

Inservice Inspection Report

Class I & II SYSTEM

Millstone Nuclear Power Station

Unit # 2

P.O.Box 128

Waterford, Connecticut 06385

Owner:

Northeast Nuclear Energy Company

P.O.Box 270

Hartford, Connecticut 06101

Commercial Service Date:

December 26, 1975

Report Date:

FEBRUARY 29, 1981

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PDR ADDCK 05000336
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NUSCOTable of Contents

<u>Section</u>	<u>Title</u>
I	Owner's Data Report (Form NIS-1)
II	Introduction
III	Definitions
IV	NDE Procedures, Equipment and Personnel Qualifications
V	Exclusions and Exceptions
VI	Conditions Noted
VII	EXAMINATION RESULTS

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Northeast Nuclear Energy Co., P.O. Box 270, Hartford, Ct. 06101
(Name and Address of Owner)
2. Plant Millstone Nuclear Power Station, P.O. Box 128, Waterford, Ct. 06385
(Name and Address of Plant)
3. Plant Unit 2 4. Owner Certificate of Authorization (if required) (NR)
5. Commercial Service Date 12/26/75 6. National Board Number for Unit 20914
7. Components Inspected By: Northeast Utilities Service Co.

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
S. G. #1	M. - CE I. - Bechtel	NA	NA	20928
S. G. #2	M. - CE I. - Bechtel	NA	NA	20929
Piping, Valves and Pumps	I. - Bechtel	NA	NA	NA
Support Members & Components	I. - Bechtel	NA	NA	NA
Przr. Manway Studs	M. - CE	NA	NA	(PRZR) 20918
Class 1 System Hydro	NA	NA	NA	NA
7. a. Components Inspected By: CE Power Systems				
Reactor Vessel				
56 Welds	M-CE	67110	NA	20914
57 Insp. Areas	—	—	—	—
Steam Generator #2 Stay Cylinder Welds	M-CE	67511	NA	20929
Primary Piping Hot Leg #1	M-CE	502-19	NA	None
3 Welds	—	—	—	—
Primary Piping Hot Leg #2	M-CE	502-19	NA	None
3 Welds	—	—	—	—
Class I System Leak Test	I-Bechtel	NA	NA	NA

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-1 (back)

8. Examination Dates 6/6/83 to 1/3/84 9. Inspection Interval from 8/26/82 to 12/26/85
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. 169 examinations were performed. This is approximately 33% of the inspections required this interval.
11. Abstract of Conditions Noted.
See Attached.
12. Abstract of Corrective Measures Recommended and Taken
See Attached.

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date March 27 19 84 Signed NNECO By J. J. Kelley Owner (J. J. Kelley, Superintendent Millstone Unit 2)
Certificate of Authorization No. (if applicable) (NA) Expiration Date (NA)

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of CT and employed by MSB I & E of HARTFORD have inspected the components described in this Owners' Data Report during the period 6/6/83 to 1/3/84, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 3- 29 19 84
R. J. Zorn Commissions CT 1119 INB 9091N
Inspector's Signature National Board, State, Province and No.

Abbreviations: NUSCO Northeast Utilities Service Co.
NNECO Northeast Nuclear Energy Co.
Htfd Stm Boiler Hartford Steam Boiler
CE Combustion Engineering Inc.

ATTACHMENT TO FORM NIS-1

Northeast Nuclear Energy Co.
P.O. Box 270
Hartford, CT 06101

Millstone Nuclear Power Station
Unit 2

11. Abstract of Conditions Noted -

Of the 65 welds ultrasonically examined in the reactor vessel, primary pipe and steam generator stay cylinders, there were 38 indications recorded, 22 were due to geometry and the remaining 16 were evaluated and found acceptable.

Of the 57 areas inspected visually (Reactor Vessel and internals) there were 2 recordable indications detected. One was evaluated to be acceptable by informational eddy current techniques and the other was confirmed by informational ultrasonic and eddy current techniques. Analysis of the latter lead to a major repair program which lasted from September to December, 1983 and is the subject of CE Report IR-ISI-031, Reactor Vessel Core Support Barrel Nondestructive Examination Report.

