



A PECO Energy/British Energy Company

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Three Mile Island Unit 1

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5928-00-20013

January 28, 2000

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

Ladies and Gentlemen:

Subject: Three Mile Island, Unit 1 (TMI Unit 1)  
Operating License No. DPR-50  
Docket No. 50-289  
Inservice Inspection (ISI) - Requests for Relief from ASME Boiler & Pressure Vessel  
Code Section XI Subsection IWE and IWL Requirements

In the Federal Register (FR), dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations to incorporate by reference the 1992 Edition and Addenda of Subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Requirements for Inservice Inspection (ISI) of Class MC and Class CC containments are provided in Section XI, Subsection IWE, "Requirements for Class (MC) Metallic Containment and Metallic Liners of Class (CC) Concrete Containment Components at Light-Water Cooled Plants" and Section XI, Subsection IWL, "Requirements for Class CC Concrete Components at Light-Water Cooled Plants." Compliance is required by September 9, 2001.

The TMI Unit 1 Reactor Building is a reinforced concrete structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The cylindrical wall is prestressed with a post-tensioning system in the vertical and horizontal directions. The dome roof is prestressed using a three way post-tensioning system. The inside surface of the Reactor Building is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions.

The purpose of this letter is to request relief pursuant to 10CFR50.55a(a)(3)(i) or (ii) from certain requirements of Section XI of the ASME Code. The relief requests transmitted by this letter in Attachment 1 (RR-1 through RR-7) are similar to relief granted by the NRC for other licensees. TMI Unit 1 relief requests RR-1 through RR-6, are similar to the relief requests approved for Davis-Besse Nuclear Power Station (DBNPS), Docket Number 50-346 in a safety evaluation dated June 30, 1998. TMI Unit 1 relief request RR-7 is similar to relief approved by the NRC for the Duke Energy Corporation plants - Docket Numbers 50-269, -270, -287, -369, -370, -413, and -414) in a safety evaluation dated November 25, 1998 and a relief request approved by the NRC for Arkansas Nuclear One (ANO) - Docket Numbers 50-313 and -368) in a safety evaluation dated April 1, 1999. The TMI-Unit 1 requests for relief are summarized as follows:

Relief Request RR-1, "Seals and Gaskets," (Reference: DBNPS Relief Request RR-E1):

Pursuant to 10 CFR 50.55a (a)(3)(i), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Code Items E5.10 and E5.20 which require a visual examination

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of metal containment seals and gaskets. Examination of most seals and gaskets require the joints to be disassembled. Containment seals and gaskets will be proven adequate through the performance of leakage testing in accordance with 10CFR50 Appendix J, Option B.

Relief Request RR-2, "NDE Personnel Qualification and Certification," (Reference: DBNPS Relief Request RR-E2):

Pursuant to 10 CFR 50.55a (a)(3)(ii), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Subarticle IWA-2300, "Qualifications of Nondestructive Examination Personnel," which requires qualification and certification of nondestructive examination personnel in accordance with ANSI/ASNT CP-189, 1991, "Standards for Qualification and Certification of Nondestructive Testing Personnel." The current TMI Unit I ISI program requires the use of SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing," which would necessitate the development and administration of a second qualification program. Neither CP-189 nor SNT-TC-1A specifically include visual examination which is the primary nondestructive examination required by Subsection IWE. Nondestructive examination personnel performing IWE examinations will be qualified in accordance with SNT-TC-1A.

Relief Request RR-3, "Preservice Examination of Reapplied Paint or Coatings," (Reference: DBNPS Relief Request RR-E3):

Pursuant to 10 CFR 50.55a (a)(3)(i), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Subarticle IWE-2200(g), which requires a preservice examination of reapplied paint or coatings to steel containments. Neither paint nor coatings contribute to the structural integrity or leak tightness of the containment. Reapplied paint or coating will be examined in accordance with the AmerGen Operational Quality Assurance Plan.

Relief Request RR-4, "Examination Prior to Paint or Coating Removal," (Reference: DBNPS Relief Request RR-E4):

Pursuant to 10 CFR 50.55a (a)(3)(i), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Subarticle IWE-2500(b), which requires visual examination of paint or coatings prior to removal. Neither paint or coatings contribute to the structural integrity or leak tightness of the containment. Paint or coating degradation would be revealed by the visual examinations conducted as required by Subsection IWE of ASME Section XI. If degradation of the paint or coating is identified, measures will be applied to determine if the containment boundary is affected.

