

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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February 24, 1993

Docket No. 50-336
B14388

Re: ASME Section XI
GL 90-05
10CFR50.55a(g)(6)(i)

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Modification to Pipe
Relief Request From ASME Code Section XI Requirements

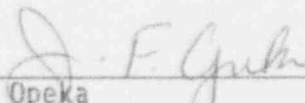
The purpose of this letter is to request, in response to NRC Generic Letter 90-05, relief from ASME Boiler and Pressure Vessel Code Section XI requirements pursuant to 10CFR50.55a(g)(6)(i). Attachment 1 provides a description of actions taken by Northeast Nuclear Energy Company (NNECO) to make interim repairs to the leak in this piping as an alternative to an IWA-7000 replacement.

Consistent with the provisions of the generic letter, NNECO is submitting this relief request for a temporary noncode repair. Code repair of the degraded piping is planned for the next outage greater than 30 days. The Resident Inspector at Millstone Unit No. 2 has been informed of this repair and, as has been our practice, we will keep the Resident Inspector fully informed on all future repairs.

Please contact us if you have any questions.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2,
and 3

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B14388

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Modification to Pipe
Request for Relief From ASME Code Section XI

February 1993

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

UNIT: Millstone Unit 2 NCR # 293-026 DATE: 1/25/93
TIME: 09:50

1.0 ORIGINATOR

1.1 DESCRIPTION OF FLAW

The flaw is in an area of lack of fusion between the socket welded tee and the weld. The flaw was detected during system hydrotest following recent system modification. A leak existed only at hydrostatic test pressure.

Piping/Component Drawing No.: 2"-HUD-130/25203-20135 Sheet 121

P&ID No.: 25203-26008

1.2 IMPRACTICALITY OF CODE REPAIR

The flaw was detected while the plant was in operation. A Code repair will require welding in the west 480 switchgear room. Control systems within the room have sensitive electronics which could be adversely affected by electrical interference resulting from welding and may cause a turbine trip.

1.3 DESCRIPTION OF PROPOSED TEMPORARY REPAIR

No throughwall leak exists while the system is at normal operating pressure. As a precautionary measure, however, a temporary soft rubber sheet with hose clamps (not leak tight) has been installed to serve as a spray shield sheet.

1.4 SAFETY SIGNIFICANCE: System Interaction Evaluation

Flooding: Location of the weld is within the confines of a cofferdam with adequate drainage capabilities.

Jet Spray: There is no spray currently and the type of defect would not lead to the increase in a leak path. However, a spray shield has been installed.

Loss of Flow: Existing procedures specify compensatory measures upon loss of cooling to the room.

Other Interactions: PEO rounds within the room would identify a degrading condition.

Failure Consequences? None

Impact to Safe Shutdown Capability? None presently, current defect orientation and magnitude would minimize the potential for any impact. Installation of an encapsulation device will be considered to further enhance the ability to retain leakage.

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

1.5 ROOT CAUSE INVESTIGATION

Root Cause Description: Lack of fusion between the weld and the socket welded tee.

Other Systems Affected: None

1.6 AUGMENTED INSPECTION (must be completed within 15 days of flaw detection)

Assessment of overall degradation of the affected system:

Minimal to no effect. All other welds passed system hydrotest.

Additional examinations required (based on root cause) -- specify number of inspection locations -- also specify frequency of inspections: (ten most susceptible and accessible locations for high energy piping system and five for moderate energy piping system)

None

Description of areas selected for augmented inspection:

Only the specific weld in question.

Forward augmented inspection results to NUSCO Supervisor, Stress Analysis Engineering Unit when completed.

2.0 STRESS ANALYSIS UNIT

2.1 DESIGN DETAILS

System: Service Water Supply to Vital AC Switchgear Rooms Cooling Coils X-181A & 181B

Component: 2"-HUD-130

Piping Size & Schedule: 2" Schedule 40

Nominal Wall Thickness: 0.154"

Safety Code Class: Class 3

Material: SB466-706

Design Pressure: 100 psig

Design/Operating Temperature: 100°F/80°F

Code Minimum Wall Thickness: 0.014"

NORTHEAST UTILITIES

FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

2.2 FLAW CHARACTERIZATION

Flaw Description/Size: (i.e., flaw size, adjacent wall thickness, single/multiple flaw, total area examined, etc.)