A recordable indication on weld SG-2-THS-2 was detected using the liquid penetrant method. Recordable indications detected using the ultrasonic method were determined to be geometric in nature and acceptable.

Ultrasonic examination of weld X-74 in the shutdown cooling system detected an inside diameter recordable indication. The inside surface was liquid penetrant examined and found to be acceptable. This confirmed that the ultrasonic indication was properly classified as geometric.

12. Abstract of Corrective Measures Recommended and Taken

The thermal shield was removed from the core barrel. Flaws in the core barrel were removed by machining.

The indication in Weld SG-2-THS-2 was removed by light grinding.

AMI R.Y. Zorn
3/29/84

INTRODUCTION

This report contains the results of the 1983 Refueling Outage, Class I & II inservice inspection of the Millstone Nuclear Power Station Unit #2. The examinations were performed to meet the requirements of the ASME Boiler and Pressure Vessel Code Section XI, 1974 Edition, including the Summer 1975 Addenda. The method of examination as outlined in the ASME Boiler and Pressure Vessel Code, Section XI, 1980 Winter Addenda was used for categories C-E-1 and C-F. This is permissible under 10CFR50.55a, paragraph (g)(4)(iv).

The examinations were performed by personnel from the Northeast Utilities Service Co., Nuclear Engineering & Operations group and The Combustion Engineering Inc., C E Power Systems Division.

All records, examination data sheets, personnel certifications, equipment and material certifications for the examinations performed are on file at the Millstone Nuclear Power Station Unit # 2.

All items listed in this report are creditable items in the Inservice Inspection Ten-Year Class I and Class II Program, with the exception of the exploratory examinations of the shutdown cooling welds, the steam generator baffle plate lug welds and weld SG-1-THS-2.

DEFINITIONS

Volumetric: Ultrasonic Test (U.T.)

Visual: Visual Examination (V.T.)

Surface: Penetrant Test (P.T.); Magnetic Particle (M.T.)

Reportable indications (U.T.): Those indications which equal or exceed the recording requirements of the respective procedure and that are determined not to be geometric reflectors after evaluation by a level III.

No reportable indications (U.T.): A) Those indications which are less than the recording requirements of the respective procedure.
B) Those indications which equal or exceed the recording requirements of the respective procedure but that are determined to be caused by geometric reflectors after evaluation by a level III.

Satisfactory (V.T.): Those visual examinations for which no degradation of component integrity was observed, that meets the requirements of the respective procedure.

No reportable indications (P.T.): Those surface examinations which resulted in findings within the acceptance criteria listed in the respective procedure.

NUSCONDE PROCEDURES

<u>Procedure Number</u>	<u>Revision</u>	<u>& Date</u>	<u>Title</u>
NU-UT-1	3	12/13/82	Ultrasonic Examination Procedure General Requirements
NU-UT-2	1	12/13/82	Ultrasonic Examination Procedure For Austenetic Piping Welds
NU-UT-3	1	12/13/82	Ultrasonic Examination Procedure For Ferritic And Dissimilar Metal Piping Welds
NU-UT-5	0	3/18/83	Ultrasonic Examination Procedure For Thickness Measurements
NU-UT-18	0	3/18/81	Ultrasonic Examination Procedure For Steam Generator Welds
NU-VT-1	3	12/13/82	Procedure For Inservice Visual Examination
NU-LP-1	2	12/13/82	Procedure For Liquid Penetrant Examination
NU-MP-1	2	12/13/82	Procedure For Magnetic Particle Examination

COMBUSTION ENGINEERINGNONDESTRUCTIVE EXAMINATION PROCEDURES

<u>Procedure Number</u>	<u>Revision</u>	<u>Title</u>
6272-ISI-001	0	Automated Ultrasonic Examination Procedure For Reactor Vessel Welds
6272-ISI-004	4	Ultrasonic Examination Procedure For Reactor Vessel To Flange Weld
6272-ISI-005	1	Ultrasonic Examination Procedure For Reactor Vessel Flange Ligament Areas
00000-ISI-029	3	Generic Manual Ultrasonic Examination Procedure
6272-ISI-053	0	Procedure For ID Examination Of The Reactor Pressure Vessel
6272-ISI-056	1	Automated Ultrasonic Examination Procedure For Steam Genator Stay Cylinder Welds
6272-ISI-065	1	Procedure For The Remote Visual Examination Of A Reactor Pressure Vessel, Closure Head And Its Internals
00000-ISI-069	1	Procedure For The Oriention And Setup Of The Inservice Inspection Positioning System For The Inside Surface Examination Of Reactor Pressure Vessels
6272-ISI-076	0	Procedure For The Eddy Current Examination Of The Nozzle Projections
00000-ESS-117	3	Ultrasonic Instrument Linearity Verification

