



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE FIRST 10-YEAR INSERVICE TESTING PROGRAM
REQUESTS FOR RELIEF
ENTERGY OPERATIONS, INC.
ARKANSAS NUCLEAR ONE, UNIT 2
DOCKET NUMBER 50-368

1.0 INTRODUCTION

Technical Specification 4.0.5 for Arkansas Nuclear One, Unit 2, states in part that the inservice inspection and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date twelve months prior to the date of issuance of the operating license, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Arkansas Nuclear One, Unit 2, first 10-year inservice inspection (ISI) interval is the 1974 Edition through Summer 1975 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission

in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(c)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, 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.

In a letter dated August 31, 1989, the licensee submitted a table containing 61 welds for which relief from the Code requirements was requested. To obtain the information required to evaluate the request, a request for additional information (RAI) dated September 10, 1991, was issued. In response to the NRC's RAI, and to a conference call held on December 10, 1991, the licensee provided a second table in a submittal dated April 30, 1992. This submittal included estimates of the Code-required examinations that were performed and withdrew Weld Numbers 01-001, 01-002, 01-003, 01-004, 01-005, 01-006, 01-007, 01-L-043, 24-049, 56-007, 57-009, 58-011, 59-035, 60-027, and 64-005. Issues not resolved by the April 30, 1992, submittal were discussed with the licensee during a conference call held on June 3, 1992. Additional information regarding the April 30, 1992, submittal was provided in a submittal dated August 20, 1992. The ensuing evaluation is based on all of the information received from the licensee.

2.0 EVALUATION

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of requests for relief as follows:

A. Request for Relief No. B-A/B1.1, Examination Category B-A, Item B1.1, Reactor Pressure Vessel (RPV) Beltline Welds

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-A, Item B1.1, require a volumetric examination of 5% of the length of RPV circumferential beltline welds and 10% of the length of RPV longitudinal beltline welds.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of circumferential Weld 01-012, and longitudinal Welds 01-009 and 01-013 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that the subject welds are obstructed from both sides of the weld due to the surveillance capsule holder. As noted in the remarks section of the licensee's April 30, 1992, submittal, examination of 100% of the weld length was attempted. It is estimated that 51-75% of the longitudinal weld volume and 76-100% of the circumferential weld was examined. These estimates are based on the entire weld length, not the Code-required volume.

Licensee's Proposed Alternative Examination: None. The licensee states that the subject welds were examined to the maximum extent practical.

Staff Evaluation: The Code requires that at least 5% of circumferential beltline welds and 10% of longitudinal beltline welds be volumetrically examined. As stated in the licensee's August 20, 1992, submittal, volumetric examination of the entire length of the welds was attempted, and successfully completed on at least 51% of the longitudinal welds and 76% of the circumferential weld.

Based on these estimates of the volumetric examination coverage, it is concluded that the Code requirement has been met and relief is not required for the subject welds.

B. Request for Relief No. B-B/B1.2, Examination Category B-B, Item B1.2, RPV Circumferential Shell Welds

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-B, Item B1.2 requires a volumetric examination of 5% of RPV circumferential shell welds and 10% of longitudinal shell welds.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of circumferential shell Welds 01-008 and 01-016 and longitudinal shell Welds 01-017, 01-018, and 01-019 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states in the August 31, 1989, and April 30, 1992, submittals that examination of Weld 01-008 was limited from both sides due to the flow baffle assembly and the vessel design. Examination of the remaining four welds was obstructed by nozzles in the areas of interest.

Additional information provided in the August 20, 1992, submittal states that for circumferential Weld 01-008, the "scanning limitation" exists 360° around the vessel circumference, and that the section of weld scanned was from 102° to 131.1°. For Welds 01-016, 01-017, 01-018, and 01-019, the licensee states that the proximity of the nozzles prohibited full coverage of the required examination volume and that notes on the data sheets state that "areas selected were to minimize obstructions." Coverage is estimated as 76-100% of the Code-required volume for all of the welds listed above.

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires a volumetric examination of 5% of RPV circumferential welds and 10% of the RPV longitudinal welds. However, the licensee states that the subject welds were not examined to the extent required by the Code due to physical obstructions that restricted access to the required examination volume.

Although the Code-required volumetric examination may have been impractical to perform for certain sections of the RPV welds (e.g., between lugs from 102° to 131.1°), the 74S75 Code only required a small percentage of each weld to be examined and the examinations should have been extended to include other accessible portions. Other plants have done this to meet the Code requirements.

