October 4, 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: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3 (MILLSTONE UNIT 3) - SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN REQUESTS FOR RELIEF IR-2-13 AND IR-2-14 (TAC NO. MA9139)

Dear Mr. Scace:

By letter dated May 31, 2000, Northeast Nuclear Energy Company (the licensee) submitted a request for relief from the American Society of Mechanical Engineers (ASME) Code Section XI examination requirements. Pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.55a(g)(5)(iii), you requested relief from performing the volumetric and surface examination on the inaccessible portions of the steam generator 1A feedwater nozzle-to-shell weld and from performing the volumetric examination of the inaccessible portions of the "B" residual heat removal heat exchanger shell-to-flange weld.

The Nuclear Regulatory Commission (NRC) staff has reviewed your submittal and concludes that the Code examination requirements as discussed in Requests for Relief IR-2-13 and IR-2-14 are impractical and the proposed alternatives provide reasonable assurance of structural integrity of the subject components. Therefore, relief is granted for Requests for Relief IR-2-13 and IR-2-14 pursuant to 10 CFR 50.55a(g)(6)(i). The staff has determined that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that would result if the requirements were imposed on the facility.

The NRC staff's evaluation and conclusions are contained in the Enclosure. Contact the NRC Project Manager, Victor Nerses at (301) 415-1484 if you have any questions. This completes the staff's effort on TAC No. MA9139.

Sincerely,

/RA/ B. Buckley for

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

Docket No. 50-423

Enclosure: Safety Evaluation

cc w/encl: See next page

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*SE Input provided on 8/15/00
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NAME	JZimmerman	TClark	VNerses	ESullivan	RHoefling	BBuckly for JClifford
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE SECOND INSERVICE INSPECTION PROGRAM

RELIEF REQUEST NOS. IR-2-13 AND IR-2-14

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NUMBER 50-423

1.0 INTRODUCTION

Inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components is performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(g)(6)(i).

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 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 pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) 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 first 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) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The Code of record for the Millstone Nuclear Power Station, Unit 3 second 10-year ISI interval is the1989 Edition of the ASME Boiler and Pressure Vessel Code.

2.0 EVALUATION

The NRC staff has reviewed the information concerning the ISI program Requests for Relief IR-2-13 and IR-2-14 submitted for the second 10-year interval for Millstone Nuclear Power Station, Unit 3 in Northeast Nuclear Energy Company's (NNECO/the licensee) letter dated May 31, 2000.

Enclosure

2.1 Request for Relief IR-2-13

Code Requirement

ASME Code, Section XI, Table IWC-2500-1, Category C-B, Item C2.21 requires 100% volumetric and surface examination of the Nozzle-to-Shell Weld according to Figure Nos. IWC-2500(a) or (b).

Component Identification

Code Class	2
Examination Category	C-B
Item Number	C2.21 - Steam Generator Nozzle-to-Shell Welds
Component Identification Number:	03-053-SW-R (S/G 1A Feedwater nozzle to shell)

Licensee's Proposed Request for Relief (as stated)

Pursuant to 10 CFR 50.55a(g)(5)(iii) relief is requested from performing the volumetric and surface examination on the inaccessible portions of the subject vessel weld to the extent required by code.

Licensee's Proposed Alternative Examination (as stated)

A. The subject weld will receive a volumetric and surface examination on the accessible areas in accordance with ASME section XI (IWC-2500-1).

B. NNECO will perform visual examination during system leakage tests as required by Section XI and Code Case N-498-1.

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

Permanent obstructions limit the volumetric and surface examination of the subject weld. The examination is limited to approximately 82 percent coverage for the surface exam and approximately 70 percent coverage for the volumetric exam using the most current examination technology. The obstruction consists of permanently mounted supports for insulation panels as shown on the attached sketch. Based on these permanent obstructions, relief is requested on complying with the 100 percent required examination coverage of this weld.

Evaluation

The Code requires 100% volumetric and surface examination of the Steam Generator Nozzle-to-Shell Weld in accordance to Figure Nos. IWC-2500(a) or (b). The licensee provided a

sketch showing the layout and limitations of the subject weld. As stated by the licensee as evidence by the sketch provided, complete examination coverage is limited by physical interferences from permanently mounted supports for insulation panels. These conditions make 100% volumetric and surface examinations impractical. To gain complete access to the Steam Generator Nozzle-to-Shell Weld would require design modifications. Imposition of this requirement would create a significant burden on the licensee.

The licensee will be able to examine a significant portion of the Steam Generator Nozzle-to-Shell Weld 03-053-SW-R. Examination volume for this weld is 70%, and 82% coverage is obtainable for the surface exam. Based on the volumetric and surface coverages obtainable, the staff has determined that any patterns of degradation should be detected by the examinations. In addition, a VT-2 visual examination will be performed during system leakage tests as required by Section XI and Code Case N-498-1. The examinations to be performed and the code-required visual exam will provide reasonable assurance of structural integrity of the Steam Generator Nozzle-to-Shell Weld 03-053-SW-R. Therefore, based on the impracticality of meeting the the Code requirements relief is granted pursuant to 10 CFR 50.55a(g)(6)(i)

2.2 Request for Relief IR-2-14

Code Requirement

ASME Code, Section XI, Table IWC-2500-1, Category C-A, Item C1.10 requires essentially 100% volumetric examination of the Shell Circumferential Welds (RHR Heat Exchanger Shell-to-Flange weld) according to Figure No. IWC-2500-1.

Component Identification

Code Class	2
Examination Category	C-A
Item Number	C1.10 - Shell-to-flange Weld
Component Identification Number	03-074-004 (B RHR Heat Exchanger Shell-to-Flange)

Licensee's Proposed Request for Relief (as stated)

> Pursuant to 10 CFR 50.55a(g)(5)(iii) relief is requested from performing the volumetric examination on the inaccessible portions of the subject vessel weld to the extent required by code.

