



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE

FIRST 10-YEAR INTERVAL INSERVICE INSPECTION

REQUEST FOR RELIEF

ENERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

Inservice inspection (ISI) 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 (ASME Code) and applicable addenda as required by Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Section 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 difficulty 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 the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant 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 and subsequent intervals 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) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for Waterford Steam Electric Station, Unit 3 (Waterford 3) first 10-year interval ISI is the 1980 Edition through Winter 1981 Addenda of Section XI of the ASME Code.

Enclosure 1

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By letter dated January 27, 1998, as supplemented by letter dated March 22, 1999, Entergy Operations, Inc. (EOI, or the licensee), submitted Request For Relief ISI-001, Revision 7, seeking relief from the ASME Code for Waterford 3.

2.0 EVALUATION

The staff, with technical assistance from its contractor, the Idaho National Engineering and Environmental Laboratory (INEEL), has evaluated the information provided by EOI in support of its proposed alternative contained in its request for relief for Waterford 3. Based on the additional information provided by EOI in its March 22, 1999, submittal, the staff has revised INEEL's Technical Letter Report.

Request for Relief RR-ISI-001, Part A: ASME Code Section XI, Table IWB-2500-1, Examination Category B-H, Item B-H, Item B8.10, Reactor Vessel Integrally Welded Attachments, Weld No. 01-074

The Code requires essentially 100 percent volumetric or surface examination of the length of the attachment weld at each attachment subject to examination. Code Case N-460 defines essentially 100 percent as greater than 90 percent coverage of the examination surface or volume. In accordance with 10 CFR 50.55a(g)(5)(iii), EOI requested relief from the Code's surface examination coverage requirement for reactor pressure vessel (RPV) attachment Weld No. 01-074. Examination of Weld No. 01-074 was limited to 70 percent as the attachment weld surface is blocked by 6-inch studs that hold down the spherical bearings and containment support plate. Therefore, it is impractical to obtain the Code-required coverage for the surface examination.

EOI has examined the weld indicated to the maximum extent practicable and has proposed no additional examinations. The completion of other RPV weld attachment examinations in conjunction with the 70 percent coverage of Weld No. 01-074 provide reasonable assurance that structural integrity will be maintained. Considering the extent of examinations performed and the impracticality of meeting Code requirements, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i). The relief granted is authorized by law and 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.

Request for Relief RR-ISI-001, Parts B, C, and D: ASME Code Section XI, Table IWB-2500-1, Examination Category B-J, Item B9.11, Class 1 Circumferential Piping Weld Nos. 16-012, 17-017, and 17-033

The Code requires essentially 100 percent volumetric or surface examination of circumferential welds in Class 1 pressure retaining piping greater than 4-inch nominal pipe size during each inspection interval. Code Case N-460 defines essentially 100 percent as greater than 90 percent coverage of the examination surface or volume. In accordance with 10 CFR 50.55a(g)(5)(iii), EOI requested relief from the Code's surface and/or volumetric examination coverage requirement for circumferential piping weld Nos. 16-012, 17-017, and 17-033. The examination of the welds were limited to 0, 75, and 75 percent, respectively.

Weld No. 16-012 is located inside a piping penetration and is completely inaccessible. The location of this weld prohibits surface and volumetric examination; therefore, meeting the Code examination requirements are impractical.

Weld No. 17-017 elbow to pipe configuration limits examination coverage to one side. This configuration makes portions of Weld No. 17-017 inaccessible; therefore, achieving the Code volumetric coverage requirement is impractical.

Weld No. 17-033 geometry of the taper on the reducer side of the weld prevents achieving the Code-required volumetric coverage. As a result, the Code-required examination coverage is impractical to complete for this weld.

To achieve the Code-required surface and volumetric coverage, design modifications to facilitate access for volumetric and surface examinations would be required. Imposition of the Code-required examinations would place a significant burden on EOI.