Relief Request RR-5, "Successive Examinations After Repair," (Reference: DBNPS Relief Request RR-E6):

Pursuant to 10 CFR 50.55a (a)(3)(ii), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Subarticle IWE-2420(b) and IWE-2420(c), which require that repaired areas be examined during the next inspection period. Repairs will restore the component to an acceptable condition for continued service. Successive examinations will not be required for repaired areas.

Relief Request RR-6, "Bolt Torque or Tension Testing," (Reference: DBNPS Relief Request RR-E7):

Pursuant to 10 CFR 50.55a (a)(3)(ii), relief is requested from Section XI of the ASME Code, 1992 Edition, 1992 Addenda, Code Item E8.20, which requires a bolt torque or tension test for bolted connections that have not been disassembled and reassembled during the inspection interval. The leak tightness of bolted connections will be verified through the performance of leakage testing in accordance with 10CFR50 Appendix J, Option B.

Relief Request RR-7, "Visual Examinations of Concrete Components," (Reference: Duke Energy Corporation and ANO approvals described above):

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested from performing the code specified VT-1C and VT-3C illumination and distance requirements of IWL-2310 (a) and (b) along with IWA-2210 and table IWA-2210-1 Visual Examination of concrete surfaces, which establishes required minimum illumination values (50 foot candles) and maximum direct viewing distances (2 feet and 4 feet for the VT-1C and VT-3C respectively). The visual examination techniques used for the Subsection IWL examinations shall be qualified, as has been permitted by 10 CFR 50.55a(b)(2)(x)(B) for the Subsection IWE components, to provide an adequate level of quality and safety.

These relief requests apply to inspections performed during the TMI Unit 1 Cycle 13 Refueling (13R) Outage which ended in October 1999 and inspections of the containment exterior that were completed in December 1999. Results of these inspections were included with the AmerGen submittal of 13R ISI ASME NIS-1&2 Data Reports by letter dated January 14, 2000. The complete report of containment inspections will be submitted as part of the 25<sup>th</sup> Year Tendon Surveillance Report by February 29, 2000 as required by TMI-1 Technical Specification 4.4.2.1.6, three (3) months following completion of the surveillance. AmerGen Energy requests NRC approval by August 2000.

Very Truly Yours,



John B. Cotton  
Vice President, TMI Unit 1

MRK  
Attachment

cc: Administrator, NRC Region I  
TMI Senior NRC Resident Inspector  
TMI Unit 1 Senior NRC Project Manager  
File No. 00032

RELIEF REQUEST RR-1, "CONTAINMENT INSPECTIONS, SEALS AND GASKETS"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

Seals (E5.10) and Gaskets (5.20) referred to in IWE "Examination and Pressure Test Requirements " Table IWE-2500-1, Category E-D.

II. CODE REQUIREMENT(S):

IWE-2500, Table IWE-2500-1 along with note 1, requires seals and gaskets on airlocks, hatches and other devices that are required to assure containment leak-tight be visually (VT-3) examined, once each interval to assure containment leak-tight integrity.

III. CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED:

Relief is requested from performing that Code required Visual, VT-3, examinations on seals and gaskets within the scope of IWE 2500, Table IWE-2500-1 examination category E-D of the ASME Code, Section XI, 1992 Edition, 1992 Addenda.

IV. BASIS FOR REQUESTING RELIEF:

The following penetrations discussed below contain seals and gaskets:

A. Electrical Penetrations:

TMI Unit 1 has two types of electrical penetrations. One manufactured by Westinghouse for the Reactor Cooling Pump cables and the other manufactured by General Electric for all other electrical penetrations.

1. Westinghouse ETD type penetrations:

A welded penetration to nozzle configuration, with a non-visible 6061 aluminum seal. Penetrations of this type are pressurized with dry nitrogen to 15-20 psig. A pressure gauge is associated with each penetration for seal/penetration integrity.

2. General Electric 238X297G1 type penetrations:

Three basic types of penetrations exist, however the designs for all of these types are the same. Each penetration is welded to a nozzle, there are double seals at each end. Seals are made up of a potting compound along with epoxy inserted into the annulus holes. Both of these seals are inaccessible. Seal integrity is verified periodically with a general visual of the sealant coating and a check of the penetration seal pressure.

