

November 14, 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-E2 FOR THE  
CONTAINMENT INSERVICE INSPECTION PROGRAM, MILLSTONE  
NUCLEAR POWER STATION, UNIT NOS. 2 AND 3 (TAC NOS. MB0164  
AND MB0165)

Dear Mr. Scace:

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject relief request for the Millstone Nuclear Power Station, Unit Nos. 2 and 3, submitted by Northeast Nuclear Energy Company (the licensee) in its letter dated October 2, 2000. The licensee proposed use of an alternative to the augmented examination requirements for surface areas of metal containments and liners of concrete containments in the 1998 Edition of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code*, Section XI, Subsection IWE. Based on the information provided in the relief request, the staff concludes that for Relief Request RR-E2, the licensee's proposed alternative will provide an acceptable level of quality and safety. Therefore, the proposed alternative is authorized pursuant to the requirements of 10 CFR 50.55a(a)(3)(i) for the first inspection interval.

The NRC staff's evaluation and conclusions are contained in the enclosed Safety Evaluation. If you have any questions please contact Victor Nerses at (301) 415-1484. This completes the staff's effort on TAC Nos. MB0164 and MB0165.

Sincerely,

*/RA/*

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

Docket Nos. 50-336 and 50-423

Enclosure: Staff Evaluation Report

cc w/encl: See next page

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

November 14, 2000

SUBJECT: SAFETY EVALUATION OF RELIEF REQUEST RR-E2 FOR THE  
CONTAINMENT INSERVICE INSPECTION PROGRAM, MILLSTONE  
NUCLEAR POWER STATION, UNIT NOS. 2 AND 3 (TAC NOS. MB0164  
AND MB0165)

Dear Mr. Scace:

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject relief request for the Millstone Nuclear Power Station, Unit Nos. 2 and 3, submitted by Northeast Nuclear Energy Company (the licensee) in its letter dated October 2, 2000. The licensee proposed use of an alternative to the augmented examination requirements for surface areas of metal containments and liners of concrete containments in the 1998 Edition of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code*, Section XI, Subsection IWE. Based on the information provided in the relief request, the staff concludes that for Relief Request RR-E2, the licensee's proposed alternative will provide an acceptable level of quality and safety. Therefore, the proposed alternative is authorized pursuant to the requirements of 10 CFR 50.55a(a)(3)(i) for the first inspection interval.

The NRC staff's evaluation and conclusions are contained in the enclosed Safety Evaluation. If you have any questions please contact Victor Nerses at (301) 415-1484. This completes the staff's effort on TAC Nos. MB0164 and MB0165.

Sincerely,

*/RA/*

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

Docket Nos. 50-336 and 50-423

Enclosure: Staff Evaluation Report

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	JClifford	JZimmerman	ACRS
PDI-2 R/F	TClark	JShea, EDO	GHill (4)
OGC	JLinville, RI	RSummers, RI	MKotzalas
EAdensam	VNerses		

ACCESSION NUMBER: ML003759230

OFFICE	PDI-2/PM	PDI-2/PM	PDI-2/PM	PDI-2/LA	EMCB	OGC	PDI-2/SC
NAME	RPulsifer	JZimmerman	VNerses	TClark	DTerao		JClifford
DATE	10/20/00	10/20/00	10/20/00	10/20/00	10/20/00	11/6/00	11/9/00

OFFICIAL RECORD COPY

Millstone Nuclear Power Station  
Units 2 and 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

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

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

Mr. Charles Brinkman, Manager  
Washington Nuclear Operations  
ABB Combustion Engineering  
12300 Twinbrook Pkwy, Suite 330  
Rockville, MD 20852

Mr. R. P. Necci  
Vice President - Nuclear Technical Services  
c/o Mr. David A. Smith  
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

Mr. J. T. Carlin  
Vice President - Human Services - Nuclear  
Northeast Nuclear Energy Company  
P. O. Box 128  
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. William D. Meinert  
Nuclear Engineer  
Massachusetts Municipal Wholesale  
Electric Company  
P. O. Box 426  
Ludlow, MA 01056

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

Millstone Nuclear Power Station  
Units 2 and 3

cc:

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

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

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

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

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

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

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

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

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

Attorney Nicholas J. Scobbo, Jr.  
Ferriter, Scobbo, Caruso, Rodophele, PC  
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

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO CONTAINMENT INSERVICE INSPECTION PROGRAM  
NORTHEAST NUCLEAR ENERGY COMPANY  
MILLSTONE NUCLEAR POWER STATION, UNIT NOS. 2 AND 3  
DOCKET NOS. 50-336 AND 50-423

1.0 INTRODUCTION

In the *Federal Register* dated August 8, 1996, the U.S. Nuclear Regulatory Commission (NRC) amended Title 10 of the *Code of Federal Regulations*, Section 50.55a, to incorporate by reference Section XI of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code*, 1992 Edition through 1992 Addenda of Subsections IWE and IWL. Subsection IWE provides the requirements for Inservice Inspection (ISI) of Class MC (metallic containment components) and the metallic liner of Class CC (concrete containment components). Subsection IWL provides the requirements for ISI of Class CC components.

The regulations require that ISI of certain Code Class MC and CC components be performed in accordance with Section XI of the ASME Code and applicable addenda, except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Pursuant to 10 CFR 50.55a(a)(3), alternatives to the requirements of paragraph (g) may be used, when authorized, if: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for the facility.

