North Atlantic

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The Northeast Utilities System

April 25, 2000

Docket No. 50-443

AR# 00003995

NYN-00031

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Seabrook Station
"Primary Containment Inservice Inspection Program Relief Requests"

As permitted by recent rulemaking (64 FR 51370) dated September 22, 1999, North Atlantic Energy Service Corporation (North Atlantic) has developed its Containment Inservice Inspection (C-ISI) Program in accordance with Subsections IWE and IWL of Section XI of the 1995 Edition (including the 1996 Addenda) of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

During the development of the C-ISI program, North Atlantic has determined that relief from certain ASME Code requirements is necessary. North Atlantic has provided in Enclosure 1, six relief requests associated with the C-ISI program that require Nuclear Regulatory Commission (NRC) review and approval. These relief requests are identified as CCR-1, CCR-2, CCR-3, CCR-4, CCR-5 and CCR-6 and are similar to the generic relief requests contained in the EPRI GC-110698 "Containment Inspection Program Guide (ASME Section XI, Subsections IWE & IWL)."

NRC review and approval of the subject relief requests is requested by October 1, 2000 to support containment inspection activities that are planned during the upcoming refueling outage that is scheduled to begin in October 2000.

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Should you have any questions regarding this letter, please contact Mr. James M. Peschel, Manager - Regulatory Programs, at (603) 773-7194.

Very truly yours,

NORTH ATLANTIC ENERGY SERVICE CORP.

Ted C. Feigenbaum
Executive Vice President
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cc: H. J. Miller, NRC Regional Administrator
R.M. Pulsifer, NRC Project Manager, Project Directorate 1-2
R. K. Lorson, NRC Senior Resident Inspector

ENCLOSURE 1 TO NYN-00031

Relief Request No. CRR-1

Subject: Examination Requirements for Class MC Seals and Gaskets

Components for which Relief is Requested:

This request is applicable to seals and gaskets of ASME Code Class MC components.

ASME Code Class: MC

Examination Category: E-D, Item Nos. E5.10 Seals and E5.20 Gaskets

Code Requirement for which Relief is Requested:

ASME Section XI, 1995 Edition, 1996 Addenda, IWE-2500 and Table IWE-2500-1 require seals and gaskets on airlocks, hatches, and other devices to be visually examined (VT-3) once each interval. Note 1 of the subject table identifies that examinations shall include seals and gaskets on airlocks, hatches, and other devices that are required to assure leak-tight integrity. It is additionally identified that sealed or gasketed connections need not be disassembled solely for performance of examinations.

Basis and Justification for the Granting of Relief:

In accordance with 10CFR50.55a(a)(3)(i), relief is requested from the Code requirements to perform visual examinations of Class MC seals and gaskets. This relief is requested on the basis that the proposed alternative to test the subject components in accordance with the requirements of 10 CFR 50, Appendix J only will provide an acceptable level of quality and safety.

Seals and gaskets receive a Type B local leakage rate test as required by 10CFR50, Appendix J. As noted in 10CFR50, Appendix J, the purpose is to measure leakage of containment penetrations whose design incorporates resilient seals, gaskets, sealant compounds, piping penetrations fitted with expansion bellows, and electrical penetrations fitted with flexible metal seal assemblies. Since the Type B test will assure the leak-tight integrity of the connection, the performance of a visual examination once each interval would not increase the level of quality or safety.

Seals and gaskets are not included in the definition of pressure-retaining material in current Code rules (1998 Edition of Section III (NE-2110(b) of the ASME Boiler and Pressure Vessel Code). When the airlocks and hatches containing these materials are tested in accordance with 10CFR50, Appendix J, degradation of the seal or gasket material is revealed by an increase in the leakage rate. In this case, corrective measures would be applied and the component retested. Furthermore, seals and gaskets are specifically excluded from Code rules for Repair and Replacement in IWA-4120(b)(5) (1995 Edition, including 1996 Addenda). Additionally, the requirement to examine seals and gaskets does not appear in the 1998 Edition of ASME Section XI.