The flaw is an area of lack of fusion between the socket weld tee and the weld. Leak exist only at hydrostatic test pressure. No leak was observed during normal operation.

Flaw Location: The small weeping leak is located at 3:00 looking north at weld W-1 of AWO M2-92-17685.

Examination Method: A small weeping leak (very low rate) was found while hydrostatic pressure test was performed.

Flaw Type: Pinhole due to lack of weld fusion.

Reference UT Measurement Report: None. Defect located in recently made weld. All piping components are new.

2.3 PRELIMINARY FLAW EVALUATION SUMMARY

Preliminary Operability Assessment Details:

Method Used: Technical evaluation attached to NCR.

Limiting Flaw Size: Not estimated. Flaw not expected to increase in size.

Period of Time to Reach Limiting Flaw Size: To be determined based on planned monitoring.

Evaluation Reference: NCR disposition.

2.4 END OF CYCLE FLAW EVALUATION SUMMARY

Final Operability Assessment Details:

Method Used: (i.e., LEFM, area reinforcement, wall thinning, ASME Code Case)

Area reinforcement per the Draft ASME Code Case.

Estimated Wall Erosion Rate: Flaw is assumed to be a pinhole since a leak exists only at hydrostatic test pressure. The flaw is caused by a lack of fusion between the socket welded tee and the weld. Erosion rate for 90 Cu - 10 Ni is negligible. No leak exists during normal system operation.

Projected Flaw Size: 1" diameter hole with nominal wall outside the flaw is qualified for design loads.

Period of Time to Permanent Repair/Replacement: Next extended shutdown.

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FORM FOR RELIEF REQUEST FROM ASME SECTION XI REQUIREMENTS

Provide a Discussion of Evaluation of Design Loading Conditions:

Per Section 3A of GL90-05, design loads qualified include deadweight, pressure, safe shutdown earthquake (SSE). Thermal loads are considered negligible as the pipe operating temperature is low (80°F).

Evaluation Reference: Calculation MP2-131-269-EM, Rev. 0

Discussion of Augmented Inspection Results: No augmented inspection was performed. Pinhole leak at weld is due to lack of fusion and is considered an isolated condition.

Expanded Augmented Inspection Requirements: None.

2.5 FLAW MONITORING

Walkdown Frequency: (for leak monitoring) Leak will be monitored a minimum of once per day.

Frequency of Follow-up NDE: (for erosion rate assessment)

Since the material is Cu-Ni and the weld is new, erosion rates are currently assumed to be negligible. UT measurements will be performed if leakage increases. Data to be evaluated by Stress Analysis.

2.6 ADDITIONAL COMMENTS (scope, limitations, and specific considerations)

None

2.7 EXCEPTIONS TO GL-90-05/DRAFT ASME CODE CASE

None

2.8 REFERENCES/INPUTS

- o ASME B&PV Section III
 - 1971 Edition and Addenda to Summer 1973
 - 1974 Edition
- o ASME Draft Code Case
- o GL 90-05 Issued June 15, 1990
- o Calculation MP2-131-269-EM, Rev. 0
- o Drawings 25203-20135, Sheets 99 & 99H
25203-20135, Sheets 100 & 100H
25203-20135, Sheets 121 & 121H

cc: Originator, Supervisor, Stress Analysis Engineering Unit, Unit Director,
Nuclear Records

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NONCONFORMANCE REPORT

OPSS08 REV. 11-80

SEE NED 3.65 FOR INSTRUCTIONS

SUBJECT 2"-HVD-130 Supply to vital Switchgear cooling
coils X-181A & X-181B

UNIT 2
NUMBER 293-026

COMPONENT LOCATION 81 SYSTEM 223 2326 R MFR/VENDOR

West 481V switchgear Rm 36'-6"

SOURCE DOCUMENT

12-92-12257

DESCRIPTION OF NONCONFORMANCE/CAUSE

1 A small weeping leak at 3:00 looking north of weld W-1
of AWO 12-92-17685 was found while hydrostatic pressure test
was performed