B. Equipment and Personnel containment penetration hatches:

The equipment and personnel hatches utilize flanged joints designed for use of a double gasket seal, along with an inner and outer door with gasket surfaces to ensure a leak tight integrity. Both hatches also contain other gaskets and seals such as the hand-wheel shaft seals, electrical penetrations, blank flanges and equalizing pressure connections, which would require disassembly to gain access.

C. Reactor Building Purge Containment Isolation Valves:

The Reactor Building purge Isolation Valves are 48 inch diameter butterfly valves with Ethylene Propylene seats.

Components which penetrate and seal the containment boundary are leak tested in accordance with 10CFR50, Appendix J, Option B test requirements. This testing includes leakage measurements of containment or penetrations (mechanical/electrical) whose design incorporates resilient seals, gaskets, and sealant compounds fitted with

flexible metal seal assemblies. The IWE examination of these seals and gaskets would involve disassembly of the connections/joints that have otherwise been proven adequate through Appendix J testing. For electrical penetrations this would involve pre-maintenance Appendix J testing, de-termination of electrical cables if enough slack is not available, disassembly of the joint, removal and examination of the seals and gaskets, reassembly of the joint, re-termination of cables if necessary, post maintenance testing of cables and a post maintenance Appendix J test of the penetration. In most cases new seals are required to be installed by the manufacturer, which would negate the VT-3 examination performed on the removed seals. The effort required to examine the mechanical penetrations and containment hatches would be similar except for the electrical portions.

Compliance with the Code would impose undue risk for equipment damage. The 1992 Edition, 1993 Addenda and later edition's and addenda's of ASME Section XI recognize that disassembly of connections/joints to perform these examinations is not warranted. As note 1 in the examination category E-D was modified to state that, "sealed or gasket connections need not be disassembled solely for the performance of Examinations." However, without disassembly, most of the surface of the seals and or gaskets would be inaccessible.

V. ALTERNATIVE EXAMINATIONS:

The leak-tightness of seals and gaskets will be tested in accordance with 10 CFR 50, Appendix J Option B.

VI. JUSTIFICATION FOR GRANTING RELIEF:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)i and ii. Testing the seals and gaskets in accordance with 10 CFR 50, Appendix J, type B test, provides adequate assurance of the leak-tight integrity of the connections/joints. The Type B test has greater sensitivity and is a more appropriate examination to assure leak-tight integrity of the primary containment. Compliance with the requirements specified by Section XI, Subsection IWE would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The performance of a visual (VT-3) examination would not increase the level of safety or quality of the connection/joint.

When the airlocks and hatches containing these materials are tested in accordance with 10CFR50, Appendix J, degradation of the seal or gasket material would be revealed by an increase in the leakage rate. Corrective measures would be applied and the component re-tested. Also, repair or replacement of seals and gaskets is not subjected to the ASME Section XI Code (1992 Edition, 1992 Addenda) rules in accordance with Paragraph IWA-4111(b)(5).

The Equipment and personnel hatches are not normally removed during maintenance or refueling outages. However, both of these components are leak rate tested as mentioned above. Where any one of the hatches are removed or leak-tightness has been compromised, an Appendix J, type B test is performed, along with a visual examination of the sealing surfaces for damage or leak paths prior to start-up.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-2, "CONTAINMENT INSPECTIONS, NDE PERSONNEL QUALIFICATION AND CERTIFICATION"

I. SYSTEMS/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

All components subject to examination in accordance with Subsection IWE of the 1992 Edition, 1992 Addenda of ASME Section XI.

II. CODE REQUIREMENTS:

Subarticle IWA-2300, "Qualification of Nondestructive Examination Personnel," requires qualification of nondestructive examination personnel to the requirements of CP-189-1991, "Standard for Qualification and Certification of Nondestructive Testing Personnel," as amended by the ASME Section XI.

III. REQUIREMENT FOR WHICH RELIEF IS REQUESTED:

Relief is requested from the provisions of Subarticle IWA-2300, "Qualification of Nondestructive Examination Personnel." This requires NDE personnel to be qualified and certified using a written practice in accordance with CP-189, "Standard for Qualification and Certification of Nondestructive Testing Personnel," as amended by the requirements of Subarticle IWA-2300.

IV. BASIS FOR REQUESTING RELIEF:

10CFR 50.55a was amended, as cited 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 IWE, this also imposes the requirements of Subsection IWA, General Requirements, of the 1992 Edition, 1992 Addenda of Section XI. Subarticle IWA-2300 requires qualification of nondestructive examination personnel to CP-189, as amended by Subarticle 2300.