While the staff does not agree with the licensee's determination that the Code-required examinations were impractical to perform, requiring the licensee to go back and examine another 2 1/2% of the weld volume that was not inspected for a total of 5% required by the Code does represent an impracticality. Performance of the examination at this time would require removal of the RPV internals and excessive radiation exposure for plant personnel. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The staff concludes that the limited examinations that were performed on the subject shell welds (76-100%) represent a significant portion of the Code-required examination. In addition, the licensee exceeded the Code requirements for the beltline welds where at least 51% of the weld length was completed (see Section A of this document). Thus, the limited volumetric examination of the subject shell welds and expanded examination of the beltline region welds provide reasonable assurance of the continued structural integrity of the RPV.

Considering the impracticality as stated above and the burden on the licensee if the requirements were imposed, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i).

C. Request for Relief No. B-B/03.1, Examination Category B-B, Item B3.1, Steam Generator Shell Welds

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-B, Item B3.1 requires volumetric examination of 10% of the length of each longitudinal shell weld and meridional head weld and 5% of the length of each circumferential shell and head weld.

Licensee's Code Relief Request: Relief is requested from volumetric examination of the SG Stay Cylinder Base-to-Lower Head Weld 03-002, and SG Peel Segment Welds 03-003, 03-004, and 03-005 to the extent required by the Code.

Licensee's Basis for Requesting Relief: Examination of Weld 03-002 was limited to only one side of the weld due to the blend radius of the Stay Cylinder Base. This condition exists 360° around the subject weld. The licensee also states that the scan path was limited to 12 inches between Welds 03-003 and 03-004. The estimated examination coverage is 26-50% of the Code required volume for this weld.

Examinations of Peel Segment Welds 03-003, 03-004 and 03-005 were limited to one side due to nozzles that obstructed access to the welds. The estimated examination coverage is 51-75% of the Code-required volume, or 5.1-7.5% of the entire weld length. For all welds, 100% of the circumferential scans were completed.

Licensee's Proposed Alternative Examination: None. The licensee states that the Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires that 10% of the length of each steam generator peel segment weld and 5% of the length of the lower head weld be volumetrically examined. The licensee states that only 1.3-2.5% of circumferential Weld 03-002 was examined due to the blend radius, and 5.1-7.5% of the peel segment welds were examined due to nozzle or geometrical obstructions. However, review of Drawing ISI-203 shows that the minimum Code-required volume can be examined; consequently, relief from the Code requirements has not been justified. It appears that volumetric examination was only attempted on certain segments of the weld (e.g. the short segment of Weld 03-002 between Welds 03-003 and 03-004). Considering the small percentage of weld length required for examination, the staff feels that the examination should have been extended to include other, accessible portions of the same weld, even if only a one-sided examination was possible.

Considering the small percentage of the subject welds that is required to receive volumetric examination, and the lack of technical justification provided, relief is denied.

D. Request for Relief No. B-C/B1.3, Examination Category B-C, Item B1.3, Volumetric Examination of RPV Closure Head Flange to Peel Segment Torus Weld

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-C, Item B1.3, requires a 100% volumetric examination of the RPV circumferential head-to-flange weld.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of RPV Weld 02-001 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The subject weld is limited to 51-75% of the Code-required weld volume due to lifting lugs and the RPV head configuration that obstruct access.

Licensee's Proposed Alternative Examination: None. The volumetric examinations have been performed to the maximum extent practical.

Staff Evaluation: The Code requires a 100% volumetric examination of the subject weld. However, geometrical limitations of the design and obstruction by the lifting lugs prevent the required examination from being performed to the extent required by the Code. Therefore, the Code-required volumetric examination is impractical to perform. In order to meet the Code requirements, the RPV closure head would require design modification. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination. A significant portion of the weld was examined, therefore, reasonable assurance of the continued structural integrity has been provided.

Based on the above evaluation, and pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

E. Request for Relief No. B-D/B1.4, Examination Category B-D, Item B1.4, RPV Nozzle-to-Shell Welds

Code Requirement: Table IWB-2500 and Table IWB-2600, Examination Category B-D, Item B1.4 requires a 100% volumetric examination of RPV nozzle-to-shell welds as defined by IWB-2500D.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examinations to the extent required by the Code for Inlet Nozzle-to-Vessel Welds 01-022, 01-023, 01-025, and 01-026 and Outlet Nozzle-to-Vessel Welds 01-021 and 01-024.