ORIGINATOR

David M Perry David M Perry

DATE

1-25-93

QSD REPRESENTATIVE

R. Versace

DATE

1/25/93

DISPOSITION

☒ USE-AS-IS ☐ REPAIR ☐ INSTALL N.C. MATL ☒ REWORK ☐ RETURN ☐ SCRAP ☐ ADMIN. ☐ OTHER

DISPOSITION DETAILS

See Attachment

From

J. B. ...

n5352

To:

T. Mawson x 3452

Telecopier x 5431

ENGINEER

M. Delletty David M Perry

DATE

1/27/93

SUPERVISOR

AD

DATE

UNIT SUPT./NUC ENG. ENGINEERING SUPT.

DATE

SSH EVALUATION REQUIRED?

☐ YES☐ NO

SUPERVISOR

DATE

AWO

REMARKS: INSPECTION/VERIFICATION

☐ EAT.☐ UNSAT.☐ N/A

NCR REVIEWED & CLOSED

DATE

ORIGINAL: TO NUCLEAR RECORDS

COPY: TO QSD

2 of 4

Attachment Aa of A4

DISPOSITION DETAILS
FOR NCR No. 293-0026

The supply and return piping to cooling coil X-181A and X-181B were modified slightly to permit fit-up of the new cooling coils to the existing piping. The modifications were performed to ensure that no new piping loads were placed on the cooling coils. The modification is intended to help reduce future cooling coil tube leaks.

This NCR is dispositioned "USE-AS-IS" until the plant conditions permit the "REWORK" of the weld. The REWORK will permanently repair the weld. Justification for this disposition is as follows:

USE-AS-IS

The supply piping (2"-HUD-130) to cooling coil X-181B (lower coil) developed a small weeping leak when the system hydrostatic pressure test was performed. All other joints meet the requirements of the hydrostatic pressure test. The small weeping leak is located at 3:00, looking north at weld W-1 of AWO M2-92-17685 (see attached weld map).

At the hydrostatic test pressure of 110 psig, the leak did not spray any water. The water wept from the weld at a very low rate. The water seeping from the pinhole drips onto the floor inside of the cooling coil water cofferdam.

During the recent LOCA test the maximum pressure at the 6" branch connection to the cooling coils was approximately 65 psig. The connection is located at approximately elevation 17'. The leak is located approximately 20' above the 6" take-off. The 20' of elevation difference and normal line losses (i.e. pipe friction, throttled valve(s)) will reduce the pressure at the leak. With these losses, the pressure at the leak will be approximately half of the hydrostatic test pressure. Therefore, under operational pressure no leakage is expected.

During the hydrostatic pressure test the leak did not spray any water. If the leak were to enlarge and start to spray, it would be directed towards the cooling coils and air plenum and not towards any electrical equipment. Operation personnel walkdown the switchgear room at least once a shift. If the leak was to become worse, operation personnel would become aware of the condition and notify maintenance personnel. If the leak was to start spraying water a spray shield and/or a soft patch, would be installed to ensure that no vital equipment could be sprayed.

It should be noted that welding in the west 480V switchgear room is not recommended, while the plant is operational. Steam Turbine EHC control cabinets are located in the switchgear room. The EHC control system could be adversely effected if welding is performed in the room while the plant is operational.

