March 21, 2000

Dr. Robert C. Mecredy
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89 East Avenue
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SUBJECT REQUESTS FOR RELIEF NOS. 09 THROUGH 13 FROM THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE (ASME CODE) SECTION XI REQUIREMENTS FOR THE R. E. GINNA NUCLEAR POWER PLANT FOURTH 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM (TAC NO. MA6996)

Dear Dr. Mecredy:

By letter dated October 8, 1999, you requested Relief Requests Nos. 1 through 15 from certain ASME Code Section inservice examination requirements for the fourth 10-year interval inservice inspection program. Based on the information provided in the Relief Request Nos. 09 through 13, the staff concludes that for Relief Request Nos. 12 and 13, the licensee's proposed alternatives will provide an acceptable level of quality and safety. Therefore, the proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(i). For Relief Request Nos. 09, 10 and 11, the staff concludes that compliance with the Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, and that the licensee's proposed alternatives will provide reasonable assurance of containment pressure integrity. Therefore, these proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(ii). Enclosure 1 contains the staff's evaluation and Enclosure 2 contains the summary of relief requests. Therefore, Relief Requests 09 through 13 from the Code requirements are granted for the fourth 10-year interval.

For Relief Requests Nos. 1 through 8, 14 and 15, we are continuing our review and we will provide our determination upon completion of the review.

Sincerely,

/RA/

Marsha K. Gamberoni, Acting Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-244

Enclosures: 1. Safety Evaluation
2. Summary of Reliefs Granted

cc w/encls: See next page

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Vice President, Nuclear Operations
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

OF RELIEF REQUESTS FROM THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

(ASME) SECTION XI REQUIREMENTS

FOR CONTAINMENT INSPECTION

ROCHESTER GAS AND ELECTRIC CORPORATION

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

1.0 INTRODUCTION

In the Federal Register dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations to incorporate by reference the 1992 edition with 1992 addenda of Subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code). Subsections IWE and IWL provide the requirements for inservice inspection (ISI) of Class CC (concrete containment), and Class MC (metallic containment) of light-water cooled power plants. The effective date for the amended rule was September 9, 1996, and it requires the licensees to incorporate the new requirements into their ISI plans and to complete the first containment inspection by September 9, 2001. However, a licensee may propose alternatives to or submit a request for relief from the requirements of the regulation pursuant to 10 CFR 50.55a(a)(3) and (g)(5).

By letter dated October 8, 1999 (Reference 1), Rochester Gas and Electric Corporation, the licensee, proposed several alternatives to the requirements of Subsections IWE and IWL of Section XI of the ASME Code for its R. E. Ginna Nuclear Power Plant. The NRC's findings with respect to authorizing the alternatives or denying the proposed requests are discussed in this evaluation.

2.0 EVALUATION

2.1 Relief Request No. 09

2.1.1 Code Requirements

ASME Section XI Code, 1992 Edition, 1992 Addenda, IWE-2500, Table IWE-2500-1, Category E-D, Item Numbers E5.10 and E5.20 requires seals and gaskets on airlocks, hatches, and other devices to be visually examined, VT-3, once each interval to assure containment leak-tight integrity.

2.1.2 Specific Relief Requested

Relief is requested from performing the Code-required visual examination, VT-3, on the seals and gaskets of Class MC pressure retaining components and metallic liners of Class CC components. This relief is requested for the first inspection interval for the IWE Containment Inspection Program (1996 through 2008).

2.1.3 Basis for Relief

10 CFR 50.55a was amended in the Federal Register (61 FR 41303) to require the use of the 1992 Edition, 1992 Addenda, of Section XI when performing containment examinations. The penetrations discussed below contain seals and gaskets.

A. Electrical Penetrations

Electrical penetrations use a header plate attached to a containment penetration nozzle flange with redundant O-rings between the header plate and flange face. Modules through which electrical conductors pass are installed in the header plate. One type, manufactured by Amphenol, uses seals and gaskets to assure leak tight integrity. A second type, manufactured by Conax, uses a set of compression fittings. Replacement modules for the Amphenol penetrations use a combination of O-rings and compression fittings. Each penetration is pressurized with dry nitrogen to maintain and monitor integrity and to prevent the intrusion of moisture into the penetration. These seals and gaskets cannot be inspected without disassembly of the penetration to gain access to the seals and gaskets.