Licensee's Basis for Requesting Relief: The licensee states that 75-100% of the inlet nozzle-to-shell welds could be examined from the bore side, and that examination of these welds from the shell side was not limited. For the outlet nozzle-to-shell welds, 75-100% could be examined from the bore side and 25-50% of the welds could be examined from the shell side. Examination of the outlet nozzles was obstructed by the integral extension piece. Examination of both inlet and outlet nozzles was limited by nozzle bore configuration and loss of contact due to rough cladding surface.

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires that the RPV nozzle-to-shell welds receive a 100% volumetric examination. However, examination of the

subject welds was restricted by physical limitations that prevented access to portions of the Code-required volume. Examination of both the inlet and outlet nozzle-to-shell welds is limited from the bore side due to nozzle bore geometry, which restricts access to the Code-required volume. Examination of the outlet nozzle-to-shell welds is also limited by the integral extension piece, which further restricts access to the those welds. Thus, the volumetric examinations are impractical to perform to the extent required by the Code. In order to perform the examinations to the extent required by the Code, the RPV nozzles would have to be redesigned and replaced. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination. A significant portion of the Code-required examination was completed, therefore reasonable assurance of the continued structural integrity of the RPV was provided.

Based on the above evaluation and pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

F. Request for Relief No. B-D/B2.2, Examination Category B-D, Item B2.2, Volumetric Examination of the Pressurizer Nozzle-to-Vessel Welds and Inner Radius Sections

Code Requirement: Table IWB-2500 and Table IWB-2600, Examination Category B-D, Item B2.2, require a 100% volumetric examination of the pressurizer nozzle-to-vessel welds and inner radius sections as defined by IWB-2500D.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examinations of Nozzle-to-Vessel Welds 05-009 and 05-010, and Nozzle Inner Radius Sections 05-120, 05-121, and 05-022 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that examinations of the subject nozzle-to-vessel welds are limited to 75-100% of the required volume due to the configuration of the nozzle (05-010), and a heater penetration in the area (05-009). The subject inner radius sections are limited to 75-100% of the required volume due to heater bundle penetrations (05-120), nozzle configuration (05-121), and insulation framework obstructions (05-122).

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires 100% volumetric examination of the subject welds and inside radius sections. However, the required examination areas were restricted by the physical limitations described above, thus making the volumetric examinations impractical to perform to the extent required by the Code. In order to meet the Code requirement,

the subject pressurizer nozzies would have to be redesigned and replaced. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination. A significant portion of the Code-required examination was completed, thus, reasonable assurance of the continued structural integrity of the pressurizer nozzies has been provided.

Based on the above evaluation and pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

- G. Request for Relief No. B-F/B4.1, Examination Category B-F, Item B4.1, Volumetric Examination of Reactor Coolant Safe End-to-Elbow Weld
Code Requirement: Table IWB-2500 and IWB-2600, Examination Category B-F, Item B4.1 requires 100% volumetric and surface examinations of all Class 1 piping dissimilar metal welds.

Licensee's Code Relief Request: The licensee's submittals do not state what examination they are requesting relief from. Therefore, it is assumed that relief is requested from performing both the surface and volumetric examinations of Weld 08-014 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that the subject weld is limited to 75-100% coverage due to 4 insulation support brackets (90° apart) that obstruct access to the weld. Access is restricted on both sides of the weld.

Licensee's Proposed Alternative Examination: None. The Code-required examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires that Class 1 pressure retaining dissimilar metal welds receive volumetric and surface examinations. However, the subject weld is obstructed by insulation support brackets that restrict access to the weld in four places. Therefore, the surface and volumetric examinations are impractical to perform to the extent required by the Code. In order to meet the Code requirements, the insulation supports would have to be modified to allow access to the weld for examination. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination. A significant portion of the weld was examined, thus reasonable assurance of the continued structural integrity of the weld has been provided.

Based on the above evaluation and pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

- H. Request for Relief No. B-J/B4.5, Examination Category B-J, Item B4.5, Volumetric Examination of Class 1 Circumferential Welds

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-J, Item B4.5 requires a 100% volumetric examination of 25% of the Class 1 circumferential pressure retaining welds.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examinations of Reactor Coolant Safe End-to-Pump Welds 08-015 and 09-009 and Shutdown Cooling Tee-to-Pipe Circumferential Weld 25-017 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The subject safe end-to-pump welds are limited by 4 insulation support brackets 90° apart that obstruct access to the weld. The licensee states that 51-75% of the welds have been examined. The subject shutdown cooling weld is limited by the "tee" configuration and an obstruction created by a support hanger pipe bracket that limits access to the weld. The licensee states that 0-25% of this weld has been examined.

