

August 30, 2000

Mr. Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer
North Atlantic Energy Service Corporation
c/o Mr. James M. Peschel
P.O. Box 300
Seabrook, NH 03874

SUBJECT: SEABROOK STATION, UNIT NO. 1 - INSERVICE INSPECTION PROGRAM
SECOND INTERVAL RELIEF REQUESTS (TAC NO. MA8475)

Dear Mr. Feigenbaum:

By letter dated May 6, 2000, North Atlantic Energy Service Corporation (the licensee) submitted relief requests concerning proposed alternatives to the American Society of Mechanical Engineer's (ASME) Code, Section XI, Inservice Inspection (ISI) requirements for the second 10-year interval for Seabrook Station, Unit No. 1. The licensee requested approval to implement the 1995 Edition (including the 1996 Addenda) of the ASME Code, Section XI in lieu of the 1989 Edition for the second ISI interval which is scheduled to commence in August 2000, and to delay the implementation of certain aspects of the second interval ISI program for 2 years while preparing an alternative piping ISI program based on a risk-informed approach.

The staff's safety evaluation authorizing the requested alternatives is enclosed. The requests were reviewed against the requirements of the ASME Code, Section XI, for Class 1, 2, and 3 components, 10 CFR 50.55a(g)(4)(iv), and 10 CFR 50.55a(a)(3)(i).

The licensee's requests are approved and authorized pursuant to 10 CFR 50.55a(g)(4)(iv) and 10 CFR 50.55a(a)(3)(i), respectively for the second 10-year interval. The enclosed safety evaluation finds the use of the 1995 Edition (including the 1996 Addenda) of the ASME Code, Section XI, and a 2-year deferral of non-destructive examinations for certain Class 1 piping during the second interval ISI program to be acceptable.

T. Feigenbaum

- 2 -

The NRC staff's evaluation and conclusions are contained in the enclosure. Contact the NRC Project Manager, Robert M. Pulsifer, at (301) 415-3016 if there are any questions. This completes the staff's effort on TAC No. MA8475.

Sincerely,

/RA/

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-443

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SECOND 10-YEAR INTERVAL INSERVICE INSPECTION

REQUESTS FOR RELIEF

NORTH ATLANTIC ENERGY SERVICE CORPORATION

SEABROOK STATION, UNIT NO. 1

DOCKET NUMBER 50-443

1.0 INTRODUCTION

Inservice inspection (ISI) of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code) and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

By letter (NYN-00014) dated March 6, 2000, the licensee, North Atlantic Energy Service Corporation (North Atlantic) requested approval to use the 1995 Edition (including the 1996 Addenda) of the ASME Code, Section XI, in lieu of the 1989 Edition for the second 10-year ISI interval which is scheduled to commence on August 18, 2000, and to delay submission and implementation of a revised ISI program for certain Class 1 piping for the second interval for 2 years while preparing an alternative ISI program for Class 1 piping only, based on a risk-informed approach. The Nuclear Regulatory Commission (NRC) staff reviewed and evaluated the licensee's requests pursuant to 10 CFR 50.55a(g)(4)(iv) and 10 CFR 50.55a(a)(3)(i).

2.0 EVALUATION

The information provided by the licensee in support of the proposed alternative contained in the letter has been evaluated, and the bases for disposition are documented below.

2.1 Alternative Request 00-01, pertaining to edition of ASME Code for the second ISI interval

2.1.1 Code Requirement

For Seabrook Station Unit No. 1 (Seabrook Unit 1) the applicable edition of Section XI of the ASME Code for the first 10-year ISI interval, which is scheduled to end on August 18, 2000, is the 1983 Edition. Pursuant to 10 CFR 50.55a(g)(4)(ii), Seabrook Unit 1 should update its ISI program to the requirements of the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of its subsequent 120-month inspection interval. In the case of Seabrook Unit 1, the applicable edition of the code, which its second 10-year ISI program should reflect, is the 1989 Edition.

2.1.2 Licensee's Proposed Alternative Examination (as stated)

"North Atlantic requests to utilize the 1995 Edition (including the 1996 Addenda) of Section XI in its entirety, subject to the limitations and modifications listed in Paragraph (b)(2) of 10 CFR 50.55a in lieu of the 1989 Edition (no Addenda) of Section XI for ISI program activities."