Considering that the Code requires 100 percent examination of similar Class 1 circumferential pressure piping welds, and EOI has examined the welds to the maximum extent practicable, any existing patterns of degradation would have been detected by the cumulative coverages achieved. Therefore, reasonable assurance of the structural integrity has been provided. The staff, having evaluated the impracticality of meeting the Code requirements and the reasonable assurance provided by the extent of examinations performed, grants relief to EOI pursuant to 10 CFR 50.55a(g)(6)(i). The relief granted is authorized by law and 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.

Request for Relief RR-ISI-001, Part F: ASME Code Section XI, Table IWB-2500-1, Examination Category B-J, Item B9.31, Class 1 Branch Pipe Connection Weld No. 15-010

The Code requires essentially 100 percent volumetric or surface examination of branch pipe connection welds in Class 1 pressure retaining piping greater than 4-inch nominal pipe size during each inspection interval. In accordance with 10 CFR 50.55a(g)(5)(iii), EOI requested relief from the Code's surface and volumetric examination coverage requirement for branch pipe connection Weld No. 15-010. The examination of the weld was limited to 75 percent.

The examination of the weld was limited to 75 percent as branch configuration would not allow for upstream axial scan. To achieve the Code-required volumetric coverage, design modifications to facilitate access for volumetric examination would be required. Imposition of the Code-required examinations would place a significant burden on EOI.

Considering that the Code requires 100 percent examination and EOI has examined the welds to the maximum extent practicable, any existing patterns of degradation would have been detected by the cumulative coverages achieved. Therefore, reasonable assurance of the structural integrity has been provided. The staff, having evaluated the impracticality of meeting the Code requirements and the reasonable assurance provided by the extent of examinations performed, grants relief to EOI pursuant to 10 CFR 50.55a(g)(6)(i). The relief granted is authorized by law and 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.

Request For Relief ISI-001, Part E: ASME Code Section XI, Table IWB-2500-1, Examination Category B-J, Item B9.11, Class 1 Circumferential Weld Nos. 19-008, 25-016, and 25-018

The Code requires essentially 100 percent volumetric or surface examination of circumferential welds in Class 1 pressure retaining piping greater than 4-inch nominal pipe size during each inspection interval. In accordance with 10 CFR 50.55a(g)(5)(iii), EOI requested relief from the Code's surface and volumetric examination coverage requirement for circumferential piping weld Nos. 19-008, 25-016, and 25-018. The examination of the welds were limited to 46, 70, and 49 percent, respectively.

Weld No. 19-008 is a stainless steel Safety Injection pipe to valve weld. The ultrasonic scans were limited due to the weld material and the valve and weld contours; therefore, meeting the Code-required examination requirements are impractical.

Weld No. 25-016 is a stainless steel Combined Pressurizer Spray pipe to valve weld. The ultrasonic examination was limited by the weld material and the valve and weld contours; therefore, achieving the Code-required volumetric coverage requirement is impractical.

Weld No. 25-018 is a stainless steel Combined Pressurizer Spray pipe to valve weld. The ultrasonic examination were limited by the weld material and the valve to weld contours. As a result, the Code-required examination coverage is impractical to complete for this weld.

To achieve the Code-required volumetric coverage, design modifications to facilitate access for volumetric examinations would be required. Imposition of the Code-required examinations would place a significant burden on EOI.

Considering the Code requires 100 percent volumetric examination and EOI has completed 100 percent surface examination and volumetric examination to the maximum extent practicable, any existing patterns of degradation would have been detected by the cumulative coverages achieved. Therefore, reasonable assurance of the structural integrity has been provided. The staff, having evaluated the impracticality of meeting the Code requirements and the reasonable assurance provided by the extent of examinations performed, grants relief to EOI pursuant to 10 CFR 50.55a(g)(6)(i). The relief granted is authorized by law and 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.

3.0 CONCLUSION

The staff has concluded that certain examinations could not be performed as required by the Code at Waterford 3. EOI has provided information in accordance with 10 CFR 50.55a(g)(5)(iii) that performance of Code-required examinations for Welds Nos. 01-074, 16-012, 17-017, 17-033, 15-010, 19-008, 25-016, and 25-018 are impractical. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted for ISI-001 Parts A, B, C, D, F, and E for the current interval.

The relief granted is authorized by law and 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.