B. Containment Personnel and Equipment Hatches

The personnel and equipment hatches utilize an inner and outer door with gasket surfaces to ensure a leak tight integrity. These hatches also contain other gaskets and seals such as the handwheel shaft seals, electrical penetrations, blank flanges, and equalizing pressure connections which require disassembly to gain access to the gaskets and seals.

Seal and gasket joints receive a 10 CFR Part 50, Appendix J test. As noted in 10 CFR Part 50, Appendix J, the purpose of Type B tests is to measure leakage of containment or penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies. Examination of seals and gaskets require the joints, which are proven adequate through Appendix J testing, be disassembled. For electrical penetrations, this would involve a pre-maintenance Appendix J test, determination of cables at electrical penetrations if enough cable slack is not available, disassembly of the joint, removal and examination of the seals and gaskets, reassembly of the joint, retermination of the cables if necessary, post maintenance testing of the cables, and a post maintenance Appendix J test of the penetration. The work required for the containment hatches would be similar except for the determination, retermination, and testing of cables. This imposes the risk that equipment could be damaged. The 1992 Edition, 1993 Addenda, of Section XI recognizes that disassembly of joints to perform these examinations is not warranted. Note 1 in Examination Category E-D was modified in the 1995 Edition of Section XI to state that seal or gasket connections need not be disassembled solely for performance of examinations. However, without disassembly, most of the surface of the seals and gaskets would be inaccessible.

For those penetrations that are routinely disassembled, a Type B test is required upon final assembly and prior to start-up. Since the Type B test will assure the leak tight integrity of primary containment, the performance of the visual examination would not provide an increase in the level of safety or quality.

Seals and gaskets are not part of the containment pressure boundary under current Code rules (NE-1220(b)). The airlocks and hatches containing these materials are tested in accordance with 10 CFR Part 50, Appendix J. If increased leakage is identified during these Appendix J tests, the cause of leakage would be investigated. If increased leakage were due to degradation of the seal or gasket material, corrective measures would be applied and the component retested. Repair or replacement of seals and gaskets is not subject to Code (1992 Edition, 1992 Addenda) rules in accordance with Paragraph IWA-4111(b)(5) of ASME Section XI.

The visual examination of seals and gaskets in accordance with IWE-2500, Table IWE-2500-1 is a burden without any compensating increase in the level of safety or quality.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Compliance with the original requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Testing the seal and gasket joints in accordance with 10 CFR Part 50, Appendix J will provide adequate assurance of the leak-tight integrity of the seals and gaskets.

2.1.4 Alternative Examinations

The leak testing of seal and gasket joints will be in accordance with 10 CFR Part 50, Appendix J. No additional alternative examinations to the visual examination, VT-3, of the seals and gaskets will be performed.

2.1.5 Justification for the Granting of Relief

This relief request (RR) is similar to RR E-1 submitted by Davis-Besse as one of the Electric Power Research Institute "Containment Inspection Program Guide" pilot plant RRs. This RR will minimize Ginna operating and maintenance cost without decreasing the level of quality and safety.

2.1.6 Staff Evaluation of Relief Request No. 09

Although the staff agrees that ASME Code rules for repair and replacement do not apply to seals and gaskets, the staff does not fully agree with the licensee’s statement that penetration seals and gaskets are not part of the containment pressure boundary. However, the staff finds that the alternative examination of the containment penetration seals and gaskets (including those of electrical penetrations) proposed by the licensee would verify the leak-tight integrity of the seals and gaskets during the Type B testing as required by 10 CFR Part 50, Appendix J. Moreover, in lieu of performing the VT-3 examinations for containment penetration seals and gaskets, the licensee proposes to use the current program for leakage testing containment penetrations in accordance with 10 CFR Part 50, Appendix J.