COMBUSTION ENGINEERINGENGINEERING NOTICES

<u>EN NUMBER</u>	<u>AFFECTED DOCUMENT NUMBER</u>	<u>ISSUE DATE</u>
MP-2-045	6272-ISI-001 REV.0	07/06/83
MP-2-046	6272-ISI-001 REV.0	08/31/83
MP-2-047	IR-ISI-016 REV.0	12/07/83
MP-2-048	6272-ISI-056 REV.1	11/13/83
MP-2-049	6272-ISI-056 REV.1	11/15/83

sp6

NUSCOPERSONNEL QUALIFICATIONS

<u>NUSCO</u>	<u>Method</u>	<u>ASNT-TC-1A Level</u>
Peter J. Durand	VT,PT,UT,RT,MT	II,II,I,II,II
Richard J. Fuller, Jr.	VT,PT,UT,MT	II,II,II,II
John F. Pinto	VT,PT,MT,RT	II,II,II,II
Steven L. Sikorski	VT,PT,UT,RT	III,III,III,III
Raymond A. West	VT,PT,UT,RT,MT	II,II,II,II,II

COMBUSTION ENGINEERINGPERSONNEL QUALIFICATIONS

<u>Name</u>	<u>Method</u>	<u>Level of Qualifications</u>
B. E. Allbee	UT,VT	II,II
T. J. Batzinger	UT,VT	I,II
J. L. Brignac	UT,VT	I,II
D. A. Brunner	VT	II
R. S. Devlin	UT	II
G. Fink	ET	I
J. R. Fox	UT	III
L. E. Germer	UT	I (ISI-2B Operator-PAR)
S. B. Gore	UT	I
M. A. Jutton	UT,ET	I,I
R. S. Kusy	UT,VT	II,II
J. P. Lareau	UT,ET,VT	III,III,III
M. C. McCahill	ET	I
A. S. Nelson	UT,ET	II(E),II
J. J. Pelletier	UT	I
W. T. Sampson	UT(+)	I (ISI-2B Operator-PAR)
A. Sielawko	UT,VT	II(E),II
D. H. Warren	VT	II (ISI-2B Operator-PAR)

NUSCOULTRASONIC TEST INSTRUMENT LIST

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>
Krautkramer Branson	USL-38	210158
Krautkramer Branson	USL-38	210449
Krautkramer Branson	USL-38	211178
Krautkramer Branson	USL-37	211849

NUSCOULTRASONIC TRANSDUCER LIST

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Frequency(MHz)</u>
Areo-Tech.	Gamma 1/2x1"	K23010	1.5 MHz
Areo-Tech.	Gamma 1/2x1"	B26091	2.25 MHz
Areo Tech.	Gamma 1/2" dia.	H08961	2.25 MHz
Areo Tech	Gamma 3/4" dia.	J05932	2.25 MHz
Areo-Tech	Gamma 1/2x1"	00841T	2.25 MHz
Areo-Tech	Gamma 1/2" dia.	B02363	2.25 Mhz
Areo-Tech	Gamma 1/2" dia.	K02124	2.25 MHz
Areo-Tech	MWB60-N4	#1	4.0 MHz
Areo-Tech	MWB60-N4	#3	4.0 MHz
Areo-Tech	MWB45-N4	#5	4.0 MHz
Areo-Tech	MWB45-N4	#9	4.0 MHz
Areo-Tech	MWB60	53476	4.0 MHz
Areo-Tech	Gamma 3/8" dia.	G02027	5.0 MHz
Sonic	GDD52 1/2" dia.	00783T	5.0 MHz
	Alpha 3/8" dia	D14303	10.0 MHz