Alternative Examination:

Seals and gaskets will be tested in accordance with 10CFR50, Appendix J only.

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.

Relief Request No. CRR-2

Subject: Torque or Tension Test Requirements for Class MC Bolted Connections

Components for which Relief is Requested:

This request is applicable to pressure-retaining bolted connections of ASME Code Class MC components.

ASME Code Class: MC

Examination Category: E-G, Item No. E8.20 Bolted Connections

Code Requirement for which Relief is Requested:

IWE-2500, Table IWE-2500-1 requires bolt torque-tension tests to be performed on 100% of the bolts when the connection has not been disassembled and reassembled during the interval.

Basis and Justification for the Granting of Relief:

Pursuant to 10CFR50.55a(a)(3)(ii), relief is requested from the Code requirements stated above on the basis that compliance with this requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality or safety.

10CFR50.55a was amended in the Federal Register (64 FR 51370) on September 22, 1999 to permit the use of the 1995 Edition, 1996 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. Similarly, the Seabrook Station containment does not contain pressure-unseating penetrations.

Determination of the torque or tension value would require that the bolting be untorqued and then re-torqued or re-tensioned. The performance of the 10CFR50, Appendix J, 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 relevant 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.

An in-situ test of an undisturbed connection would not be meaningful. If paint or corrosion were discovered on the bolted connection, it may result in a higher indicated torque and may not be representative of the preload on the connection.

Testing the bolted penetrations in accordance with 10CFR50, Appendix J provides adequate assurance of the leak-tight integrity of the bolted penetrations. Additionally, the requirement for torque-tension testing of containment bolting does not appear in the 1998 Edition of Section XI, Subsection IWE.

Alternative Examination:

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

1) Exposed surface of bolted connections shall be visually examined in accordance with the requirements of Table IWE-2500-1, Examination Category E-G, Pressure-Retaining Bolting, Item 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 10CFR50.55a(b)(2)(ix)(E).

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.

Relief Request No. CRR-3

Subject: Successive Inspection Requirements for Class MC Repair/Replacements, IWE-2420(b) and IWE-2420(c)

Components for which Relief is Requested:

This request is applicable to repair/replacements of ASME Code Class MC components.

ASME Code Class: MC

Examination Category: Not Applicable

Code Requirement for which Relief is Requested:

ASME Section XI, 1995 Edition, 1996 Addenda, IWE-2420 (b) states, "When examination results require evaluation of flaws or areas of degradation in accordance with IWE-3000, and the component is acceptable for continued service or when the examinations result in performance of a repair/replacement activity, the areas containing such flaws or areas of degradation, or areas subjected to a repair/replacement activity, shall be re-examined during the next inspection period listed in the schedule of the inspection program of IWE-2411 or IWE-2412, in accordance with Table IWE-2500-1, Examination Category E-C."

IWE-2420(c) further requires that this augmented reexamination continue for at least three consecutive inspection periods.

Basis and Justification for the Granting of Relief:

Pursuant to 10CFR50.55a(a)(3)(ii), relief is requested from the Code requirements stated above (as they apply to repair/replacement activities) on the basis that compliance with this requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality or safety.

The purpose of a repair/replacement is to restore the component to an acceptable condition for continued service in accordance with the acceptance standards of IWE-3000. IWA-4160 requires the Owner to conduct an evaluation of the suitability of the repair/replacement including consideration of the cause of failure. This requirement for successive examination presupposes that the repair/replacement was not suitable. If the repair/replacement has restored the component to an acceptable condition, successive examinations are not

warranted. If the repair/replacement was not suitable, then the repair/replacement does not meet Code requirements and the component is not acceptable for continued service. Neither IWB-2420(b), IWC-2420(b), nor IWD-2420(b) require a repair/replacement to be subject to successive examination requirements for ASME Class 1, 2, or 3 components respectively. The successive examination of repair/replacements in accordance with IWE-2420(b) and IWE-2420(c) constitutes a burden without a compensating increase in quality or safety.