The staff finds that because the seals and gaskets associated with these penetrations are not accessible for examination when the penetration is assembled, containment penetrations seals

and gaskets must be disassembled and reassembled for the purpose of performing the VT-3 visual examination. These activities (disassembly of the joint, removal and examination of the seals and gaskets, reassembly of the joint, retermination of the cables if necessary, post-maintenance testing of the cables, and a post-maintenance Appendix J test of the penetration) associated with a VT-3 visual examination would introduce the possibility of component damage that would not otherwise occur. The periodic test of penetrations in accordance with 10 CFR Part 50, Appendix J will detect local leaks at containment peak accident pressure and measure leakage across the leakage-limiting boundary of containment penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies. If unacceptable leakage is identified during the test, corrective measures would be taken.

Also, the staff realizes that the 1992 Edition, including the 1993 Addenda of ASME Code, Section XI has recognized that disassembly of joints for the sole purpose of performance of the visual examination is unwarranted. Requiring the licensee to disassemble components for the sole purpose of inspecting seals and gaskets would place a significant hardship on the licensee without a compensating increase in the level of quality and safety.

On the basis discussed above, the staff concludes that the alternative proposed by the licensee will provide reasonable assurance of the leak-tight integrity of the containment penetration seals and gaskets during the Type B testing required by 10 CFR Part 50, Appendix J. Therefore, the request for relief is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) on the basis that compliance with the specific requirements of the Code would result in hardship without a compensating increase in the level of quality and safety.

2.2 Relief Request No. 10

2.2.1 Code Requirements

Paragraphs IWE-2420(b) and IWE-2420(c) of the 1992 Edition, 1992 Addenda of ASME Section XI requires that when component examination results require evaluation of flaws, evaluation of areas of degradation, or repairs in accordance with Article IWE-3000, and the component is found to be acceptable for continued service, the areas containing such flaws, degradation, or repairs shall be reexamined during the next inspection period listed in the schedule of the inspection program of Paragraph IWE-2411 or Paragraph IWE-2412, in accordance with Table IWE-2500-1, Examination Category E-C.

2.2.2 Specific Relief Requested

Relief is requested from the requirements of ASME Section XI Code, 1992 Edition, 1992 Addenda, Paragraphs IWE-2420 (b) and IWE-2420(c) to perform successive examination on repairs. This relief is requested for the first inspection interval for the IWE Containment Inspection Program (1996 through 2008).

2.2.3 Basis for Relief

10 CFR 50.55a was amended in the Federal Register (61 FR 41303) to require the use of the 1992 Edition, 1992 Addenda, of Section XI when performing containment examinations. The purpose of a repair is to restore the component to an acceptable condition for continued service

in accordance with the acceptance standards of Article IWE-3000. Paragraph IWA-4150 requires the owner to conduct an evaluation of the suitability of the repair including consideration of the cause of failure.

If the repair has restored the component to an acceptable condition, it is overly conservative to require successive examinations. Other paragraphs of the ASME Code recognize this requirement as overly conservative. If the repair was not suitable, then the repair does not meet Code requirements and the component is not acceptable for continued service. Neither Paragraph IWB-2420(b), Paragraph IWC-2420(b), nor paragraph IWD-2420(b) requires a repair to be subject to successive examination requirements. Furthermore, if the repair area is subject to accelerated degradation, it would still require augmented examination in accordance with Table IWE-2500-1, examination category E-C. The successive examination of repairs in accordance with paragraphs IWE-2420 (b) and IWE-2420(c) constitutes a burden without a compensating increase in quality or safety.

In its resolution to public Comment #3.3, the NRC stated within SECY 96-080 dated April 17, 1996:

> "The purpose of IWE-2420 (b) is to manage components found to be acceptable for continued service (meaning no repair or replacement at this time) as an Examination Category E-C component. If the component had been repaired or replaced, then the more frequent examination would not be needed."

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Compliance with the original requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The requirement to perform successive examinations following repairs has been removed in the 1997 Addenda of ASME Section XI. This addenda has been approved by the ASME Main Committee and has been published.

2.2.4 Alternate Examinations

Successive examinations in accordance with paragraphs IWE-2420(b) and IWE-2420(c) are not required for repairs made in accordance with Article IWA-4000.

2.2.5 Justification for the Granting of Relief

This RR is similar to RR E-6 submitted by Davis-Besse as one of the EPRI "Containment Inspection Program Guide" pilot plant RRs. This RR will minimize Ginna operating and maintenance cost without decreasing the level of quality and safety.