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

"North Atlantic proposes to utilize the subject edition and addenda of Section XI primarily to reduce its administrative burden by performing ISI, Containment ISI, and repair and replacement activities to the same edition and addenda of the ASME Code. The requirements of 10 CFR 50.55a(b)(2)(vi) were recently revised (64 FR 51370 effective November 22, 1999) for Containment ISI activities to permit licensees to utilize the 1995 Edition (including the 1996 Addenda) as modified and supplemented by the requirements in 10 CFR 50.55a(b)(2)(viii) and 10 CFR 50.55a(b)(2)(ix). Additionally, the rule change referenced in 64 FR 51370 also requires expedited implementation of mandatory Appendix VIII "Performance Demonstration for Ultrasonic Examination Systems" to the 1995 Edition (including the 1996 Addenda) of Section XI."

"Since the 1995 Edition (including the 1996 Addenda) was recognized as the latest edition and addenda incorporated by reference for ISI paragraph (b)(2) as a result of the rule change referenced in 64 FR 51370 and will be required for general use by licensees whose revised ISI programs begin a successive interval on or after November 22, 2000, North Atlantic requests NRC approval for its use pursuant to the requirements of 10 CFR 50.55a(g)(4)(iv)."

2.1.4 Staff Evaluation

The NRC staff has reviewed Alternative Request 00-01 submitted in the licensee's letter dated March 6, 2000, for the second 10-year ISI interval for Seabrook Unit 1. The intent of North Atlantic's request is to base its ISI program on the latest edition of the ASME Code, Section XI incorporated by reference in 10 CFR 50.55a. According to the licensee, the second 10-year ISI interval for Unit 1 is to begin on August 18, 2000. The licensee proposed for Unit 1 to utilize the 1995 Edition (including 1996 Addenda) of the ASME Code which has been incorporated by reference into the regulations on September 22, 1999 (64 FR 51370), in lieu of the 1989 Edition as required by 10 CFR 50.55a(g)(4)(ii).

North Atlantic indicates that Seabrook Unit 1 will implement Section XI of the 1995 Edition (including 1996 Addenda) of the ASME Code in its entirety subject to the limitations and

modifications listed in paragraph (b)(2) of 10 CFR 50.55a, including implementation of the requirements of Appendix VIII of the ASME Code, Section XI. As stated in 10 CFR 50.55a(g)(4)(iv), ISI of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda. On this basis, the licensee's request is approved for Class 1, 2, and 3 components, containment ISI, and repair and replacement.

2.2 Alternative Request 00-02, pertaining to 2-year delay in submission of revised ISI program for Class 1 piping for the second ISI interval

2.2.1 Code Requirement

Seabrook Unit 1 is scheduled to commence its second 10-year ISI interval on August 18, 2000, and its ISI program will be revised for the second interval to meet 10 CFR 50.55a(g)(4)(ii) requirements. Title 10 of the Code Federal Regulations Section 50.55a(g)(4)(ii) states that inservice examination of components and system pressure tests conducted during successive 120-month inspection intervals must comply with the requirements of the latest edition and addenda of the ASME Code, Section XI, as approved by 10 CFR 50.55a(b)(2). In the case of Seabrook Unit 1, the applicable edition of the code which its second 10-year ISI program should reflect, as authorized by NRC in its evaluation of Alternative Request 00-01, is the 1995 Edition (including 1996 Addenda).

2.2.2 Licensee's Proposed Alternative Examination

North Atlantic is in the process of preparing a Risk-Informed Inservice Inspection (RI-ISI) program for a subset of ASME Class 1 piping welds, limited to Examination Categories B-F (dissimilar metal welds at nozzle of pressure vessel) and B-J (piping welds) only. North Atlantic's proposed alternative is to delay for 2 years, the submission and implementation of revised examination requirements for this limited portion of Class 1 piping required for the second interval ISI program.

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

"In order to reduce unnecessary radiation exposure to plant personnel and to more efficiently focus ISI program inspection activities, North Atlantic is in the process of preparing a Risk Informed Inservice Inspection (RI-ISI) program for the Second Ten-year Interval ISI program. The scope of the RI-ISI is limited to the inspection of ASME Class 1 piping (Examination Categories B-F and B-J). The RI-ISI program is being developed in accordance with EPRI Topical Report TR-112657 'Revised Risk-Informed Inservice Inspection Evaluation Procedure' as delineated in ASME Code Case N-578, 'Risk-Informed Requirements for Class 1, 2 and 3 Piping, Method B, Section XI, Division 1.' The development, review and subsequent approval of a RI-ISI program is a substantial effort that is expected to consume considerable North Atlantic and vendor resources. Due to time constraints needed to develop, review and obtain NRC approval of a RI-ISI program, North Atlantic requests a 2-year delay for submitting a revised ISI Program for Class 1 piping subject to inspection required by Table IWB-2500-1, Examination Categories B-F and B-J of the 1995 Edition (including the 1996 Addenda) of Section XI."