Principal Contributor: G. Hatchett

Date: June 17, 1999

TECHNICAL LETTER REPORT
ON THE FIRST 10-YEAR INTERVAL INSERVICE INSPECTION
REQUEST FOR RELIEF NO. ISI-001
FOR
ENTERGY OPERATIONS, INC.
WATERFORD 3 STEAM ELECTRIC STATION
DOCKET NUMBER: 50-382

1. INTRODUCTION

By letter dated January 27, 1998, the licensee, Entergy Operations, Inc., submitted Request for Relief ISI-001, Revision 7, seeking relief from the requirements of the ASME Code, Section XI, for the Waterford 3 Steam Electric Station (SES). This relief request is for the first 10-year inservice inspection (ISI) interval. The Idaho National Engineering and Environmental Laboratory (INEEL) staff's evaluation of the subject request for relief is in the following section.

2. EVALUATION

The information provided by Entergy Operations, Inc. in support of the request for relief from Code requirements has been evaluated and the basis for disposition is documented below. The Code of record for Waterford 3 SES, first 10-year ISI interval, which began on June 30, 1987, is the 1980 Edition with Winter 1981 Addenda of Section XI of the ASME Boiler and Pressure Vessel Code.

2.1 Request for Relief ISI-001, Part A, Examination Category B-H, Item B8.10, Reactor Vessel Integrally Welded Attachments, Weld No. 01-074

Code Requirement: Examination Category B-H, Item B8.10, requires essentially 100% volumetric or surface examination, as applicable, as defined by Figures IWB-2500-13, -14, and -15 of reactor pressure vessel (RPV) integrally welded attachments during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area, provided the reduction in coverage is due to part geometry, or interference by another component.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's surface examination coverage requirement for RPV attachment Weld No. 01-074.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pipe-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-

required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)¹ to this request.

"Approximately 50% of each of two sides of the integral attachment weld surface is blocked due to the close proximity of the six inch studs which hold down the spherical bearings and containment support plates."

Licensee's Proposed Alternative Examination:

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface examination of the weld surface during each inspection interval. However, the examination is limited to 70% coverage due to the close proximity of the six inch studs that hold down the spherical bearings and containment support plates. Therefore, it is impractical to obtain the Code-required coverage for the surface examination. To obtain an additional level of coverage, the component would have to be redesigned and modified. This would place a significant burden on the licensee.

The examinations performed on RPV Attachment Weld No. 01-074, in addition to completed examinations performed on similar welds, provide reasonable assurance of the continued structural integrity of the RPV integrally welded attachments.

Based on the impracticality of complying with the Code coverage requirements and the extent of examinations performed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

2.2 Request for Relief ISI-001 (Part B), Examination Category B-J, Item B9.11, Circumferential Welds in Class 1 Pressure Retaining Piping, Weld No. 16-012

Code Requirement: Examination Category B-J, Item B9.11, requires essentially 100% surface and volumetric examination, as defined by Figure IWB-2500-8, of circumferential welds in Class 1 pressure retaining piping greater than 4-inch nominal pipe size (NPS) during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area, provided the reduction in coverage is due to part geometry, or interference by another component.

1 The licensee's Figures and Tables are not included in this report.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's surface and volumetric examination coverage requirement for circumferential piping Weld No. 16-012.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pipe-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)² to this request."

This weld is "... located inside a penetration."

Licensee's Proposed Alternative Examination:

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface and volumetric examination of circumferential welds in Class 1 pressure retaining piping. However, Weld No. 16-012 is located inside a piping penetration and is completely inaccessible. Therefore, the examination is impractical to perform to the extent required by the Code. To achieve the Code-required surface and volumetric coverage, design modifications to facilitate access for volumetric and surface examination would be required. Imposition of this requirement would place a significant burden on the licensee. However, an additional accessible weld in the same system and piping run should be examined as a substitute for Weld No. 16-012, and to provide the Code-required examination sample size. The licensee should choose a weld with similar characteristics and stress levels as Weld No. 16-012, such as an adjacent weld, just outside the penetration.