2.2.6 Staff Evaluation of Relief Request No. 10

In lieu of meeting ASME Section XI, Subarticles IWE-2420(b) and (c) that require successive examinations of repaired areas in accordance with Table IWE-2500-1, the licensee proposes to use the process and acceptance examinations and evaluations required by the Code for repairs.

The staff finds that when repairs are complete, IWA-4150 requires licensees to evaluate the suitability of the repair. When a repair is required because of the failure of an item, the evaluation shall consider the cause of failure to ensure that the repair is suitable. Considering that the failure mechanism is identified and corrected as required and the repair receives preservice examinations, as required, the proposed alternative will provide reasonable assurance of structural integrity. In addition, IWB-2420(b), IWC-2420(b), and IWD-2420(b) do not require the successive inspection of repairs for Class 1, 2 and 3 components as required in IWE-2420(b) for metal containment. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) on the basis that compliance with the specific Code requirements would result in hardship without a compensating increase in the level of quality and safety.

2.3 Relief Request No. 11

2.3.1 Code Requirements

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20 requires for a bolt torque or tension testing of bolted connections that have not been disassembled and reassembled during the inspection interval.

2.3.2 Specific Relief is Requested

Relief is requested from performing the bolt torque or tension test in accordance with Table IWE-2500-1, "Examination Categories," Examination Category E-G, "Pressure Retaining Bolting," for bolted connections that have not been disassembled and reassembled during the inspection interval. This relief is requested for the first inspection interval for the IWE Containment Inspection Program (1996 through 2008).

2.3.3 Basis for Relief

10 CFR 50.55a was amended in the Federal Register (61 FR 41303) to require the use of the 1992 Edition, 1992 Addenda, of Section XI when performing containment examinations. Bolt torque or tension testing is required on bolted connections that have not been disassembled and reassembled during the inspection interval. Determination of the torque or tension value would require that the bolting be untorqued and then retorqued or retensioned. The performance of the Type B test itself proves that the bolt torque or tension remains adequate to provide a leak rate that is within acceptable limits. The torque or tension value of bolting only becomes an issue if the leak rate is excessive. Once a bolt is torqued or tensioned, it is not subject to dynamic loading that could cause it to experience significant change.

Verification of torque or tension values on bolted joints that are proven adequate through Appendix J testing and visual inspection is adequate to demonstrate that design function is met. Torque or tension testing is not required on any other ASME Section XI, Class 1, 2, or 3 bolted connections or their supports as part of the inservice inspection program. Also, all penetrations at R.E. Ginna Nuclear Power Plant are seated with pressure (not unseated).

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Compliance with the original requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.3.4 Alternate Examinations

The following examinations and tests required by Subsection IWE ensure the structural integrity and the leak-tightness of Class MC pressure retaining bolting, and, therefore, no additional alternative examinations are proposed:

(1) Exposed surfaces of bolted connections shall be visually examined in accordance with requirements of Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item No. E8.10,

(2) Bolted connections shall meet the pressure test requirements of Table IWE-2500-1, Examination Category E-P, All Pressure Retaining Components, Item E9.40, and

(3) A general visual examination of the entire containment once each inspection period shall be conducted in accordance with 10 CFR 50.55a(b)(2)(x)(E).

2.3.5 Justification for the Granting of Relief

This RR is similar to RR E-7 submitted by Davis-Besse as one of the EPRI "Containment Inspection Program Guide" pilot plant relief requests. This RR will minimize Ginna operating and maintenance cost without decreasing the level of quality and safety.

2.3.6 Staff Evaluation of Relief Request No. 11

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20 requires bolt torque or tension testing on bolted connections that have not been disassembled and reassembled during the inspection interval. This examination is used to aid in the determination that a leak-tight seal exists and that the pressure integrity of the subject bolted connections is maintained. The licensee proposes to use the 10 CFR Part 50, Appendix J, Type B test as an alternative to the Code requirement to verify the integrity of penetrations with bolted connections.

