



**North
Atlantic**

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The Northeast Utilities System

May 19, 2000

Docket No. 50-443

CR# 00-06121

NYN-00036

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

Seabrook Station
"Inservice Inspection Program Alternative Requests"

North Atlantic Energy Service Corporation (North Atlantic) is in the process of developing the Second Ten-Year Interval Inservice Inspection (ISI) program in accordance with Section XI of the 1995 Edition (including the 1996 Addenda) of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.

As a result of a review associated with the update of the ISI program, North Atlantic has determined that relief from certain ASME Code requirements is necessary. North Atlantic has provided in Enclosure 1, two alternative requests (2AR-01 and 2AR-02). 2AR-01 requests Nuclear Regulatory Commission (NRC) approval to utilize ASME Code Case N-533 "Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections" as an alternative to the requirements of IWA-5242(a) for Class 1 bolted connections in systems borated for the purpose of controlling reactivity. 2AR-02 requests NRC approval for relief from the requirements of IWA-5242(a) for Class 2 bolted connections in systems borated for the purpose of controlling reactivity.

The NRC has evaluated and approved alternative requests similar to 2AR-01 for Shearon Harris Unit 1 (dated November 4, 1998 TAC No. MA0989), Turkey Point Units 3 and 4 (dated March 26, 1997 TAC Nos. M98149 and M98150), and Diablo Canyon Units 1 and 2 (dated May 23, 1997 TAC Nos. M95068 and M95069). The NRC has evaluated and approved alternative requests similar to 2AR-02 for Shearon Harris Unit 1 (dated November 1, 1999 TAC No. MA4634) and for the H.B. Robinson Steam Electric Plant (dated August 19, 1999 TAC No. MA4634).

RGU-001

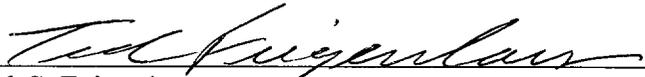
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NRC review and approval of 2AR-01 and 2AR-02 are requested by October 1, 2000 to support ISI program activities that are planned during the upcoming refueling outage that is scheduled to begin in October 2000.

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
and Chief Nuclear Officer

cc: H. J. Miller, NRC Regional Administrator
R.M. Pulsifer, NRC Project Manager, Project Directorate I-2
R. K. Lorson, NRC Senior Resident Inspector

ENCLOSURE 1 TO NYN-00036

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

Sheet 1 of 3

Alternative Request No. 2AR-01

Subject: Visual examination requirements for insulated Class 1 pressure retaining bolted connections in systems borated for the purpose of controlling reactivity.

Components for which the Alternative is Requested:

Insulated Class 1 pressure retaining bolted connections in systems borated for the purpose of controlling reactivity.

ASME Code Class: 1

Examination Category: B-P,

Code Requirement for which Alternative is Requested:

IWA-5242(a) of the 1995 Edition (including 1996 Addenda) requires that the insulation be removed from pressure retaining bolted connections for VT-2 visual examinations for components in systems borated for the purpose of controlling reactivity.

Basis and Justification for Granting the Alternative:

North Atlantic requests to implement ASME Code Case N-533 "Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections" as an alternative to the requirements of IWA-5242(a) for the visual examination of Class 1 insulated pressure-retaining bolted connections. The utilization of ASME Code Case N-533 is requested on the basis that compliance with the requirements of IWA-5242(a) for Class 1 insulated pressure-retaining bolted connections would result in a hardship without a compensating increase in the level of quality and safety.

As prescribed in Table IWB-2500-1, Examination Category B-P, a system leakage test is required to be performed on Class 1 components at the completion of each refueling outage (typically in the Hot Standby mode of operation) at nominal operating pressure and elevated temperature conditions. During this test, VT-2 visual examinations are performed to detect evidence of leakage.

IWA-5242(a) requires that, for systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure-retaining bolted connections for VT-2 visual examination. The requirements of IWA-5242(a) place a hardship on the plant for the following reasons:

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

Sheet 2 of 3

Alternative Request No. 2AR-01

1. Personnel would be required to enter the primary containment to erect scaffolding, remove thermal insulation, re-install the removed insulation and remove the associated scaffolding. This is expected to be a time consuming activity that could significantly impact the re-start of the plant.
2. Entries into the primary containment in order to erect scaffolding, remove thermal insulation, re-install the removed insulation and remove the associated scaffolding with the plant at the nominal operating pressure and elevated temperature would unnecessarily subject personnel to adverse heat stress conditions and increase their radiation exposure.
3. When bolted connections are examined with the insulation removed in the Hot Standby condition, inspection personnel will be exposed to extreme heat and potentially hazardous conditions.

The purpose of removing insulation from pressure retaining bolting for visual examination is to inspect for evidence of borated water leakage that could cause corrosion of the bolting. Due to the residue of boron crystals that remain where borated water leakage occurs, it is not necessary to visually see actual fluid leakage.

The use of Code Case N-533 provides a two-phased approach for ensuring the leak tight integrity of Class 1 bolted connections. Any significant leakage will be detected during the Code required system leakage test with the insulation in place. Minor leakage will be detected during the VT-2 examination performed during each outage.