NUSCOMAGNETIC PARTICLE TEST INSTRUMENT LIST

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>
Parker	Probe	7215

MATERIAL LIST

<u>Item</u>	<u>Manufacturer</u>	<u>Type</u>	<u>Batch Number</u>
UT Couplant	Areo-Tech	Exosen 20	0701802001
UT Couplant	Areo-Tech	Exosen 20	0903801401
UT Couplant	Areo-Tech	Exosen 20	80798
Spotcheck:			
Cleaner	Magnaflux	SKC-5	82G078
Penetrant	Magnaflux	SKL-HF/SKLS	81D100
Developer	Magnaflux	SKD-NF/ZP9B	82G073

COMBUSTION ENGINEERINGLIST OF NDE EQUIPMENTULTRASONIC TEST INSTRUMENTS

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>
	KBI-6000	311344
	KBI-6000	312865

ULTRASONIC TRANSDUCER LIST

<u>Manufacturer</u>	<u>Frequency</u>	<u>Size</u>	<u>Serial Number</u>
SUSI	2.25 MHz	3" Dia.	974
Panametrics	2.25 MHz	1" Dia.	58296
Panametrics	2.25 MHz	1" Dia.	58292
Panametrics	2.25 MHz	1" Dia.	58295
Panametrics	1 MHz	1" Dia.	58321
Panametrics	1 MHz	1" Dia.	58323
Panametrics	1 MHz	1" Dia.	57771
Panametrics	1 MHz	1" Dia.	57775
Panametrics	2.25 MHz	1" Dia.	50958
Panametrics	1 MHz	1" Dia.	54212
Panametrics	1 MHz	1" Dia.	54211
Panametrics	1 MHz	1" Dia.	57772
Panametrics	1 MHz	1" Dia.	58320
Panametrics	2.25 MHz	1" Dia.	50954
Panametrics	1 MHz	1" Dia.	58324

Panametrics

1 MHz

1" Dia.

57773

Panametrics

1 MHz

1" Dia.

57776

COMBUSTION ENGINEERINGLIST OF NDE EQUIPMENT (Cont'd.)

<u>Manufacturer</u>	<u>Frequency</u>	<u>Size</u>	<u>Serial Number</u>
Panametrics	1 MHZ	1" Dia.	57774
Panametrics	2.25 MHZ	1" Dia.	57786
Panametrics	2.25 MHZ	1" Dia.	50959
Panametrics	2.25 MHZ	1" Dia.	50058
Panametrics	2.25 MHZ	1" Dia.	54115
Panametrics	2.25 MHZ	1" Dia.	40342
Panametrics	2.25 MHZ	1" Dia.	40341
Panametrics	2.25 MHZ	1" Dia.	58293
Panametrics	2.25 MHZ	1" Dia.	58291
Panametrics	2.25 MHZ	1" Dia.	57785
Harsonic	2.25 MHZ	1" Dia.	W7615
Harsonic	2.25 MHZ	1" Dia.	W7612
Harsonic	2.25 MHZ	1" Dia.	W7613
Harsonic	2.25 MHZ	1" Dia.	W7611
Harsonic	2.25 MHZ	1" Dia.	W7614
Harsonic	2.25 MHZ	1" Dia.	W7616
Harsonic	2.25 MHZ	1" Dia.	W7617

COMBUSTION ENGINEERINGCALIBRATION STANDARDS

<u>Block Number</u>	<u>Drawing Number</u>	<u>Revision</u>
UT-1	B-245-391	3
UT-2	B-245-390	2
UT-3	B-245-389	2
UT-4	B-245-388	2
UT-5	B-245-387	3
UT-6	B-246-356	2
UT-7	B-246-372	3
UT-8	C-245-364	2
UT-9	C-NEU-661-076	0
UT-10	D-NEU-661-076	2
TB-52*	D-FIST-501-092	0

* This calibration standard was borrowed from Maine Yankee Atomic Power Company

EXCLUSIONS AND EXCEPTIONS

1. ASME Section XI Code Category B-I-1 examinations (clad patch) in the reactor vessel and closure head were deleted per the USNRC Docket No. 50-336. In addition, the Summer 1976 Addenda of Section XI deleted the requirement to perform these examinations.
2. Article I-4110 and I-4120 of Section XI were not performed daily (reactor vessel examination only) as required. Instead linearities were performed in accordance with the USNRC Regulatory Guide 1.150, Revision 1.