Licensee's Proposed Alternative Examination: None. The licensee states that the Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires a 100% volumetric examination of 25% of Class 1 circumferential piping welds. The licensee states that Reactor Coolant Pump-to-Safe End Welds 08-015 and 09-009 are partially obstructed by insulation support brackets that limit the volumetric examination coverage. These brackets make the volumetric examination impractical to perform to the extent required by the Code. In order to meet the Code requirement, the support brackets and reactor coolant piping would require design modifications to allow the volumetric examination. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination. A significant portion of the required weld volume (51-75%) has been examined, therefore, reasonable assurance of the continued structural integrity has been provided.

The licensee states that complete examination of Weld 25-017 is not possible due to the reducer-to-tee configuration and a hanger support bracket that obstructs access for the axial scans. No limitation existed for the circumferential scans. The Code requires that the weld volume be examined in four directions, two axial and two circumferential. Considering that the licensee completed the circumferential scans, but estimated coverage to be only 0-25%, it appears that coverage should have been higher than estimated. In addition, based on the information provided, it is not clear why a partial examination in the axial direction could not be performed. Although it appears that the subject weld is difficult to examine, the limitations are not apparent without drawings and a more detailed description. Since the licensee states that only a small portion of

Weld 25-017 was capable of being examined, a more accessible weld should have been considered for examination.

Based on the evaluation above and pursuant to 10 CFR 50.55a(g)(6)(i), it is concluded that relief is granted for Welds 08-015 and 09-009. For Weld 25-017, it is concluded that the information provided is unclear and insufficient to support the determination that the Code requirement is impractical, therefore relief is denied.

I. Request for Relief No. B-J/B4.6, Examination Category B-J, Item B4.6, Reactor Coolant Branch Connection Welds

Code Requirement: Tables IWB-2500 and IWB-2600, Examination Category B-J, Item B4.6 requires a 100% volumetric examination of 25% of Class 1 branch connection welds exceeding 6 inches in diameter.

Licensee's Code Relief Request: Relief is requested from performing volumetric examinations of Reactor Coolant Branch Connection Weld 15-010 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that only 51-75% of the subject branch connection weld could be examined due to a permanent cable whip restraint that obstructs access to the weld.

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

Staff Evaluation: The Code requires a 100% volumetric examination for branch connection welds selected for examination. However, the subject weld is obstructed by a cable whip restraint that restricts access to the examination area. Therefore, the Code requirement is impractical. In order to meet the Code requirement, design modifications would be required to permit access to the weld. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The licensee states that 51-75% of the subject weld was examined, therefore, a significant portion of the weld was examined. In addition, this weld is just one weld in a 25% sample of branch connection welds. Compared to the total weld volume examined under Item B4.6, the volume of Weld 15-010 not examined is relatively small. Thus, the partial examination of Weld 15-010 and the examination of other similar welds provide reasonable assurance of the continued structural integrity of the Class 1 branch connection welds.

Based on the above evaluation and pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

J. Request for Relief No. C-A/C1.1, Examination Category C-A, Item C1.1, Steam Generator (SG) Circumferential Shell Welds

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-A, Item C1.1, requires a volumetric examination of 20% of each vessel circumferential weld, uniformly distributed among three areas around the vessel circumference.

Licensee's Code Relief Request: Relief is requested from performing volumetric examination of Welds 03-030, 03-031, 03-032, and 03-033 on SG#1, and Welds 04-030, 04-031, 04-032, and 04-033 on SG#2 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states in the August 31, 1989, and April 30, 1992, submittals, that access to the SG#1 welds was obstructed by insulation support brackets that limited access from one side of the weld. For SG#2, access to Weld 04-033 was limited by insulation brackets at 80° and 100°, 2 inches from the weld edge. The remaining SG#2 welds were limited by insulation brackets on one side and steam generator geometry on the other. The August 20, 1992, submittal states that access to Welds 03-030/04-030, 03-031/04-031, and 03-032/04-032 was obstructed by an insulation support ring that exists 360° around the vessel circumference and insulation supports. On those welds, a 100% circumferential scan was performed. The licensee estimates that 75-100% of the required weld volume (15-20% of the weld length) was examined for each weld.