A written practice based on the requirements of CP-189, as amended by the requirements of the Subarticle IWA-2300, to implement Subsection IWE duplicates efforts already in place for all other subsections. The TMI Unit 1 second ten year inservice inspection program is written to meet the 1986 Edition of Section XI with no addenda. Subarticle IWA-2300 of the 1986 Edition requires a written practice based on SNT-TC-1A, "Personnel Qualification and Certification of Nondestructive testing," as amended by the requirements of Subarticle IWA-2300. Further, Subarticle IWA-2300 of the 1992 Edition, 1992 Addenda, states, "Certifications based on SNT-TC-1A are valid until recertification is required."

Visual examination is the primary nondestructive examination method required by Subsection IWE. Neither CP-189 nor SNT-TC-1A specifically includes visual examination. Therefore, the code requires qualification and certification to comparable levels as defined in CP-189 or SNT-TC-1A, as applicable, and the employer's written practice. Table IWE-2500-1 may also require ultrasonic thickness examinations. These examinations are relatively simple and do not require any extensive training and qualification program. Therefore, use of CP-189 in place of SNT-TC-1A will not improve the capability of the examination personnel to perform the visual and ultrasonic thickness examinations required by IWE.

Development and administration of a second program would not enhance safety or quality and would serve as a burden, particularly in developing a second written practice,

tracking of certifications, and duplication of paperwork. This duplication would also apply to Nondestructive Examination (NDE) vendor programs.

V. ALTERNATIVE EXAMINATIONS:

Examinations required by Subsection IWE shall be conducted by personnel qualified and certified to a written practice based on SNT-TC-1A and the 1986 Edition of Section XI with no addenda. Visual examination personnel receive specific training on conducting containment examinations.

VI. JUSTIFICATION FOR GRANTING ALTERNATIVE:

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

The VT-3 examination technique is the primary NDE inspection method for the examination of containment. Neither SNT-TC-1A nor CP-189 contains visual requirements. AmerGen Energy will also be updating its certification program in April 2001 to the NRC approved code. This will dictate any change/update in the personnel certification programs.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-3, "CONTAINMENT INSPECTIONS, PRESERVICE EXAMINATION OF REAPPLIED PAINT OR COATINGS"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

All class MC, Subarticle IWE-2200(g), preservice examination requirements of reapplied painted or coated containments.

II. CODE REQUIREMENTS:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE-2200(g) requires that when paint or coatings are reapplied, the condition of the new paint or coating shall be documented in the preservice examination records.

III. REQUIREMENT FOR WHICH RELIEF IS REQUESTED:

Relief is requested from the requirement to perform a preservice inspection of new paint or coatings.

IV. BASIS FOR REQUESTING RELIEF:

The paint or coatings on the containment boundary were not subjected to ASME Section XI rules for repair and replacement in accordance with IWA-4111(b)(5) during original application. The adequacy of the applied coatings is verified through the implementation of the TMI Unit 1 maintenance program and the AmerGen Operational Quality Assurance plan.

The maintenance and quality assurance programs for paint and protective coatings include planned and systematic actions necessary to provide adequate confidence that shop or field coating work will be performed satisfactorily.

The maintenance and quality assurance programs are applied to protective coatings consistent with the nature and scope of work.

Recording the condition of reapplied coating in the preservice record does not substantiate the containment structural integrity. Should deterioration of the coating occur in the reapplied area, that area would require additional evaluation regardless of the preservice record. Recording the condition of the new coating in the preservice records would not increase the level of quality or safety.

In SECY 96-080, "Issuance of final amendment to 10 CFR 50.55a to incorporate by reference the ASME Boiler and Pressure Vessel Code (ASME Code), Section XI, Division 1, Subsection IWE and IWL," dated April 17, 1996, the response to comment #3.2 regarding IWE-2200(g) states: "In the NRC's opinion, this does not mean that a visual examination must be performed with every coating application. A visual examination of the topcoat to determine the soundness and the condition of the topcoat should be sufficient." This is currently accomplished through inspections directed by TMI Unit 1 maintenance procedures. For coatings inside containment, inspections are performed after every coat.

V. ALTERNATIVE EXAMINATIONS:

Reapplied paint or coatings on the interior surfaces of the containment liner will be examined in accordance with the maintenance program and the AmerGen Energy Operational Quality Assurance Plan. (Reference: NRC letter dated December 3, 1999, "Completion of Licensing Action for Generic Letter 98-04, 'Potential for Degradation of the Emergency Core Cooling System and the Containment Spray System After a Loss-Of-Coolant Accident Because of Constructive and Protective Coating Deficiencies and Foreign Material in Containment,' dated July 14, 1998.")