Conditions Noted

Volumetric, Surface and Visual Examinations were performed as required by Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition including the Summer 1975 Addenda.

Recordable indication on Weld THS-2, Steam Generator #2, was detected using the Liquid Penetrant Method. This indication was ground out, reexamined and found to be acceptable.

The recordable indications that were detected using the Ultrasonic Angle Beam Method were determined to be geometry in nature and acceptable.

The indications that were detected by the Straight Beam Method all were within the acceptable limits of the referenced Code.

There was an extensive analysis of the ultrasonic indication detected in the Steam Generator welds SG-1-THS-2 and SG-2-THS-2, during the last refueling outage. These indications were found to be acceptable by the Northeast Utilities Engineering Department and the Level III Ultrasonic Specialist.

The ultrasonic examination conducted of weld X-74, in the shut-down cooling line detected a recordable indication that was suspected to be attributed to IGSCC. An exploratory examination was performed by cutting a 2 inch hole into the pipe adjacent to the weld. The inside surface of the area of interest was liquid penetrant examined and found to be acceptable. Based on this examination the ultrasonic indication was classified as geometry by our Engineering Department and Level III Ultrasonic Specialist.

The various deficient conditions noted on the Support Members of the Components for Piping, Valves and Pumps were subsequently repaired or evaluated and verified to be acceptable by engineering personnel.

Of the 65 welds ultrasonically examined in the reactor vessel, primary pipe and steam generator stay cylinders, there were 38 indications recorded, 22 were due to geometry and the remaining 16 were evaluated and found acceptable.

Of the 57 areas inspected visually (Reactor Vessel and Internals) there were 2 recordable indications detected. One was evaluated to be acceptable by informational eddy current techniques and the other was confirmed by informational ultrasonic and eddy current techniques. Analysis of the latter lead to a major repair program which lasted from September to December, 1983 and is the subject of C-E Report IR-ISI-031, Reactor Vessel Core Barrel Nondestructive Examination Report.

NUSCOCATEGORY B-J

Examination Area: Pressure Retaining Welds In Piping

Examination Method: Volumetric (UT), Or When Noted Surface (PT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
BPY-C-5003	No Reportable Indications	None
BPY-C-5005	No Reportable Indications	None
BPY-C-5007	No Reportable Indications	None
BPY-C-5009	No Reportable Indications	None
BPY-C-5011	No Reportable Indications	None
BPY-C-5013	No Reportable Indications	None
BPY-C-5015	No Reportable Indications	None
BPY-C-5019	No Reportable Indications	None
BPY-C-5021	No Reportable Indications	PT
BPY-C-5023	No Reportable Indications	PT
BPY-C-5025	No Reportable Indications	PT
BPY-C-5027	No Reportable Indications	PT
BSI-C-1021	No Reportable Indications	None
BSI-C-1023	No Reportable Indications	None
BSI-C-3022	No Reportable Indications	None
BSI-C-3020	No Reportable Indications	None
BSI-C-4018	No Reportable Indications	None
BSI-C-4020	No Reportable Indications	None

NUSCOCATEGORY B-K-2

Examination Area: Support Components For Piping, Valves And Pumps

Examination Method: Visual

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
SIAH-14	Satisfactory	None
SIAH-38	Satisfactory	None
SIAH-13	Satisfactory	None
SIAH-12	Satisfactory	None
SIAH-11	Satisfactory	None
SIAH-10	Satisfactory	None
SIAH-9	Satisfactory	None
SIAH-8	Satisfactory	None
SIBH-20	Satisfactory	None
SIBH-9	Satisfactory	None
SIBH-17	Satisfactory	None
SIDH-6	Satisfactory	None
SIDH-10	Satisfactory	None
psH-27	Satisfactory	None
psh-20	Satisfactory	None
PSH-30	Satisfactory	None
PSH-31	Satisfactory	None
PSH-23	Satisfactory	None
PSH-24	Satisfactory	None
PSH-34	Satisfactory	None
PSS-7	Satisfactory	None
PSS-7	Satisfactory	None
PSS-11	Satisfactory	None

