

March 24, 2000

Mr. S. E. Scace - Director  
Nuclear Oversight and Regulatory Affairs  
c/o Mr. David A. Smith  
Northeast Nuclear Energy Company  
P. O. Box 128  
Waterford, CT 06385-0128

SUBJECT: SAFETY EVALUATION OF RELIEF REQUEST RR-89-22 ASSOCIATED WITH  
ASME SECTION XI, CODE CASE N-532, MILLSTONE NUCLEAR POWER  
STATION, UNIT NO. 2 (TAC NO. MA6961)

Dear Mr. Scace:

By letter dated October 22, 1999, you requested permission to use an alternative to the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition, pursuant to the provisions of 10 CFR 50.55a(a)(3)(i). Specifically, you requested to utilize Code Case N-532, "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as required by IWA-4000, IWA-6000, Section XI, Division I," for the Millstone Unit 2 third 10-year interval inservice inspection (ISI) program plan.

The staff has reviewed your alternative proposed in relief request RR-89-22 and determined that the documentation requirement of Code Case N-532 would provide an acceptable level of quality and safety as compared to that of the 1989 Edition of the ASME Code, Section XI, Subsections IWA-4000 and IWA-6000. Therefore, the your proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the third 10-year ISI interval.

Our detailed evaluation and conclusions are documented in the enclosed safety evaluation.

Sincerely,

**/RA/**

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

Docket No. 50-336

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE THIRD 10-YEAR INSERVICE INSPECTION PROGRAM

RELIEF REQUEST NO. RR-89-22

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated October 22, 1999, Northeast Nuclear Energy Company (NNECO/licensee) requested permission to use an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 1989 Edition, pursuant to the provisions of 10 CFR 50.55a(a)(3)(i). Specifically, NNECO requested to utilize Code Case N-532, "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as required by IWA-4000, IWA-6000, Section XI, Division I," for the Millstone Unit 2 third 10-year interval inservice inspection (ISI) program plan.

2.0 BACKGROUND

The ISI of the ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel 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 Section 50.55a(a)(3) (10 CFR 50.55a(a)(3)) states in part 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.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests

conducted during the second 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Millstone Nuclear Power Station, Unit 2, during the third 10-year ISI interval is the 1989 Edition. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

The staff has reviewed and evaluated the licensee's requests and their supporting information as an alternative to the Code requirements, pursuant to 10 CFR 50.55a(a)(3)(i) for Millstone Unit 2 during the third 10-year ISI interval.

### 3.0 DISCUSSION (RELIEF REQUEST NO. RR-89-22)

CODE CASE N-532, "ALTERNATIVE REQUIREMENTS TO REPAIR AND REPLACEMENT DOCUMENTATION REQUIREMENTS AND INSERVICE SUMMARY REPORT PREPARATION AND SUBMISSION AS REQUIRED BY IWA-4000 AND IWA-6000,"

#### System/Component Applicable to Use of Code Case

ASME Code, Section XI, Class 1, 2, and 3 Components

#### Code Requirement

Section XI of the ASME B&PV Code, 1989 Edition, requires that an ISI Summary Report containing documentation of ISI and repair and replacement activities be submitted to the NRC within 90 days of the completion of ISI conducted during each refueling outage. Requirements for actual documentation submitted are contained in IWA-4000 and IWA-6000.

#### Code Relief Requested

Pursuant to the provisions of 10 CFR 50.55a(a)(3)(i), relief is requested to utilize the alternative requirements of Code Case N-532, "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000, Section XI, Division 1," for the Millstone Unit 2 third

10-year interval ISI program plan with two clarifications: the first regarding the reporting of corrective measures that are not related to repair and replacement activities; and a second clarification related to the requirements to use the provisions of IWA-4140 of the 1992 Edition of Section XI.

The first clarification needed to use Code Case N-532 is in regard to compliance with the code case in the matter of reporting of "corrective measures." ASME Section XI uses the term "corrective measures" in two different ways. One use of the term involves Code-required activities such as repair or replacement. The other use of the term, as used in IWX-3000, involves maintenance activities that do not involve repair or replacement activities. With this understanding, NNECO proposes not to report "corrective measures" which are performed during routine maintenance activities such as tightening threaded fittings to eliminate leakage, torquing of fasteners to eliminate leakage at bolted connections, replacing valve packing due to unacceptable packing leakage, tightening loosened mechanical connections on supports, adjustment and realignment of supports, or cleanup of corrosion on components resulting from leakage, etc. Including these routine maintenance activities in the OAR-1 form required by the code case would be a significant expansion of current requirements. In addition, it would be an unnecessary reporting burden and would provide little benefit for the experience gained. Reporting of these minor maintenance corrective measures has no safety significance and clutters the reporting of the meaningful information from repairs, replacements, or evaluations performed to accept flaws or relevant conditions exceeding the Section XI acceptance criteria. Corrective measures that refer to Code-required activities, such as repairs or replacements, will be reported in compliance with Code Case N-532. Therefore, use of Code Case N-532 is requested with the above clarification regarding the provisions of paragraph 2(c) for reporting corrective measures.

The second clarification centers on the requirement in the code case under paragraph 1(b) that a Repair/Replacement Plan shall be prepared in accordance with IWA-4140 of the 1992 Edition of Section XI. The Millstone Unit 2 repair and replacement program is documented in Millstone Station Procedure WC 3, "ASME Section XI Repair and Replacement Program" and is currently written to the 1989 Edition of Section XI with an exception for repairs or replacements of containment structures under Subsection IWE, "Requirements for Class MC and Metallic Liners of Class CC components of Light-Water Cooled Plants," and Subsection IWL, "Requirements for Class CC Concrete Components of Light-Water Plants" where the procedure requires the use of the 1992 Edition with the 1992 Addenda. The requirements in this procedure for a repair/replacement plan currently contain all the attributes described in IWA-4140 of the 1992 Edition, but NNECO has no plans to update this procedure fully to the 1992 Edition at this time. Therefore, the clarification requested is that use of this code case is acceptable provided NNECO continues to use repair/replacement plan requirements that meet IWA-4140 of the 1992 Edition of Section XI, but is not required to update the entire repair/replacement program to the 1992 Edition.