VI. JUSTIFICATION FOR GRANTING RELIEF:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i), as the AmerGen Operational Quality Assurance Plan currently provides an adequate level of quality and safety, as implemented through stations programs and procedures.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-4, "CONTAINMENT INSPECTIONS, EXAMINATION PRIOR TO PAINT OR COATING REMOVAL"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

All class MC, Subarticle IWE-2500(b) visual examinations per table IWE-2500-1 of painted or coated containment components prior to removal of paint or coatings.

II. CODE REQUIREMENTS:

ASME Section XI, 1992 Edition, 1992 Addenda, Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, the paint or coatings shall be visually examined in accordance with table IWE-2500-1 prior to removal.

III. REQUIREMENT FOR WHICH RELIEF IS REQUESTED:

Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, the paint or coating shall be visually examined in accordance with table IWE-2500-1 prior to removal.

IV. BASIS FOR REQUESTING RELIEF:

10 CFR 50.55a was amended, as cited 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. Paint and coatings were not subjected to code rules when they were originally applied and are not subject to ASME Section XI rules for repair or replacement in accordance with IWA-4111(b)(5). Degradation or discoloration of the paint or coating materials on the containment would be an indicator of potential degradation of the containment boundary. Additional measures would have to be employed to determine the nature and extent of any degradation, if present.

Performing periodic containment paint or coating examinations are performed in accordance with the AmerGen Operational Quality Assurance Plan and the engineering coating monitoring procedure. The application of ASME Section XI rules for removal of paint or coatings, when related to an ASME Section XI repair or replacement activity, is a burden without compensating an increase in quality or safety.

V. ALTERNATIVE EXAMINATIONS:

The condition of the containment liner base material will be verified by a visual examination prior to the application of new paint or coatings as required by the AmerGen Operational Quality Assurance Plan. If degradation is identified, additional measures will be applied to determine if the containment boundary has been affected. Repairs to the primary containment boundary, if required, will be conducted in accordance with ASME Section XI Code rules.

VI. JUSTIFICATION FOR GRANTING RELIEF:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i). Coating inspection and application programs in accordance with the AmerGen Operational Quality Assurance Plan provide an adequate level of quality and safety.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-5, "CONTAINMENT INSPECTIONS, SUCCESSIVE EXAMINATIONS AFTER REPAIR"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

All Class MC, Paragraphs IWE-2420(b) and IWE-2420(c) successive examination requirements for components found acceptable for continued service.

II. 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, "Acceptance Standards," 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, "Inspection Program A," or Paragraph IWE-2412, "Inspection Program B," in accordance with Table IWE-2500-1, Examination Category E-C.

III. REQUIREMENTS FOR WHICH RELIEF IS REQUESTED:

Relief is requested from the requirement of Paragraphs IWE-2420(b) and IWE-2420(c) to perform successive examination of repairs.

IV. BASIS FOR REQUESTING RELIEF:

10 CFR 50.55a was amended, as cited 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, "Verification of Acceptability," 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, successive examinations are not warranted. 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 SECY 96-080, "Issuance of Final Amendment to 10 CFR Section 50.55a to Incorporate by Reference the ASME Boiler and Pressure Vessel Code (ASME Code), Section XI, Division 1, Subsection IWE and Subsection IWL," dated April 17, 1996, the response to comment # 3.3 states: "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."

V. 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.

VI. JUSTIFICATION FOR GRANTING RELIEF:

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

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-6, "CONTAINMENT INSPECTIONS, BOLT TORQUE OR TENSION TESTING"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

Class MC pressure retaining bolting.

II. CODE REQUIREMENTS:

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item 8.20.

III. REQUIREMENTS FOR WHICH RELIEF IS REQUESTED:

Relief is requested from ASME Section XI, 1992 Edition, 1992 Addenda, Table IWE-2500-1 Examination Category E-G, Pressure Retaining Bolting, Item 8.20. Tables IWE-2500-1 requires a bolt torque or tension test on bolted connections that have not been disassembled and reassembled during the inspection interval.

IV. BASIS FOR REQUESTING RELIEF:

10 CFR 50.55a was amended, as cited 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. 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 un-torqued and then re-torqued or re-tensioned.