NUSCOCATEGORY B-K-2

Examination Area: Support Components For Piping, Valves and Pumps

Examination Method: Visual

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
CVCH-32	Satisfactory	None
CVCH-34	Satisfactory	None
CVCH-36	Satisfactory	None
PSH-6	Satisfactory	None
DP-8	Satisfactory	None
DP-158	Satisfactory	None
DP-156	Satisfactory	None
CCLH-2	Satisfactory	None
CCLH-4	Satisfactory	None
DP-518	Satisfactory	None
DP-535	Satisfactory	None
CCLH-1	Satisfactory	None

NUSCOCATEGORY C-A

Examination Area: Pressure Retaining Welds In Pressure Vessels

Examination Method: Volumetric

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
1-SC-3	No Reportable Indication	None
SG-1-THS-1	No Reportable Indication	None
SG-1-THS-2	Indication, See Appendices	Information only not for code credit.
SIBC-A1	No Reportable Indications	None

NUSCOCATEGORY C-B

Examination Area: Pressure Retaining Nozzle Welds In Vessels

Examination Method: Volumetric (UT) Or When Noted Surface (PT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
SG-2-MS-1	Reportable Indication	Acceptable By Analysis
SIBC-B2	No Reportable Indications	PT

NUSCOCATEGORY C-C

Examination Area: Integrally Welded Attachments To Vessels

Examination Method: Surface (MT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
SG-1-CC-1	None	Deferred
SG-1-CC-2	None	Deferred
SG-1-CC-3	No Recordable Indications	None
SG-1-CC-4	No Recordable Indications	None
SG-1-CC-5	No Recordable Indications	None
SG-1-CC-6	No Recordable Indications	None
SG-1-CC-7	No Recordable Indications	None
SG-1-CC-8	No Recordable Indications	None

NUSCOCATEGORY C-E-1

Examination Area: Support Members For Piping, Valves And Pumps

Examination Method: Surface (VT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
502004	Satisfactory	None
502014	Satisfactory	None
402078	Satisfactory	None
399457	Satisfactory	None
402060	Satisfactory	None
412017	Satisfactory	None
404020	Satisfactory	None
307009	Satisfactory	None

NUSCOCATEGORY C-E-2

Examination Area: Support Components For Piping, Valves And Pumps

Examination Method: Visual (VT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
402052	Satisfactory	None
402114	Satisfactory	None
302034	Satisfactory	None
402043	Satisfactory	None
407001	Satisfactory	None
312009	Satisfactory	None

NUSCOCATEGORY C-F

Examination Area: Pressure Retaining Welds In Piping, Pumps, And
Valves In Systems Which Circulate Reactor Coolant

Examination Method: Surface (PT) and when noted Volumetric (UT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
SI-CF-X-47	No Reportable Indications	None
SI-CF-X-57	No Reportable Indications	None
SI-CF-X-32	No Reportable Indications	None
SI-CF-X-36	No Reportable Indications	None
SI-CF-A-40	No Reportable Indications	None
SI-CF-B-49	No Reportable Indications	UT
SI-CF-C-8	No Reportable Indications	None
SI-CF-D-5	No Reportable Indications	None
SI-CF-D-9	No Reportable Indications	None
SI-CF-A-106	No Reportable Indications	None
SI-CF-A-108	No Reportable Indications	None
SI-CF-B-112	No Reportable Indications	None
SI-CF-B-116	No Reportable Indications	None
SI-CF-B-124	No reportable Indications	None
SI-CF-B-129	No reportable Indications	None
SI-CF-A-2	No reportable Indications	None
SI-CF-A-36	No reportable Indications	None
SI-CF-X-63	No reportable Indications	None
SI-CF-X-74	No Reportable Indications	UT*
SIT-CF-B2	No Reportable Indications	None
HSI-CF-1	No Reportable Indications	None
HSI-CF-5	No Reportable Indications	None
HSI-CF-14	No Reportable Indications	None
HSI-CF-25	No Reportable Indications	None
HSI-CF-29	No Reportable Indications	None