The staff finds that compliance with ASME Code requirements will cause a hardship or an unusual difficulty because untorquing and subsequent re-torquing bolted connections which are verified to have acceptable leakage through 10 CFR Part 50, Appendix J testing does not provide an increase in the level of quality and safety. The staff also finds that the alternative approach proposed by the licensee (the test required by 10 CFR Part 50, Appendix J to verify the leak-tight integrity of bolted connections for containment vessel leak-tight integrity) will provide a reasonable assurance of the containment leak-tight integrity. On this basis, the staff concludes that the alternative proposed by the licensee is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

2.4 Relief Request No. 12

2.4.1 Code Requirements

Paragraph IWE-5240 of the 1992 Edition, 1992 Addenda of ASME Section XI requires that the requirements of Paragraph IWA-5240 for visual examination, VT-2, are applicable following repair, replacement or modification.

2.4.2 Specific Relief Requested

Relief is requested from performing the VT-2 visual examination in connection with system pressure testing following repair, replacement or modification under Article IWE-5000. This relief is requested for the first inspection interval for the IWE Containment Inspection Program (1996 through 2008).

2.4.3 Basis for Relief

10 CFR 50.55a was amended in the Federal Register (61 FR 41303) to require the use of the 1992 Edition, 1992 Addenda, of ASME Section XI when performing containment examinations. Paragraph IWE-5210 states that except as noted within Paragraph IWE-5240, the requirements of Article IWA-5000 are not applicable to Class MC or Class CC components.

Paragraph IWE-5240 states that the requirements of Paragraph IWA-5240 (corrected from IWA-5246 to IWA-5240 in the 1993 Addenda) for visual examinations are applicable. Paragraph IWA-5240 identifies a "VT-2" visual examination. VT-2 examinations are conducted to detect evidence of leakage from pressure-retaining components, with or without leakage collection systems, as required during the conduct of a system pressure test. In addition, personnel performing VT-2 examinations are required to be qualified in accordance with Subarticle IWA-2300 of ASME Section XI.

For repairs, replacements or modifications that are performed under ASME Section XI Code, applicable construction code (or installation code) non-destructive examinations (NDE) are performed and must meet the acceptance criteria of the construction/installation code. In addition to the construction code NDE, applicable ASME Section XI NDE pre-service NDE are also performed. These construction code and Section XI pre-service NDE requirements provide additional assurances that the repairs, replacements or modifications are sound and leak-tight. Table IWE-2500-1, Examination Category E-P, identifies the examination method of 10 CFR Part 50, Appendix J and does not specifically identify a VT-2 visual examination. 10 CFR Part 50, Appendix J provides requirements for testing as well as acceptable leakage criteria. These tests are performed by Appendix J "Test" personnel and utilize calibrated equipment to determine acceptability. Additionally, 10 CFR 50.55a(b)(2)(x)(E) requires a general visual examination of the containment each period that would identify any structural degradation that may contribute to leakage. A "VT-2" visual examination will not provide additional assurance of safety beyond that of current Appendix J practices.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i). The proposed alternative (pressure testing in accordance with 10 CFR Part 50, Appendix J) will provide an acceptable level of quality and safety.

The reference to paragraph IWA-5240 has been removed in the 1997 Addenda of ASME Section XI. This addenda has been approved by the ASME Main Committee and should be published in 1998.

2.4.4 Alternate Examinations

Testing shall be conducted in accordance with 10 CFR Part 50, Appendix J, in lieu of Paragraph IWE-5240 of ASME Section XI, as well as performing an IWE detailed visual examination (VT-1) of the repaired or replaced area.

2.4.5 Justification for the Granting of Relief

For repairs, replacements or modifications that are performed under ASME Section XI Code, applicable construction code (or installation code) NDE are performed and must meet the acceptance criteria of the construction/installation code. In addition to the construction code NDE, applicable ASME Section XI NDE pre-service NDE are also performed. These construction code and Section XI pre-service NDE requirements provide additional assurances that the repairs, replacements or modifications are sound and leak-tight. This RR will minimize Ginna operating and maintenance cost without decreasing the level of quality and safety.

2.4.6 Staff Evaluation of Relief Request No. 12

As an alternative to the requirements of Paragraph IWA-5240 of ASME Section XI for the visual examination, VT-2, to be applied following repair, replacement or modification, the licensee proposed that testing shall be conducted in accordance with 10 CFR Part 50, Appendix J as well as performing an IWE detailed visual examination (VT-1) of the repaired or replaced area.