Each containment penetration receives a 10 CFR 50 Appendix J, Type B test in accordance with the specified testing frequencies. As noted in 10 CFR 50 Appendix J, the purpose of Type B tests is to measure leakage of containment penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies. 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. Appendix J testing and visual inspection is adequate to demonstrate that the design function is met. Torque or tension testing is not required for any other ASME Section XI, Class 1, 2, or 3 bolted connections or their supports as part of the inservice inspection program.

V. 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, and
- (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.

VI. JUSTIFICATION FOR GRANTING RELIEF:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii) in that de-torquing and subsequent re-torquing of bolted connections which are verified not to experience unacceptable leakage through 10 CFR 50, Appendix J, Type B testing results in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The current configuration of the TMI Unit 1 containment does not incorporate any pressure unseating bolting for all piping and electrical penetrations. Only the Equipment Hatch has pressure unseating bolting and this bolting receives a 100% VT-1 examination of all accessible surfaces whenever the Equipment Hatch is removed and periodically scheduled leak testing. Where bolting is used in the makeup of a pressure seal on the outward side of a piping penetration, it is accompanied with a seal on the inward side of containment.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections performed during the TMI Unit 1 Cycle 13 Refueling Outage which ended in October 1999. AmerGen Energy requests NRC approval by August 2000.

RELIEF REQUEST RR-7, "CONTAINMENT INSPECTIONS, VISUAL EXAMINATIONS OF CONCRETE COMPONENTS"

I. SYSTEM/COMPONENTS FOR WHICH RELIEF IS REQUESTED:

All components subject to the rules and requirements for Inservice Inspection of Class CC Concrete Components, Examination Category L-A, Concrete, Items L1.11 as applicable to IWL-2310, Visual Examination and Personnel Qualification and IWA 2210, Visual Examinations.

II. 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.

III. REQUIREMENT FOR WHICH RELIEF IS REQUESTED:

Relief is requested from performing the code specified VT-1C and VT-3C illumination and distance requirements of IWL-2310 (a) and (b) along with IWA-2210 and table IWA-2210-1 Visual Examination of concrete surfaces, which establish required minimum illumination values (50 foot candles) and maximum direct viewing distances (2 feet and 4 feet for the VT-1C and VT-3C respectively).

IV. BASIS FOR REQUESTING RELIEF:

In accordance with 10 CFR 50.55a(a)(3)(ii) relief is requested for TMI Unit 1 Nuclear Generating Station on the basis that compliance with the specified requirements would result in hardship and unusual difficulty without compensating increase in the level of quality and safety.

10 CFR 50.55a was amended in the Federal Register (61FR41303) 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 Addenda, Section XI, for the minimum illumination and maximum direct examination distance of Class CC components, specifically for the examination of concrete under paragraph IWL-2510. Accessibility to higher portions of the containment building is required thereby making it a hardship to obtain the minimum illumination and the maximum direct examination distance requirements.

The installation of temporary access equipment and high reach apparatuses would be necessary. This equipment would only provide limited access to the examination surfaces due to the geometry of the containment structure itself, but interferences would be encountered from the containment's structural design and mechanical/electrical equipment. The installation, use and removal of this equipment would increase personnel safety risk and personnel radiation exposure (for examination of the containment exterior surfaces within the Auxiliary and Fuel Handling Buildings) in order to meet paragraph IWA-2210 requirements.

V. ALTERNATIVE EXAMINATIONS:

The use of 10 CFR 50.55a(b)(2)(x)(B) applicable to IWE, which states that: "when performing remotely the visual examinations required by Subsection IWE, 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." Visual examination techniques used to perform the visual examination of Class CC Concrete Components, Examination Category L-A, Concrete, Items L1.11 as applicable to IWL-2310, Visual Examination and Personnel Qualification and IWA 2210, Visual Examinations, shall be qualified as permitted by 10 CFR 50.55a(b)(2)(x)(B) for components subject to examination in accordance with Subsection IWE.

VI. JUSTIFICATION FOR GRANTING RELIEF:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii). Visual examination techniques of the Subsection IWL components (the outer containment surfaces), qualified as has been permitted by 10 CFR 50.55a(b)(2)(x)(B) for the Subsection IWE components, provide an adequate level of quality and safety.

VII. IMPLEMENTATION SCHEDULE:

This request applies to the inspections of the containment exterior which were completed in December 1999. AmerGen Energy requests NRC approval by August 2000.