* Complete with supplemental PT examination of the weld surface
inside the pipe

NUSCOCATEGORY C-G

Examination Area: Pressure Retaining Welds In Piping, Pumps, And
Valves Which Circulate Other Than Reactor Coolant

Examination Method: Volumetric (UT)

<u>Examination Item</u>	<u>Results</u>	<u>Remarks</u>
FWB-C-G-13	No Reportable Indications	None
FWA-C-G-2	No Reportable Indications	None
MSA-CG-8	No Reportable Indications	None
MSB-CG-3	No Reportable Indications	None

COMBUSTION ENGINEERINGEXAMINATION DETAILS & RESULTS

This section outlines the examination details and results by listing the examination areas by zones. All examinations which were performed during this outage are included in these tables. Included in this listing are information only, examinations in excess of code requirements and examinations which were performed in response to USNRC Regulatory Guide 1.150.

EXAMINATION TECHNIQUES

The nondestructive testing was performed using automated ultrasonic, automated eddy current and visual techniques in accordance with written procedures required by IWA-1400 of Section XI of the ASME Boiler and Pressure Vessel Code.

EXAMINATION SUMMARY DEFINITIONS

There are four columns under the general heading "Examination Results". These columns are titled (1) No Indications, (2) Insignificant Indications, (3) Significant Indications, Geometrical, and (4) Significant Indications, Other.

For this listing, all Ut indications with amplitude equal to or greater than reporting response were recorded, evaluated and reported in the tables. The term "No Indications" was used when the amplitude was less than the reporting response or when no indications were observed. All recorded indications are considered significant with those caused by component geometry listed as "Geometrical" and true indications listed as "Other". The term "Insignificant Indications" was used for visual indications such as surface scratches, sling marks, weld splatter, etc.

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
BHC-1	UT	001-13			X		
BHV-1	UT	001-13			X		
BHV-2	UT	001-13			X		
BHV-3	UT	001-13			X		
BHV-4	UT	001-13			X		
BHV-5	UT	001-13 001-14			X X		
BHV-6	UT	001-13 001-14			X X		
HS-1	UT	001-13	X				
LSL-1	UT	001-5 001-11 001-12	X X X				
LSL-2	UT	001-6 001-11 001-12				X X X	Clad Noise Clad Noise Clad Noise
LSL-3	UT	001-6 001-12	X X				
MSL-1	UT	001-5 001-11 001-12	X X		X		

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks		
			No Indications	Insignificant Indications	Significant Indications				
					Geometrical	Other			
MSL-2	UT	001-6	X				Sized Acceptable		
		001-11	X						
		001-12	X						
MSL-3	UT	001-6	X			X		Sized Acceptable	
		001-11							
		001-12	X						
USL-1	UT	001-8	X						Sized Acceptable
USL-2	UT	001-9			X				
USL-3	UT	001-9			X				
		001-18				X			
SC-1	UT	001-9			X		Sized Acceptable Sized Acceptable		
SC-2	UT	001-6	X						
		001-7	X						
		001-9	X						
	UT	001-10			X	X			
		001-17			X	X			
FS-1	UT	001-14	X						
		004-1	X						
NS-1	UT	001-3			X				
		001-16	X						
NS-2	UT	001-3			X				
		001-16	X						

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
NS-3	UT	001-3 001-15	X		X		Sized Acceptable
NS-4	UT	001-3 001-15	X		X		
NS-5	UT	001-13 001-15	X		X		
NS-6	UT	001-3 001-16	X		X		
IR-1	UT	001-4	X				
IR-2	UT	001-4	X				
IR-3	UT	001-4	X				
IR-4	UT	001-4	X				
IR-5	UT	001-4	X				
IR-6	UT	001-4	X				
P-1-C-1A	UT	001-2	X				
P-3-C-1A	UT	001-2				X	
P-14-C-1A	UT	001-2	X				
P-10-C-1A	UT	001-1	X				
P-18-C-1A							

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
P-5-C-1A	UT	001-2			X		Thermal Shield removed under major repair program
L-37 thru L-54	UT	005-1	X				
CBGL-1	VT	065-8		X			
CBGL-2	VT	065-8		X			
CBGL-3	VT	056-8		X			
CBGL-4	VT	065-8		X			
CBMS	VT	065-22	X				
ONP-1	VT	065-2	X				
ONP-2	VT	065-2	X				
CSB	VT	065-6	X				
TSP	VT	065-9				X	
CBGW	VT	065-14	X				
CSW	VT	064-4	X				
CSA	VT	065-4	X				