In SECY 96-080, Part II, response to Comment 3.3 regarding IWE-2420, the NRC stated, "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 [Containment Surfaces Requiring Augmented Examination] component ... If the component had been repaired or replaced, then more frequent examination would not be needed."

The requirement for reexamination of repair/replacements was removed from IWE-2420(b) and (c) in the 1998 Edition of ASME Section XI.

Alternative Examination:

None. Relief is sought only from the requirement to reexamine areas that have undergone repair/replacement activities.

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.

Relief Request No. CRR-4

Subject: Illumination and Examination Distance Requirements for Class CC Components

Components for which Relief is Requested:

This request is applicable to the illumination and examination distance requirements for remote inspection of ASME Code Class CC concrete components

ASME Code Class: CC

Examination Category: L-A, Item No. L1.11 All Areas and L1.12 Suspect Areas

Code Requirement for which Relief is Requested:

ASME Section XI, 1995 Edition, 1996 Addenda, Subsection IWL-2310 requires specific minimum illumination levels and maximum direct examination distances for the VT-1C and VT-3C examinations of concrete surfaces as outlined in IWA-2210.

Basis and Justification for the Granting of Relief:

Relief is requested from the requirements of Table IWL-2310 pursuant to the requirements of 10CFR50.55a(a)(3)(i) on the basis that the proposed alternative would provide an acceptable level of quality and safety.

10CFR50.55a was amended in the Federal Register on September 22, 1999 to permit the use of the ASME B&PV Code Section, XI, 1995 Edition, 1996 Addenda when performing containment examinations. Subsections IWL-2310 (a) and IWL-2310(b) require that VT-1C and VT-3C examinations be performed utilizing the lighting and distance requirements outlined in IWA-2210 and Table IWA-2210-1 of the Code. For examinations performed under Subsection IWE, NRC regulations (10CFR50.55a(b)(2)(ix)(B)) permit an increase in maximum distance and a decrease in minimum allowable illumination requirements of Table IWA-2210-1 provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

Inspecting the concrete surfaces using increased distances and decreased illumination, when approved by the Responsible Engineer and demonstrated to the satisfaction of the Authorized

Nuclear Inservice Inspector, will allow the detection of flaws of a size sufficient to distinguish a structural problem with the concrete. The requirements for illumination and distance outlined in IWA-2210 and Table IWA-2210 were originally specified to detect flaws on metal surfaces. Flaw detection on metal surfaces requires the ability to resolve much smaller indications than those required on concrete due to the small grain size of metal in comparison to poured concrete.

Additionally, the reference to IWA for examination distance, illumination, and resolution has been removed from the 1998 Edition of ASME Subsection IWL. The term VT-1C examination has been replaced by "Detailed Visual Examination," and VT-3C examination has been replaced by "General Visual Examination." The General Visual Examination of a concrete surface is performed under the direction of the Responsible Engineer to indicate the general structural condition of the containment. If any deterioration or distress is detected in the performance of the General Visual Examination, the Detailed Visual Examination is performed under the direction of the Responsible Engineer to determine the magnitude and extent of the deterioration.

Alternative Examination:

When performing remote visual examinations, 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.

The Responsible Engineer will use a combination of character and workmanship based samples to determine the resolution required ensuring that indications of interest are detectable. The Responsible Engineer will also identify the minimum size for indications of interest. Additionally, the procedure and equipment to be used will be demonstrated capable of resolving these minimum indications to the satisfaction of the Responsible Engineer and the Authorized Nuclear Inservice Inspector. The record of demonstration will be available to the regulatory authorities.

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.

Relief Request No. CRR-5

Subject: Visual Examination Prior to Removal of Class MC Coatings, IWE-2500(b)

Components for which Relief is Requested:

This request is applicable to ASME Code Class MC components with coatings.