The staff agrees with the licensee's statement that for repairs, replacements or modifications that are performed under ASME Section XI, the applicable construction/installation code NDE are performed and must meet the acceptance criteria of the construction /installation code. In addition to the construction code NDE, applicable ASME Section XI pre-service NDE is also performed. These construction code and Section XI pre-service NDE requirements provide additional assurances that the repairs, replacements or modifications are sound and leak-tight. Also, Table IWE-2500-1 (Examination Category E-P) requires only an examination method of 10 CFR Part Part 50, Appendix J for the containment vessel pressure retaining boundary following each repair, replacement, or modification and does not specifically identify a VT-2 visual examination. In addition, 10 CFR Part 50, Appendix J provides requirements for testing including acceptable leakage criteria and the tests are performed by Appendix J "Test" personnel by utilizing calibrated equipment to determine acceptability. Moreover, 10 CFR 50.55a(b)(2)(x)(E) requires a general visual examination of the containment each period that would identify any structural degradation that may contribute to leakage. Furthermore, the licensee will perform an IWE detailed visual examination (VT-1) of the repaired or replaced area.

From the discussion above, staff finds that the licensee's proposed alternative, together with the NDE performed for repairs, replacements or modifications, provides an acceptable level of quality and safety. Therefore, the alternative proposed by the licensee is authorized pursuant to 10 CFR 50.55a(a)(3)(i).

2.5 Relief Request No. 13

2.5.1 Code Requirements

ASME Section XI, 1992 Edition, 1992 Addenda, IWL-2310, Visual Examination and Personnel Qualification, and IWA-2210, Visual Examinations, requires specific minimum illumination and maximum direct examination distance for all concrete surfaces.

2.5.2 Specific Relief Requested

Relief is requested from Paragraph IWA-2210, Visual Examination Requirements, for minimum illumination and maximum direct examination distance of Class CC components under Paragraph IWL-2310. This relief is requested for the first inspection interval for the IWE Containment Inspection Program (1996 through 2008).

2.5.3 Basis for Relief

10 CFR 50.55a was amended in the Federal Register (61 FR 41303) to require the use of the 1992 Edition, 1992 Addenda, of Section XI when performing containment examinations. In addition to the requirements of Subsection IWL, the rulemaking also imposes the requirements of Subsection IWA of the 1992 Edition, 1992 Addendum, of ASME Section XI for minimum illumination and maximum direct examination distance of Class CC components, specifically for the examination of concrete under paragraph IWL-2510. When remotely performing the visual examinations required by Subsection IWL, Paragraph IWL-2510, the maximum direct examination distance specified in Table IWA-2210-1 may be extended, and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased. IWA-2210 allows for remote examination as long as the remote examination procedure is demonstrated to resolve the selected test chart characters. The registered professional engineer (RPE) will identify minimum size of indications of interest. For remote visual examination, the procedure and equipment to be used will be demonstrated capable of resolving these minimum indications to the satisfaction of the RPE and the authorized nuclear insurance inspector (ANII), as allowed in IWA-2240, "Alternative Examinations." The record of demonstration will be available to Regulatory Authorities.

Accessibility to higher portions of the dome and the containment building itself make it a hardship to obtain the maximum direct examination distance and minimum illumination requirements. The installation of extensive temporary scaffold systems or a climbing scaffold system to access these portions of the containment would be necessary. These scaffolds would provide limited access due to containment geometry restrictions as well as structural and equipment interferences. The installation and removal of these scaffolds would increase both worker radiation exposure and personnel safety in order to meet paragraph IWA-2210 requirements. The NRC staff received seven comments that were consolidated into Public Comment #2.3 in Part III of Attachment 6A to SECY-96-080. The staff response to these concerns is as follows: "Comments received from ASME members on the containment committees indicate that the newer, more stringent requirements of IWA-2210 were not intended to be used for the examination of containment and were inadvertently included in Subsection IWL. The NRC agrees that remote examinations are the only practical method for inspecting much of the containment surface area. 10 CFR 50.55a(b)(2)(x)(B) has been added

to the final rule which contains alternative lighting and resolution requirements which may be used in lieu of the requirements contained in IWA-2210-1." However, as specified within 10 CFR 50.55a(b)(2)(x)(B) of the final rule, this alternative applies only to Subsection IWE, and not to Subsection IWL.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Compliance with the original requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.5.4 Alternate Examinations