#### Reason for Relief

Code Case N-532 provides an alternative to the 1989 Edition of ASME Section XI, repair/replacement documentation requirements as well as regulatory reporting requirements relating to the ISI program. Implementation of this alternative will reduce the resources required to prepare NIS-2 forms and to prepare and submit the ISI Summary Report (including

the NIS-1 form) currently required after each refueling outage. This is a significant reduction in administrative burden required by IWA-6000. Additionally, use of this code case has been recommended in the Westinghouse Owners Group WCAP-14572, Revision I-NP-A, "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report" dated February 1999, which was approved by the NRC. Millstone Unit 2 plans to pursue use of WCAP14572, Revision 1-NP-A in the first quarter of 2000. The use of Code Case N-532 would only affect documentation and reporting requirements and would not affect the level of quality or safety provided by the repair/replacement and the ISI programs. Therefore, NNECO considers this request to meet the provisions of 10 CFR 50.55a(a)(3)(i) as providing an acceptable level of quality and safety.

#### Proposed Alternative

During the third 10-year interval, NNECO plans to use Code Case N-532 with the clarifications requested, subject to NRC approval, until such time this Code Case is incorporated into a future revision of Regulatory Guide 1.147. Upon issuance of the Regulatory Guide, NNECO will follow all provisions in Code Case N-532 with the clarifications requested, including any exceptions or limitations as would be discussed in the Regulatory Guide.

#### 4.0 EVALUATION

Code Case N-532 provides an alternative to the current ASME Section XI repair and replacement documentation requirements, as well as regulatory reporting requirements relating to ISI. This alternative will reduce the resources required to prepare NIS-2 forms and prepare and submit the ISI Summary Report currently required by the Code after each refueling outage. This is a significant reduction in the administrative burden required by the ASME Code, Section XI, IWA-6000.

By use of this code case, the licensee will prepare an "Owner's Activity Report" on Form OAR-1 upon completion of each refueling outage providing the following information:

- an abstract of all examinations and tests performed during the outage;
- a listing of item(s) with flaws or relevant conditions that required evaluation to determine acceptability for continued service; and
- an abstract of repairs, replacements, and corrective measures performed due to an item containing a flaw or relevant condition that exceeded acceptance criteria.

Each form OAR-1 prepared during an inspection period would be available onsite for NRC's review and would be submitted to the NRC at the end of the inspection period. The staff concurs with NNECO that the corrective measures to be reported in the form OAR-1 will include the code-required activities such as repairs and replacements instead of routine maintenance activities such as tightening threaded fittings to eliminate leakage, replacing valve packing due to unacceptable packing leakage, adjusting and realigning supports, etc. Furthermore, the licensee has requested clarification on the requirement in the code case under paragraph 1(b) that a repair/replacement plan be prepared in accordance with IWA-4140 of the 1992 Edition of Section XI. The Millstone Unit 2 repair/replacement program will continue to conform to the

1989 Edition of the Code for the current interval. The staff accepts a repair/replacement program in accordance with the 1989 ASME Section XI Code that has been incorporated by reference in 10 CFR 50.55a(b)(2). This code case provides an acceptable alternative to the documentation requirement of the 1992 Code and there is no impact on safety if a repair/replacement plan complies with the 1989 Code that contains the same essential elements as in paragraph IWA-4140 of the 1992 Section XI Code. Therefore, the staff believes that a repair/replacement plan conforming to the 1989 ASME Section XI Code would also be acceptable in lieu of a plan that conforms to the 1992 Code required under paragraph 1(b) of Code Case N-532.

Millstone Unit 2 will use Code Case N-532 with the clarifications previously stated in regard to the provisions of paragraphs 1(b) and 2(c) of the code case pertaining to the repair/replacement plan and reporting corrective measures.

The staff has reviewed the alternative documentation requirement of Code Case N-532 and has determined that the use of the code case would still require preparation of the repair/replacement certification record form NIS-2A. The completed form NIS-2A needs to be certified by an authorized nuclear inservice inspector (ANII) as defined in the ASME Code, Section XI, IWA-2130 and shall be maintained by the Owner. Furthermore, the owner's activity report form, OAR-1 shall also be prepared and certified by an ANII upon completion of each refueling outage. The staff noted that each OAR-1 form shall contain an abstract of applicable examinations and tests, a list of item(s) with flaws or relevant conditions that require evaluation to determine acceptability for continued service, an abstract of repairs, replacements, and corrective measures performed as a result of unacceptable flaws or relevant conditions. Hence, the information provided in the documentation pertaining to the use of Code Case N-532 can be used in the same manner to assess the safety implications of code activities performed during an outage. Any review using the information prescribed by the code case will, therefore, provide a comparable level of safety as a review conducted using the older reporting requirements.

## 5.0 CONCLUSION

The staff has determined that the proposed alternative documentation requirement of Code Case N-532 would provide an acceptable level of quality and safety as compared to that of the 1989 Edition of the ASME Code, Section XI, Subsections IWA-4000 and IWA-6000. Therefore, the use of Code Case N-532 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) at Millstone Unit 2 for the third 10-year inspection interval.

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Date: March 24, 2000

Millstone Nuclear Power Station  
Unit 2

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