Based on the determination that it is impractical to obtain access to Weld No. 16-012 to perform surface and volumetric examinations as required by the Code, and provided the licensee examines an additional similar weld, reasonable assurance of continued structural integrity of this piping system should be

2 The licensee's Figures and Tables are not included in this report.

maintained. Therefore, with the stated provision, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

2.3 Request for Relief ISI-001 (Part C), Examination Category B-J, Item B9.11, Circumferential Welds in Pressure Retaining Piping, Weld No. 17-017

Code Requirement: Examination Category B-J, Item B9.11, requires essentially 100% surface and volumetric examination, as defined by Figure IWB-2500-8, of circumferential welds in Class 1 pressure retaining piping greater than or equal to 4-inch NPS during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area, provided the reduction in coverage is due to part geometry, or interference by another component.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's volumetric examination coverage requirement for circumferential pressure retaining piping Weld No. 17-017.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pipe-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)³ to this request."

This weld "... elbow to pipe configuration limits coverage to one side only."

Licensee's Proposed Alternative Examination:

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface and volumetric examination of circumferential welds in Class 1 pressure retaining piping \geq 4-inch

3 The licensee's Figures and Tables are not included in this report.

NPS each interval. However, portions of Weld No. 17-017 are inaccessible for volumetric examinations due to the proximity of the inside radius of the pipe elbow to the adjacent component. This configuration makes the Code-required volumetric coverage impractical to complete. To achieve the Code-required volumetric coverage, design modifications to facilitate access for examination would be required. Imposition of this requirement would place a significant burden on the licensee.

Based on the information in the licensee's submittal, the cumulative coverage achieved on this weld is 75%. The Code requires 100% examination of similar Class 1 circumferential pressure retaining piping welds. Any existing patterns of degradation would be detected by the examination coverage achieved for this weld in combination with the examinations of similar Class 1 circumferential piping welds. Therefore, reasonable assurance of the structural integrity has been provided. Based on the determination that it is impractical to meet the volumetric examination coverage as required by the Code, and considering the reasonable assurance provided by the examinations that were completed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

2.4 Request for Relief ISI-001 (Part D), Examination Category B-J, Item B9.11, Class 1 Circumferential Piping Weld No. 17-033

Code Requirement: Examination Category B-J, Item B9.11, requires essentially 100% surface and volumetric examination, as defined by Figure IWB-2500-8, of circumferential welds in Class 1 pressure retaining piping ≥ 4 -inch NPS during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area, provided the reduction in coverage is due to part geometry, or interference by another component.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's volumetric examination coverage requirement for circumferential piping Weld No. 17-033.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pip-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)⁴ to this request.

"Reducer taper prevents the axial scan on the reducer side of the weld."

Licensee's Proposed Alternative Examination:

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface and volumetric examination of circumferential welds in Class 1 pressure retaining piping. However, the geometry of the taper on the reducer side of Weld No. 17-033 prevents achieving the Code-required volumetric coverage. For this reason, the Code-required examination coverage is impractical to complete. To achieve the required volumetric coverage, design modifications to facilitate access for examination would be required. Imposition of this requirement would place a significant burden on the licensee.

Based on the information in the licensee's submittal, the cumulative coverage achieved on this weld is 75%. In addition, the Code requires 100% examination of similar Class 1 circumferential pressure retaining piping welds. Any existing patterns of degradation would be detected by the volumetric examination coverage achieved for this weld in combination with the examinations of similar Class 1 circumferential pressure retaining piping welds. Therefore, reasonable assurance of the continued structural integrity has been provided.

Based on the determination that it is impractical to meet the volumetric examination coverage as required by the Code, and considering that reasonable assurance of structural integrity is provided by the examinations that were completed, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

2.5 Request for Relief ISI-001 (Part E), Examination Category B-J, Item B9.11, Class 1 Circumferential Piping Weld Nos. 19-008, 25-016, and 25-018

Code Requirement: Examination Category B-J, Item B9.11, requires essentially 100% surface and volumetric examination, as defined by Figure IWB-2500-8, of circumferential welds in Class 1 pressure retaining piping ≥ 4 -inch NPS during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area,

4 The licensee's Figures and Tables are not included in this report.

provided the reduction in coverage is due to part geometry, or interference by another component.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's volumetric examination coverage requirement for circumferential pressure retaining piping Weld Nos. 19-008, 25-016, and 25-018.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pipe-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)⁵ to this request.