“The proposed alternative to delay submission of a revised ISI Program for Class 1 piping is requested pursuant to the requirements of 10 CFR 50.55a(a)(3)(i) on the basis that it provides an acceptable level of quality and safety and is consistent with the NRC staff position outlined in Information Notice 98-44, “Ten-Year Inservice Inspection (ISI) Program Update for Licensees that Intend to Implement Risk-Informed ISI of Piping.” The proposed 2-year delay for the submission of a revised ISI Program for Class 1 piping will also avoid the inspection of piping that is later found to be unnecessary from a risk perspective.”

“As a result of the 2-year delay, the non-destructive examinations (NDE) on the piping to be included in the RI-ISI program scope will be deferred until the RI-ISI program is approved. The remaining portions of the ISI program will be submitted as required by 10 CFR 50.55a(g)(4). During this 2-year delay period, the Code required pressure testing, repairs or replacements, and associated augmented programs will continue to be implemented as required. The examinations required for the second Ten-Year Interval RI-ISI program will be completed by the end of the interval, including any ASME Code extensions.”

In response to NRC’s inquiry, the licensee’s letter dated July 19, 2000, stated the following:

“The NRC questioned (based upon the timing of the submittal and the required NRC review period) whether North Atlantic would be prepared to complete the required percentage of inspections for the First Inspection Period of the Second Interval as required by Table IWB-2412-1 of the 1995 Edition (including 1996 Addenda) of Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code). North Atlantic responded to this inquiry by identifying that the proposed 2-year delay will not affect its ability to comply with the ASME Code required percentages in the First Inspection Period of the Second Interval.”

“Accordingly, North Atlantic will comply with the ASME Code required percentages for the First Inspection Period of the Second Interval for ASME Class 1 piping. The North Atlantic commitment associated with this letter is enclosed.”

2.2.4 Staff Evaluation

The NRC staff has reviewed Alternative Request 00-02 submitted in the licensee’s letter dated March 6, 2000, for the second 10-year ISI interval for Seabrook Unit 1. The intent of the licensee’s request is to delay for 2 years, the submission and implementation of revised examination requirements for certain Class 1 piping required for the second interval ISI program. NRC Information Notice (IN) 98-44 states that for licensees that intend to implement a risk-informed inservice inspection program for piping and follow the guidance provided in IN 98-44, the staff will consider authorizing a delay of up to 2 years in implementation of the ISI program for piping only.

The RI-ISI program that will be developed by North Atlantic will likely result in a substantial reduction in the required number of piping weld examinations. The licensee indicated that examination of the stated Class 1 piping will be deferred during the 2-year period until the RI-ISI program is approved by the NRC. Examination of this reduced number of Class 1 piping weld examinations will then be spread over the outages in the remaining years of the second interval. Furthermore, the licensee indicated that the pressure testing, repairs or replacements, and

interval. However, compliance with the ASME Code-required percentages of examination in the first period of the second ISI interval, will not be affected by the proposed 2-year delay. associated augmented inspection programs will continue to be implemented as required. The proposed alternative excludes any existing augmented examination program, and the existing ISI program for piping welds other than Class 1. This is in conformance with IN 98-44 that the performance of augmented examinations would be unaffected by staff approved delays in updating ISI programs to accommodate development of risk-informed ISI programs. On these bases, the staff has determined that the licensee's proposed alternative provides an acceptable level of quality and safety and is, therefore, authorized pursuant to 10 CFR 50.55a(a)(3)(i).

The RI-ISI program to be developed by the licensee will need to be reviewed by the NRC and will require NRC authorization prior to implementation since it is an alternative to the Code requirements.

This authorization is based on the understanding that the Code-required inspection percentages will be met for each inspection period. For this reason, the licensee is advised that the RI-ISI program needs to be submitted in sufficient time for the staff to compute its review prior to the last refueling outage in this period.

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Date: August 30, 2000

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