Based upon the frequency of the examinations proposed, the integrity of Class 1 pressure retaining bolted connections will be verified at the same frequency required by the Code. Additionally, no changes will be made to the areas that are inspected, the inspection criteria, or the qualifications of VT-2 inspection personnel.

Therefore, the removal of insulation at nominal operating pressure and elevated temperature conditions to perform a VT-2 examination will result in a hardship without a compensating increase in the level of quality and safety.

Alternative Examinations:

North Atlantic will implement ASME Code Case N-533 as an alternative to the requirements of IWA-5242(a). The requirements of Code Case N-533 include the following:

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

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Alternative Request No. 2AR-01

1. A system pressure (leakage) test and VT-2 examination (without the removal of insulation) will be performed at operating pressure prior to plant startup following each refueling outage.

2. A VT-2 examination of pressure retaining bolted connections will be performed each refueling outage with the insulation removed. The connections are not required to be pressurized. Any evidence of leakage will be evaluated in accordance with IWA-5250.

Relief Request Applicability:

This Relief Request is applicable for the Second Ten-Year ISI Interval.

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

Sheet 1 of 3

Alternative Request No. 2AR-02

Subject: Visual examination requirements for insulated Class 2 bolted connections in systems borated for the purpose of controlling reactivity.

Components for which the Alternative is Requested:

Insulated Class 2 pressure retaining bolted connections in systems borated for the purpose of controlling reactivity.

ASME Code Class: 2

Examination Category: C-H

Code Requirement for which Alternative is Requested:

IWA-5242(a) of the 1995 Edition (including 1996 Addenda) requires that the insulation be removed from pressure retaining bolted connections for VT-2 visual examinations for components in systems borated for the purpose of controlling reactivity.

Basis and Justification for Granting the Alternative:

North Atlantic requests to implement an alternative to the requirements of IWA-5242(a) for the visual examination of Class 2 insulated pressure-retaining bolted connections. The use of the proposed alternative is requested on the basis that compliance with the requirements of IWA-5242(a) for Class 2 insulated pressure-retaining bolted connections would result in a hardship without a compensating increase in the level of quality and safety.

As prescribed in Table IWC-2500-1, Examination Category CH, a system leakage test is required to be performed for Class 2 components each inspection period. As outlined in Note (1) of the subject table, a VT-2 examination is required to be performed in accordance with IWA-5242(a). During this test, VT-2 visual examinations are performed to detect evidence of leakage.

IWA-5242(a) requires that, for systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure-retaining bolted connections for VT-2 visual examination. The requirements of IWA-5242(a) place a hardship on the plant for the following reasons:

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

Sheet 2 of 3

Alternative Request No. 2AR-02

1. Personnel may be required to enter the primary containment to erect scaffolding, remove thermal insulation, re-install the removed insulation and remove the associated scaffolding. This is expected to be a time consuming activity that could significantly impact the re-start of the plant.
2. Entries into the primary containment in order to erect scaffolding, remove thermal insulation, re-install the removed insulation and remove the associated scaffolding with the systems at nominal operating pressure and elevated temperature would unnecessarily expose personnel to adverse heat stress conditions and increase their radiation exposure.
3. When bolted connections are examined with the insulation removed, inspection personnel may be exposed to extreme heat and potentially hazardous conditions.

The purpose of removing insulation from pressure retaining bolting for visual examination is to inspect for evidence of borated water leakage that could cause corrosion of the bolting. Due to the residue of boron crystals that remain where borated water leakage occurs, it is not necessary to visually see actual fluid leakage.

Additionally, the proposed alternative is consistent with the alternative examination requirements approved by the ASME Code committee to ensure the leak-tight integrity of Class 1 bolted connections in Code Case N-533 "Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections, Section XI, Division 1." The proposed alternative examination provides a two-phased approach for ensuring the integrity of Class 2 bolted connections. Any significant leakage will be detected during the Code required system leakage test with the insulation in place. Minor leakage will be detected during the VT-2 examination performed during each outage.

Based upon the frequency of the proposed examinations, the integrity of Class 2 pressure retaining bolted connections will be verified at the same frequency required by the Code. Additionally, no changes will be made to the areas that are inspected, the inspection criteria, or the qualifications of VT-2 examination personnel.

Therefore, the removal of insulation at nominal operating pressure and elevated temperature conditions to perform a VT-2 examination will result in a hardship without a compensating increase in the level of quality and safety.

Alternative Examinations:

North Atlantic will implement the following as an alternative to the requirements of IWA-5242(a):

Seabrook Nuclear Power Station Unit No. 1
Alternative To Inservice Inspection Requirements

Sheet 3 of 3

Alternative Request No. 2AR-02

1. A system leakage test and VT-2 examination at operating pressure will be performed (without the removal of insulation) during each inspection period at the conditions specified in IWC-5221.
2. A VT-2 examination of pressure retaining bolted connections will be performed during each inspection period with the insulation removed. The connections are not required to be pressurized. Any evidence of leakage will be evaluated in accordance with IWA-5250.

Relief Request Applicability:

This Relief Request is applicable for the Second Ten-Year ISI Interval.