Examination is limited by "Pipe to valve configuration and weld geometry."

Licensee's Proposed Alternative Examination:

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface and volumetric examination of circumferential welds in Class 1 pressure retaining piping. In the relief request the licensee has stated that "pipe to valve configuration and weld geometry" limit the examination coverage of Weld Nos. 19-008, 25-016, and 25-018. Based on the information in the licensee's submittal, the cumulative coverage achieved on these welds is 46%, 70%, and 49%, respectively.

A licensee's request for relief from Code requirements must contain an adequate description of the condition that makes an examination requirement impractical to perform. The Commission may grant such relief and may impose alternative requirements as it deems necessary.

5 The licensee's Figures and Tables are not included in this report.

The licensee has not provided sufficient information to support a determination that relief should be granted according to the criteria of 10 CFR 50.55a(g)(6)(i). Therefore, it is recommended that relief not be granted. The licensee should comply with the Code examination coverage requirements or resubmit this request with adequate information to support the determination that conformance with certain Code requirements is impractical for these welds.

2.6 Request for Relief ISI-001 (Part F), Examination Category B-J, Item B9.31, Class 1 Branch Pipe Connection Weld No. 15-010

Code Requirement: Examination Category B-J, Item B9.31, requires essentially 100% surface and volumetric examination, as defined by Figures IWB-2500-9, -10, and -11, of branch pipe connection welds in pressure retaining piping ≥ 4 -inch NPS during each inspection interval. "Essentially 100%", as defined by ASME Code Case N-460, is greater than 90% coverage of the examination volume or surface area, provided the reduction in coverage is due to part geometry, or interference by another component.

Licensee's Code Relief Request: In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code's surface and volumetric examination coverage requirement for branch pipe connection Weld No. 15-010.

Licensee's Basis for Relief Request (as stated):

"Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pip-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore demonstrating an acceptable level of integrity.

"Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which receive a limited or partial examination during RF8. The summary identifies the specific weld/area and the cause for the partial examination. The listing of welds/areas receiving a partial exam during RF8 is attached (Table 1)⁶ to this request.

Examination is limited by "Branch connection geometry."

Licensee's Proposed Alternative Examination (as stated):

6 The licensee's Figures and Tables are not included in this report.

The licensee proposed no additional examinations.

Evaluation: The Code requires essentially 100% surface and volumetric examination of branch connection geometry in Class 1 pressure retaining piping. In the relief request the licensee has stated that "branch connection geometry" limits the examination coverage of Weld No. 15-010. Based on the information in the licensee's submittal, the cumulative coverage achieved on this weld is 75%.

A licensee's request for relief from Code requirements must contain an adequate description of the condition that makes an examination requirement impractical to perform. The Commission may grant such relief and may impose alternative requirements as it deems necessary.

The licensee has not provided sufficient information to support a determination that relief should be granted according to the criteria of 10 CFR 50.55a(g)(6)(i). Therefore, it is recommended that relief not be granted. The licensee should comply with the Code examination coverage requirements or resubmit this request with adequate information to support the determination that conformance with certain Code requirements is impractical for these welds.

3. CONCLUSION

The INEEL staff evaluated the licensee's submittal and concludes that certain inservice examinations cannot be performed to the extent required by the Code at Waterford 3 SES. The licensee has provided information to support a determination according to 10 CFR 50.55a(g)(5)(iii) that the Code-required volumetric examination coverage for Weld Nos. 01-074, 16-012, 17-017, and 17-033 is impractical. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted for Relief Request No. ISI-001, Parts A, B, C, and D for these welds.

The INEEL staff also concludes that the licensee has not provided adequate information to support a determination that the Code-required volumetric examination coverage for Weld Nos. 19-008, 25-016, 25-018, and 15-010 is impractical. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be denied for Relief Request No. ISI-001, Parts E and F.