-8809B
	1204-U6-150	HV-8890B

TABLE 1
SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-45	Class 2 Components	C-H	C7.30 C7.40 C7.70 C7.80	Class 2 containment penetrations which are not required for operation to support engineered safety systems	Hydrostatic and System Pressure Tests	Pressure tests as required by Appendix J of 10 CFR 50	Withdrawn by 4/26/90 letter
RR-46	Class 2 Components	C-H	C7.10 C7.30 C7.50 C7.70	System pressure test of Class 2 components	VT-2 Visual during system functional or system inservice testing	VT-2 performed at pressures which meet or exceed the requirements of IWC-5221 during conditions other than system functional or system inservice testing	Granted-provided hold time, test pressures, and frequency of exam meet or exceed Code requirements Note (2)
RR-47	Systems containing air during system operation	C-H D-A D-B	C7.10 C7.30 C7.70 D1.10 D2.10	System functional or system inservice testing of the containment hydrogen monitor and radiation monitor systems	VT-2 Visual during system functional or system inservice testing	None	Withdrawn by 4/26/90 letter

TABLE 1
SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-48	Class 3 Systems in support of reactor shutdown	D-A	DI.10	System inservice test for the following CVC lines: Line 1208-242 from 1208-P6-006 to 1208-F6-003 Line 1208-243 from 1208-P6-007 to line 1208-242 Line 1208-213 from line 1208-242 to 1208-T4-003 & valve 273 Line 1208-131 from 1208-F6-003 to valve HV-8104 & line 1208-134 Line 1208-134 from line 1208-131 to valve 188, line 1208-118 & valve HV-8439 Line 1208-118 from line 1208-134 to valve 174 Line 1208-116 from line 1208-134 to valves FV-0111B & FV-0110B Line 1208-127 from line 1208-116 to valve 171 Line 1208-450 from line 1208-131 to line 1208-213	VT-2 Visual during system inservice test	VT-2 Visual during system functional test	Withdrawn by 4/26/90 letter
RR-49	Class 3 Vertical Pit Pumps	D-A	DI.10	Nuclear Service Cooling Water Pumps and Transfer Pumps: 1-1202-P4-001, -002, -003, -004, -005, -006, -007, and -008	Hydrostatic test and VT-2 Visual examination during system inservice test	None (VT-2 Visual examination will be performed on portions of pumps not submerged in the NSCW tower basin)	Granted Note (1)

TABLE 1

SUMMARY OF RELIEF REQUESTS

<u>Relief Request Number</u>	<u>System or Component</u>	<u>Exam. Cat.</u>	<u>Item No.</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
RR-50	Class 3 Pressure Retaining Systems	D-A	D1.10	Pressure tests of Class 3 pressure retaining systems	VT-2 Visual exam during system inservice test	VT-2 performed at pressures which meet or exceed the Code requirements during conditions other than system functional or system inservice tests	Granted -provided hold times and frequency of inspections as well as pressures meet or exceed Code requirements Note (2)
		D-C	D3.10				
		D-B	D2.10	Pressure tests of Class 3 pressure retaining systems	VT-2 Visual exam during system functional tests		
RR-51	Class 3 Pressure Retaining Systems	D-B	D2.10	Functional test of the following Class 3 lines: Line 1217-267 from valve 084 to line 1217-071 Line 1217-268 from valve 085 to line 1217-072 Line 1217-266 from valve 086 to line 1217-073 Line 1217-265 from valve 087 to line 1217-150 Line 1217-073 from line 1217-266 to line 1217-150 Line 1217-071 from line 1217-267 to line 1217-150 Line 1217-072 from line 1217-268 to line 1217-150 Line 1217-150 from valve HV-2041 to lines 1217-071, 1217-022, 1217-073, & 1217-265	VT-2 Visual exam per IWD-5222	VT-2 Visual exam per IWD-5221	Withdrawn by 10/2/91 letter

TABLE 1
SUMMARY OF RELIEF REQUESTS

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