Licensee's Proposed Alternative Examination: None. The licensee states that the Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires a volumetric examination for 20% of the length of each steam generator circumferential butt weld, distributed evenly in three areas. However, the licensee states that access to the subject welds was limited and only 15-20% of each weld was examined.

Paragraph IWC-2411(b) states: "The examinations required by IWC-2520 shall be divided among the number of components of the same size and geometry in each of the multiple streams of a system which performs the same (or redundant) functions, such that the total examinations completed over the system's service lifetime will be equivalent to having performed 100% of the required examinations in one of the multiple streams of the system."

The licensee states that examination of 15-20% of each of the subject welds was completed. Applying the multiple stream concept as allowed by paragraph IWC-2411(b), the required volumetric examinations can be distributed between the two steam generators. Consequently, only 10% of

the length of each circumferential shell weld (on both steam generators) must be volumetrically examined to meet the Code requirement. Since the licensee examined at least 15% of each weld, the intent of the Code has been met and relief is not required.

K. Request for Relief No. C-C/C1.3, Examination Category C-C, Item C1.3, Steam Generator Integrally Welded Supports

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-C, Item C1.3 requires a 100% surface examination of integrally welded support attachments to Class 2 vessels.

Licensee's Code Relief Request: Relief is requested from performing the surface examination of SG Snubber Lug Weld 03-041 to the extent required by the Code.

Licensee's Basis for Requesting Relief: Access to the subject integrally welded support is limited by an insulation bracket. The licensee states that 76-100% of the weld received the required surface examination.

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

Staff Evaluation: The surface examination cannot be performed to the extent required by the Code due to an insulation support bracket that obstructs access to the weld. This obstruction caused the surface examination of this weld to code requirements to be impractical. In order to meet the Code requirement, the insulation support would have to be redesigned and modified or replaced. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The licensee estimates that 76-100% of required surface examination was performed, thus a significant portion of the required examination was completed and reasonable assurance of the operational readiness of the lug has been provided. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

L. Request for Relief No. C-F/C2.1, Examination Category C-F, Item C2.1, Shutdown Cooling Circumferential Pipe Welds

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-F, Item C2.1, requires a 100% volumetric examination of circumferential butt welds in Class 2 pressure retaining piping that circulates reactor coolant.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of Shutdown Cooling Weld 50-015 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that only 76-100% of the subject weld could be examined due to a pipe support that obstructed access to the weld.

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

Staff Evaluation: The Code requires a 100% volumetric examination of the subject weld. However, access to the weld is restricted by an adjacent pipe support that limits examination coverage to 76-100%. Therefore, the volumetric examination is impractical to perform to the extent required by the Code. In order to complete the Code-required examination, the pipe support would have to be redesigned and modified or replaced. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The licensee estimates that 76-100% of required surface examination was performed, thus a significant portion of the required examination was completed. In addition, this weld is included in a larger sample of similar welds that did receive 100% volumetric examination. Compared to the total weld volume examined under this item number, the volume of Weld 50-015 not examined is relatively small. Considering that a significant sized representative sample was examined, reasonable assurance that no generic degradation has been provided. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

M. Request for Relief No. C-F/C2.2, Examination Category C-F, Item C2.2, Class 2 Longitudinal Weld Joints in Pipe Fittings

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-F, Item C2.2 requires a volumetric examination of 100% of all Class 2 longitudinal weld joints in pipe fittings.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of Shutdown Cooling Welds 58-003B and 53-021A, and Safety Injection Weld 55-029B to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee has provided the following information regarding the limitations on access for examination of the subject welds:

<u>Weld No.</u>	<u>Estimated Coverage</u>	<u>Limitation</u>
58-003B	76-100%	Component support
53-021A	76-100%	Identification tag
55-029B	51-75%	Nameplate welded across weld

The licensee states that obstructions listed above are permanent.

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

Staff Evaluation: The Code requires a 100% volumetric examination for longitudinal welds in pipe fittings. However, examination of the subject welds is limited by permanent obstructions that make the volumetric examinations impractical to perform to the extent required by the Code. In order to complete the required examinations, the permanent obstructions would have to be removed to allow access to the weld. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The estimated coverage provided by the licensee indicates that a significant portion of the required examinations have been performed. Consequently, reasonable assurance of the structural integrity of the subject welds has been provided by the limited examination. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted as requested.

N. Request for Relief No. C-G/C2.1, Examination Category C-G, Item C2.1, Feedwater Circumferential Piping Welds

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-G, Item C2.1 requires a 100% volumetric examination of 50% of the Class 2 welds in piping that circulates other than reactor coolant.