ASME Code Class: MC

Examination Category: Not Applicable

Code Requirement for which Relief is Requested:

ASME Section XI, 1995 Edition, 1996 Addenda, 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.

Basis and Justification for the Granting of Relief:

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested from the Code requirements stated above on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Paint and coatings are not part of the containment pressure boundary under current Code rules as they are not associated with the pressure-retaining function of the component (Ref. ASME Section III, Paragraph NE-2110(b), 1998 Edition). The interior of containment is painted to prevent rusting and to facilitate decontamination. Neither paint nor coatings contribute to the structural integrity or leak tightness of the containment. Additionally, the paint and coatings on the containment pressure boundary were not subject 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-4120(b)(5).

Degradation or discoloration of the paint or coating materials on containment may be an indicator of potential degradation of the containment pressure boundary. Additional measures would have to be employed to determine the nature and extent of any degradation, if present.

The application of ASME Section XI rules for removal of paint or coatings when unrelated to an ASME Section XI repair or replacement activity, provides no material benefit.

The 1998 Edition of ASME Section XI does not include the requirement to inspect coatings prior to their removal.

Alternative Examination:

The condition of the containment vessel base material will be verified prior to the application of new paint or coating as required by the station coating procedure. If degradation is identified, additional measures will be applied to determine if the containment pressure boundary is affected. Repairs to the primary containment boundary, if required, will be conducted in accordance with ASME Section XI Code rules.

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.

Relief Request No. CRR-6

Subject: Preservice Examination of Reapplied Class MC Coatings, IWE-2200(g)

Components for which Relief is Requested:

This request is applicable to ASME Code Class MC components with coatings.

ASME Code Class: MC

Examination Category: Not Applicable

Code Requirement for which Relief is Requested:

ASME Section XI, 1995 Edition, 1996 Addenda, 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.

Basis and Justification for the Granting of Relief:

Pursuant to 10CFR50.55a(a)(3)(i), relief is requested from the Code requirements stated above on the basis that the proposed alternative would provide an acceptable level of quality and safety.

Paint and coatings are not part of the containment pressure boundary under current Code rules. Because they are not associated with the pressure-retaining function of the component, neither paint nor coatings contribute to the structural integrity or leak tightness of the containment (Ref. ASME Section III, NE-2110(b), 1998 Edition). Furthermore, the paint and coatings on the containment pressure boundary were not subject to Code rules when they were originally applied and are not subject to ASME XI rules for repair or replacement in accordance with IWA-4120(b)(5). The adequacy of applied coatings is verified periodically during 10 CFR 50.65 Maintenance Rule inspections. Recording the condition of reapplied coating in the preservice record does not substantiate the containment structural integrity. Should deterioration of the coating in the reapplied area occur, the area would require additional evaluation regardless of the preservice record. Recording the condition of new paint or coatings in the preservice records does not increase the level of quality and safety of the containment.

SECY 96-080, Part II, response to Comment 3.2 about IWE-2200(g) states, "In the NRC's opinion, this does not mean that a visual examination must be performed with every application of paint or coating. A visual examination of the topcoat to determine the soundness and the condition of the topcoat should be sufficient." This is currently accomplished in accordance with the 10 CFR 50.65 Maintenance Rule inspections of the primary containment.

The 1998 Edition of ASME Section XI does not include the requirement to perform a preservice examination when paint or coatings are reapplied.

Alternative Examination:

The paint or coatings in the containment will be examined in accordance with the 10 CFR 50.65 Maintenance Rule inspections of the primary containment. If degradation of the coating is identified, additional measures will be applied to determine if the containment pressure boundary is affected. Although repairs to paint or coatings are not subject to the Repair/Replacement rules of ASME XI (Interpretations Volume 42, XI-1-98-14, Question No. 2), repairs to the primary containment boundary, if required, would be conducted in accordance with ASME Section XI Code rules.

Relief Request Applicability:

This Relief Request is applicable to the First Ten-Year Containment ISI Interval.