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Attachment A3 of A4

DISPOSITION DETAILS
FOR ECR No.293-0026REWORK

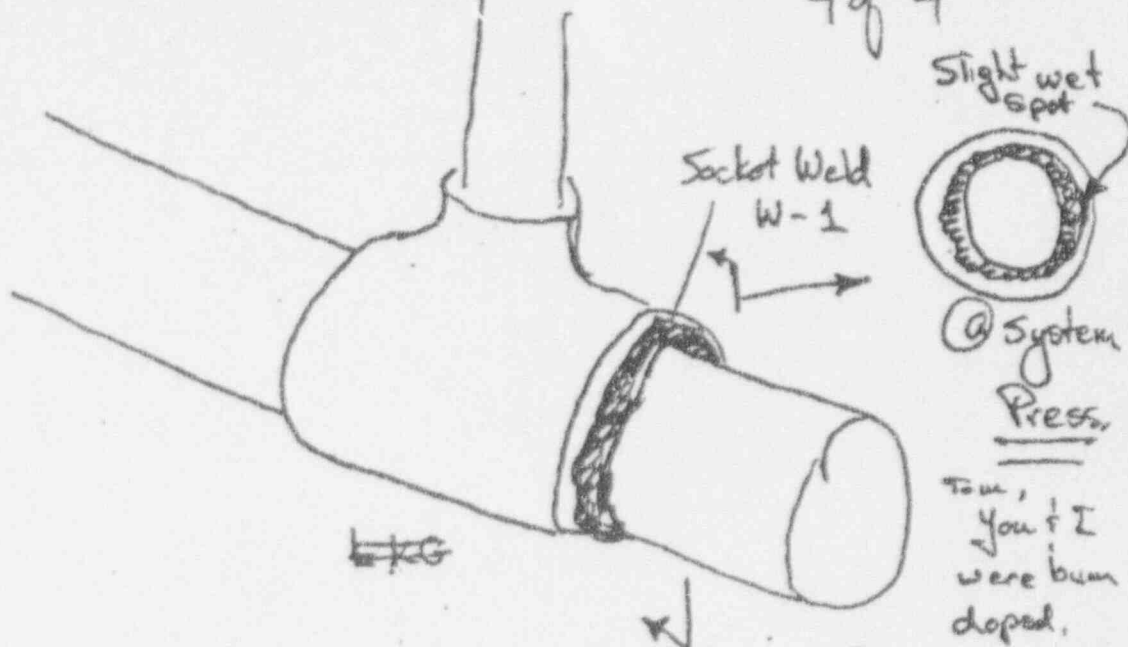
AWO M2-93-01582 has been written to rework the leak at the next available opportunity (i.e. plant non-operational). The joint will be repaired in accordance with ASME Section XI and the following steps;

- The weld in the area of the leak will be excavated and if necessary the entire weld will be removed.
- The excavated area will be LP inspected, to ensure solid base metal is present.
- The weld will be repaired in accordance with the NUSCo weld manual.
- The weld will be visually inspected per GWS-004.
- Once the weld is reworked the pipe will be hydrostatic pressure tested in accordance with SP-21219.

PH/Clatter
1/27/93

Calc ^W MP2-131-269-EMJ Rev. D

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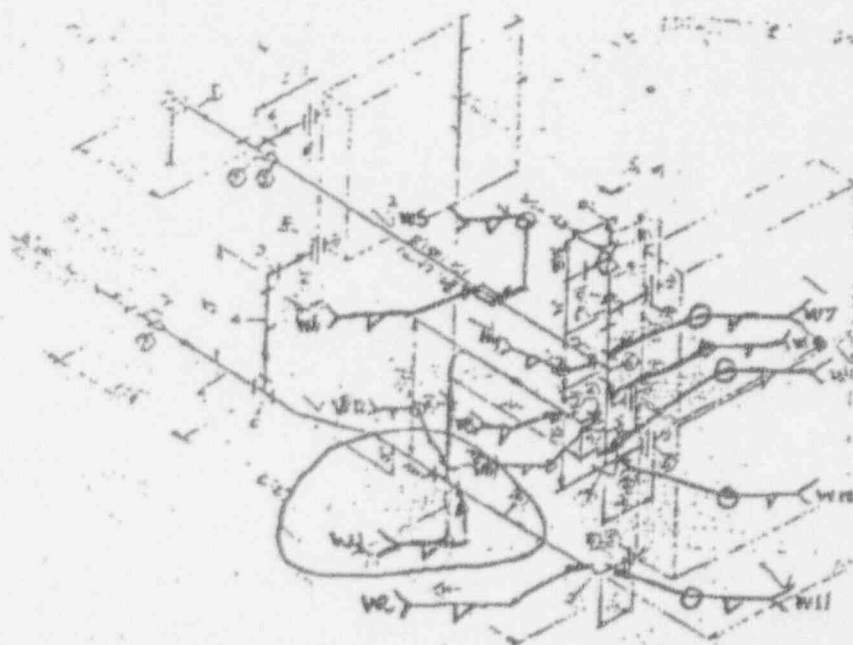
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the pipe. 4/13

Awo m2-92-17685
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