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks	
			No Indications	Insignificant Indications	Significant Indications			
					Geometrical	Other		
LCSP	VT	065-1 065-5				X	Debris from thermal shield located on plate	
SB-1	VT	065-15	X					
SB-2	VT	065-23	X					
SB-3	VT	065-23	X					
SB-4	VT	065-23	X					
SB-5	VT	065-23	X					
SB-6	VT	065-23	X					
UGHDR	VT	065-16	X					
UGMS	VT	065-3 065-16	X X					
UGKW-1	VT	---	*					Unaccessible
UGKW-2	VT	065-19		X				
UGKW-3	VT	065-19		X				
UGKW-4	VT	---	*				Unaccessible	
UGFAP	VT	065-18	X					
PCES	VT	065-17	X					
KW-1	VT	065-13		X				

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
KW-2	VT	065-13		X			
KW-3	VT	065-13		X			
KW-4	VT	065-13		X			
ONB-1	VT	065-10 076-1	X				X Indications were evaluated and found acceptable by information ECT techniques
ONB-2	VT	065-10 076-1	X				X Indications were evaluated and found acceptable by information ECT techniques
SC-1	VT	065-11	X				
SC-2	VT	065-11	X				
SC-3	VT	065-11	X				
SC-4	VT	065-11	X				
SC-5	VT	065-11	X				
SC-6	VT	065-11	X				
CBAK-1	VT	065-7		X			
CBAK-2	VT	065-7		X			
CBAK-3	VT	065-7		X			

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
CBAK-4	VT	065-7		X			
IS-1	VT	065-12	X				
IS-2	VT	065-12	X				
IS-3	VT	065-12	X				
IS-4	VT	065-12	X				
IS-5	VT	065-12	X				
IS-6	VT	065-12	X				
CSL-1	VT	065-21	X				
CSL-2	VT	065-21	X				
CSL-3	VT	065-21	X				
CSL-4	VT	065-21	X				
CSL-5	VT	065-21	X				
CSL-6	VT	065-21	X				
CSL-7	VT	065-21	X				
CSL-8	VT	065-21	X				
CSL-9	VT	065-21	X				
FBS	VT	065-20	X				

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
Class 1 Leak Test	VT	N/A		X			

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
SG-2-TSS-2	UT	056-1	X				Sized Acceptable
SG-2-TSS-3	UT	056-1			X	X	
SG-2-TSS-1	UT	056-1	X				
SG-2-SC-1	UT	056-2	X				

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
P-1-C-1	UT	001-2	X				
P-1-L-1	UT	001-2	X				
P-1-L-2	UT	001-2	X				

COMBUSTION ENGINEERING
NON-DESTRUCTIVE EXAMINATION SUMMARY

Examination Area	Examination Method	Examination Data Sheet Number	Examination Results				Remarks
			No Indications	Insignificant Indications	Significant Indications		
					Geometrical	Other	
P-10-C-1	UT	001-1				X	Sized Acceptable
P-10-L-1	UT	001-1	X				
P-10-L-2	UT	001-1	X				

NORTHEAST UTILITIES



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

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
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April 3, 1984
MP-5927
Docket No. 50-336

Dr. Thomas E. Murley
Director, Region I
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Reference: 1. Facility Operating License No. DPR-65
2. Docket 50-336
3. ASME Boiler and Pressure Vessel Code 1974 Edition and
Addenda through Summer 1975

Dear Dr. Murley:

In accordance with Reference 3, the Millstone Unit 2 1983 Inservice Inspection Report is submitted for your information and use. Inspections covered in this report were performed between June 6, 1983 and January 3, 1984.

Yours truly,

NORTHEAST NUCLEAR ENERGY COMPANY

A handwritten signature in cursive script, reading 'E. J. Mroczka'.

E. J. Mroczka

Station Superintendent
Millstone Nuclear Power Station

EJM/TRB:ck

*Original
To: I & E Files
A047
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