In a safety evaluation dated April 21, 2000, Northeast Nuclear Energy Company (NNECO/the licensee) was authorized to use the provisions of the 1998 Edition of Subsections IWE and IWL for containment inspection of Millstone Nuclear Power Station, Unit Nos. 2 and 3 (Millstone 2 and 3). The 1998 ASME Code has not yet been incorporated by reference into 10 CFR 50.55a.

By letter dated October 2, 2000, NNECO proposed an alternative (RR-E2) to the augmented examination requirements in IWE-2500(b) for Millstone 2 and 3. The NRC's findings with regard to Relief Request Number RR-E2 are provided below.

Enclosure

## 2.0 RELIEF REQUEST RR-E2

The licensee proposed an alternative to the augmented examination requirements for surface areas of metal containments and liners of concrete containments. The Code, IWE-2500(b)(1), requires a detailed visual examination of both sides of accessible surface areas. The Code, IWE-2500(b)(2) requires an ultrasonic thickness measurement of areas accessible from only one side. The licensee proposes to perform a detailed visual examination of accessible surface areas. The extent of the visual examination and the necessity of additional volumetric examinations will be specified as part of an engineering evaluation.

### 2.1 Licensee's Basis for Requesting Relief

The licensee states:

An alternative is requested to the detailed visual examination requirement of both sides of an accessible surface in IWE-2500(b)(1) and to the ultrasonic thickness measurement requirement in IWE-2500(b)(2).

Compliance with IWE-2500(b)(1) will require detailed visual examination on both sides of some surfaces when detailed visual examination of one side only would suffice. Compliance with IWE-2500(b)(2) will require ultrasonic thickness measurement of some surfaces when detailed visual examination of the affected side only would suffice. The requirements to perform examinations beyond what is required to completely assess the surface condition results in added work without a compensating increase in quality or safety.

The requirements in IWE-2500(b) and Table IWE-2500-1, Examination of Category E-C, ensure containment leak-tight or structural integrity of surfaces requiring augmented examination. The proposed alternative will continue to meet these requirements. The detailed visual examination acceptance criteria provides a conservative basis for accepting containment surfaces. The wording in the proposed alternative eliminates examinations that are not needed to provide the necessary assurance. Augmented examinations performed in accordance with the proposed alternative provide an equivalent level of quality and safety.

### 2.2 Alternative Examination

The licensee proposes:

NNECO proposes to use an alternative augmented examination approach, detailed below, for areas subject to augmented examination in accordance with IWE-1240.

1. Surface areas accessible for visual examination shall be examined by the detailed visual examination method.
2. The extent of the visual examination and any additional volumetric examination that may be required, including, but not limited to, ultrasonic

thickness measurement methods in accordance with Section V, T-544, shall be specified as part of the engineering evaluation of each E-C category surface.

These alternative requirements rely upon the engineering evaluation that is performed by the IWE Responsible Engineer. This is consistent with Owner-defined acceptance criteria as allowed in the 1998 Edition and as documented previously by NNECO letters.

### 2.3 Evaluation

Surface areas of the containment which are likely to experience accelerated degradation and aging require augmented examination. These areas are identified in Table IWE-2500-1, Examination Category E-C and IWE-1241 and can include locations such as areas exposed to standing water, surfaces wetted during refueling, concrete-to-steel or liner interfaces, locations subject to substantial traffic, and areas that experience wear from frequent vibrations. Once the areas requiring augmented examination are determined, they must be identified in the inspection program. The requirements for the augmented examination methods are contained in IWE-2500(b). IWE-2500(b)(1) requires a detailed visual examination of both sides of accessible surface areas. IWE-2500(b)(2) requires an ultrasonic thickness measurement of areas accessible from only one side.

Millstone 2 and 3 both have concrete containments with metallic liners which are accessible from one side only. Therefore, the Code requires an ultrasonic thickness measurement of all areas identified as requiring augmented examination. As an alternative to these requirements, the licensee proposes to perform a detailed visual examination of the accessible surface areas. The extent of the visual examination and the necessity of additional volumetric examinations will be specified as part of the engineering evaluation.

In the 1998 Edition of the Code, the requirements for general and detailed visual examinations are defined by the owner. In its April 21, 2000, safety evaluation, the staff evaluated the licensee's visual examination requirements including the acceptance criteria. The staff determined that the licensee's general and detailed visual examinations are essentially equivalent to VT-3 and VT-1 examinations. Therefore, the licensee's detailed visual examination provides adequate assurance that the condition of the accessible surfaces will be determined and the magnitude and extent of any deterioration and distress will be identified. The detailed visual examination, combined with engineering evaluation, will provide adequate assurance that areas requiring additional volumetric examination (i.e., ultrasonic thickness measurement) will be specified. The licensee's alternative eliminates the requirement to perform examinations beyond what is necessary to adequately assure the structural integrity of the containment.

### 3.0 CONCLUSION

The staff has determined that the licensee's proposed alternative to the requirements specified in IWE-2500(b) provides an acceptable level of quality and safety. Therefore, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the first inspection interval for Millstone 2 and 3.

Principal Contributor: M. Kotzalas

Date: November 14, 2000