Licensee's Proposed Alternative Examination (as stated)

A. The subject weld will receive a volumetric examination on the accessible areas in accordance with ASME Section XI, Table IWC-2500-1.

B. The inaccessible area of the subject weld is accessible for a surface examination and will receive a liquid penetrant examination in accordance with Section XI, Table IWC-2500-1.

C. NNECO will perform visual examination during system leakage tests as required by Section XI and Code Case N-498-1.

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

Geometric configuration and permanent obstructions limit the volumetric examination of the subject weld. The obstruction consists of permanently welded pipe-to-vessel reinforcing plates which limit the ultrasonic examination to approximately 58 percent (%) of the required weld length as shown on the attached sketch. Based on these permanent obstructions relief is requested on complying with the 100 percent required examination coverage of this weld.

Evaluation

The Code requires essentially 100% volumetric examination of the B RHR Heat Exchanger Shell-to-Flange Weld 03-074-004 according to Figure No. IWC-2500-1. The licensee provided a sketch showing the layout and limitations of the subject weld. As stated by the licensee as evidence by the sketch provided, complete examination coverage is limited by physical interferences from permanently welded pipe-to-vessel reinforcing plates. These conditions make 100% volumetric examinations impractical. To gain complete access for the B RHR Heat Exchanger Shell-to-Flange Weld 03-074-004 would require design modifications. Imposition of this requirement would create a significant burden on the licensee.

The licensee has examined 58% of the subject weld. The licensee noted that the inaccessible area of the subject weld is accessible for a surface examination and has proposed to perform a liquid penetrate examination of this area. In addition, the licensee will be performing a VT-2 visual examination during system leakage tests as required by Section XI and Code Case N-498-1. Therefore, the proposed examinations provide a reasonable assurance of structural integrity of the subject weld.

3.0 CONCLUSION

The NRC staff concludes that the Code examination requirements as discussed in Requests for Relief IR-2-13 and IR-2-14, and as evaluated in this Safety Evaluation are impractical and the proposed alternatives provide reasonable assurance of structural integrity of the subject components in the licensee's requests for relief. Therefore, relief is granted for Requests for Relief IR-2-13 and IR-2-14 pursuant to 10 CFR 50.55a(g)(6)(i). The NRC staff has determined that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that would result if the requirements were imposed on the facility.

Principal Contributor: T. McLellan

Date: October 4, 2000

Millstone Nuclear Power Station
Unit 3

cc:

Ms. L. M. Cuoco
Senior Nuclear Counsel
Northeast Utilities Service Company
P. O. Box 270
Hartford, CT 06141-0270

Edward L. Wilds, Jr., Ph.D.
Director, Division of Radiation
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

First Selectmen
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Mr. M. H. Brothers
Vice President - Nuclear Operations
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Mr. M. R. Scully, Executive Director
Connecticut Municipal Electric
Energy Cooperative
30 Stott Avenue
Norwich, CT 06360

Mr. J. T. Carlin
Vice President - Human Services - Nuclear
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Mr. F. C. Rothen
Vice President - Nuclear Work Services
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Ernest C. Hadley, Esquire
1040 B Main Street
P.O. Box 549
West Wareham, MA 02576

Ms. Cynthia Arcate, Vice President
Generation Investments
New England Power Company
25 Research Drive
Westborough, MA 01582

Deborah Katz, President
Citizens Awareness Network
P.O. Box 83
Shelburne Falls, MA 03170

Mr. Allan Johanson, Assistant Director
Office of Policy and Management
Policy Development & Planning Division
450 Capitol Avenue - MS# 52ERN
P. O. Box 341441
Hartford, CT 06134-1441

Ms. Terry Concannon
Co-Chair
Nuclear Energy Advisory Council
41 South Buckboard Lane
Marlborough, CT 06447

Mr. R. P. Necci
Vice President - Nuclear Technical Services
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Millstone Nuclear Power Station
Unit 3

cc:

Mr. Evan W. Woollacott
Co-Chair
Nuclear Energy Advisory Council
128 Terry's Plain Road
Simsbury, CT 06070

Mr. John W. Beck, President
Little Harbor Consultants, Inc.
44 Nichols Road
Cohasset, MA 02025-1166

Mr. L. J. Olivier
Senior Vice President and
Chief Nuclear Officer - Millstone
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Mr. C. J. Schwarz
Station Director
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Senior Resident Inspector
Millstone Nuclear Power Station
c/o U.S. Nuclear Regulatory Commission
P. O. Box 513
Niantic, CT 06357

Nicholas J. Scobbo, Jr., Esquire
Ferriter, Scobbo, Caruso, & Rodophele, P.C.
75 State Street, 7th Floor
Boston, MA 02108-1807

Mr. G. D. Hicks
Director - Nuclear Training Services
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Citizens Regulatory Commission
ATTN: Ms. Geri Winslow
P. O. Box 199
Waterford, CT 06385

Mr. William D. Meinert
Nuclear Engineer
Massachusetts Municipal Wholesale
Electric Company
P.O. Box 426
Ludlow, MA 01056

Mr. B. D. Kenyon
President and Chief Executive Officer-
NNECO
Northeast Nuclear Energy Company
P.O. Box 270
Hartford, CT 06141-0270

Mr. D. A. Smith
Manager - Regulatory Affairs
Northeast Nuclear Energy Company
P. O. Box 128
Waterford, CT 06385

Ms. Nancy Burton
147 Cross Highway
Redding Ridge, CT 00870