Licensee's Code Relief Request: Relief is requested from performing the volumetric examination of Feedwater Welds 17-024, 19-016, and 19-023 to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that examination of Weld 17-024 was limited due to a nozzle that restricted access to the weld. For Weld 19-016, access was limited by a valve on one side of the weld and a nozzle on the other side. Examination of Weld 19-023 was obstructed by an adjacent pipe that limited access to both sides of the weld. The licensee reports that 76-100% of the required weld volume was examined for each weld.

Licensee's Proposed Alternative Examination: None. The Code-required volumetric examinations were performed to the maximum extent practical.

Staff Evaluation: The Code requires a 100% volumetric examination of those welds selected for examination. However, the weld configuration of the subject welds and other physical obstructions preclude the volumetric examination to the extent required by the Code. Therefore, the Code requirement is impractical for the subject welds. In order to gain access to the subject welds, portions of the affected systems would have to be redesigned and modified or replaced. Imposition of the requirement on the licensee would cause a burden that would not be compensated by an increase in safety above that provided by the limited examination.

The estimated coverage provided by the licensee indicates that a significant portion of the required examinations have been performed. In addition, these welds are included in a much larger examination sample, and compared to the total weld volume examined under this item number, the volume not accessible for examination is relatively small.

Considering the extent of the partial examinations performed and the examination sample size of similar welds, it is concluded that reasonable assurance of the continued structural integrity has been provided, and that pursuant to 10 CFR 50.55a(g)(6)(i) relief is granted as requested.

0. Request for Relief No. C-E-1/C2.5, Examination Category C-E-1, Item C2.5, Shutdown Cooling Integrally Welded Supports

Code Requirement: Tables IWC-2520 and IWC-2600, Examination Category C-E-1, Item C2.5 requires a 100% surface examination of integrally welded supports to Class 2 piping.

Licensee's Code Relief Request: Relief is requested from performing the surface examination of Shutdown Cooling Spring Hanger Integral Attachment 59-049W to the extent required by the Code.

Licensee's Basis for Requesting Relief: The licensee states that surface examination of the subject integral attachment weld was obstructed by a support clamp that limited access.

Licensee's Proposed Alternative Examination: The support clamp obstruction will be removed and the weld reinspected.

Staff Evaluation: The Code requires a 100% surface examination for the subject integrally welded attachment. The licensee's proposed alternative is to remove the clamp and reinspect the weld. If the weld was reinspected, then relief is not required. However, in the August 20, 1992, submittal, the licensee stated that there was no evidence that the clamp was ever removed. Since the licensee proposed removal of the clamp

and has not provided any information justifying the impracticality for not doing so, relief is denied due to insufficient technical justification.

3.0 CONCLUSION

Paragraph 10 CFR 50.55a(g)(4) requires that components (including supports) that are classified as ASME Code Class 1, 2, and 3 meet the requirements, except design and access provisions and preservice requirements, set forth in applicable editions of ASME Section XI to the extent practical within limitations of design, geometry, and materials of construction of the components.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee determined that conformance with certain Code requirements is impractical for its facility and submitted supporting information. The staff has reviewed the licensee's submittal and has concluded that there are cases where relief can be granted as requested. Pursuant to 10 CFR 50.55a(g)(6)(i), the staff concludes that the requirements of the Code are impractical and relief may be granted for relief requests B-B/B1.2, B-C/B1.3, B-D/B1.4, B-D/B2.2, B-F/B4.1, B-J/B4.5 (in part), B-J/B4.6, C-C/C1.3, C-F/C2.1, C-F/C2.2, and C-G/C2.1. Such relief is authorized by law and will not endanger life, property, or the common defense and security, and is otherwise in the public interest. The relief has been granted giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

For requests for relief B-B/B3.1, B-J/B4.5 (in part), and C-E-1/C2.5, relief is denied. In these cases, the staff determined that there is inadequate information or insufficient technical justification supporting the determination that the Code requirements are impractical. The staff acknowledges that the first interval has passed. Therefore, these components are to be examined to meet Code requirements during the next outage of sufficient duration as a completion of the first interval inspection commitments. These examinations are to be in addition to those required for the second interval.

For requests for relief B-A/B1.1 and C-A/C1.1, the staff has determined that the intent of the Code has been met and that relief is not required.

Principal Contributor: D. Smith

Date: December 30, 1992