When performing remotely the visual examinations required by Subsection IWL, Paragraph IWL-2510, the maximum direct examination distance specified in Table IWA-2210-1 may be extended, and the minimum illumination requirements specified in Table IWA-2210-1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

2.5.5 Justification for the Granting of Relief

This RR is similar to RR L-1 submitted by Calvert Cliffs as one of the EPRI "Containment Inspection Program Guide" pilot plant RRs. RR L-1 (for Calvert Cliffs) was subsequently approved by the NRC. Refer to a letter from the NRC (S. Bajwa) to Baltimore Gas and Electric (C. Cruse), dated November 16, 1998. This RR will minimize Ginna operating and maintenance cost without decreasing the level of quality and safety.

2.5.6 Staff Evaluation of Relief Request No. 13

As described in “Basis for Relief” section above, because the accessibility to higher portions of the dome and the containment building itself will make it a hardship to obtain the maximum direct examination distance and minimum illumination requirements, the licensee proposed an alternative to the requirements for the measurement of illumination and examination distance for visual examinations specified in ASME Section XI, 1992 Edition, 1992 Addenda, IWL-2310, “Visual Examination and Personnel Qualification,” and IWA-2210, “Visual Examination.” The alternate examinations state that the Code required maximum direct examination distance may be increased and the minimum illumination may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

The visual examinations on containment are performed to determine if damage or degradation, including cracks, wear, corrosion, erosion or other physical damage, warrant additional evaluation or repair of the structure. In order for the visual examinations to be performed in such a way as to detect critical flaws, proper lighting is essential. IWA-2210 allows for remote examination as long as the remote examination procedure is demonstrated to resolve the selected test chart characters. The licensee, when the alternative approach is taken, explained that the RPE will identify minimum size of indications of interest. For remote visual examination, the procedure and equipment to be used will be demonstrated capable of resolving these minimum indications to the satisfaction of the RPE and the ANII, as allowed in IWE-2240, “Alternative Examination.” In addition, the licensee noted in the staff’s response to

public comments on SECY-96-080 that the NRC agrees that remote examinations are the only practical method for inspecting much of the containment surface area.

On the basis discussed above, the staff finds that the alternative examinations proposed by the licensee provide an acceptable level of quality and safety and are therefore authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.0 CONCLUSION

Based on our review of the information provided in the requests for relief (RR Nos. 09 through 13), the staff concludes that for RR Nos. 12 and 13, the licensee's proposed alternatives will provide an acceptable level of quality and safety. Therefore, the proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(i). For RR Nos. 09, 10 and 11, the staff concludes that compliance with the Code requirements would result in a burden without a compensating increase in the level of quality and safety, and that licensee's proposed alternatives will provide reasonable assurance of containment pressure integrity. Therefore, these proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: T. Cheng

Date: March 21, 2000

4.0 REFERENCE

Letter, R. C. Mecredy, RG&E to G. S. Vissing, NRC, “Ginna Nuclear Power Plant Inservice Inspection - ASME Section XI Required Examinations, Relief Requests,” dated October 8, 1999.

Summary of Relief Requests
R. E. Ginna Nuclear Power Plant

Relief Request No.	10 CFR 50.55a - ASME Code IWE/IWL Section	Issue Identification	Recommended NRC Action	Remarks
09	IWE-2500,Table IWE-2500-1 E-D	VT-3 Examination on Seals and Gaskets	(a)(3)(ii)	authorized
10	IWE-2400(b) and IWE-2400(c)	Successive Examination after Repairs	(a)(3)(ii)	authorized
11	Table IWE-2500-1, E-G, E8.20	Torque/Tension Test of Pressure Retaining Bolting	(a)(3)(ii)	authorized
12	IWE-5240	VT-2 Examination of after System Pressure Test	(a)(3)(i)	authorized
13	IWL-2310	Visual Examination and Personnel Qualification	(a)(3)(i)	authorized