

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
MIDDLESEX 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
(203) 665-5000

June 1, 1992

Docket No. 50-423
B14146

Re: 10CFR50.55a(g)

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

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
Response to Request for Additional Information
Inservice Inspection Program

By letter dated February 3, 1991,⁽¹⁾ the Staff forwarded the Safety Evaluation Report (SER) and the Technical Evaluation Report (TER) approving the proposed alternative examinations and tests. In the report, the Staff determined that the relief requests were acceptable for the 10-year interval from April 26, 1986, to April 26, 1996, with the following four exceptions: (1) Northeast Nuclear Energy Company (NNECO) did not provide sufficient information for hydrostatic testing of Class 1, 2, and 3 pressure boundaries; (2) insufficient information was provided in the ISI to determine compliance to the scheduling requirements of IWB-2412-1 and ICW-2412-1; (3) the Staff recommended that the licensee upgrade the examination of Class 2 pipe welds to the 1983 Edition, Winter 1985 Addenda; (4) Relief Request IR-9 was granted conditionally upon NNECO providing additional assurances for the recommended alternative examination.

On October 30, 1991,⁽²⁾ NNECO submitted the revised Millstone Unit No. 3 Inservice Inspection Program Summary Report which incorporated the information requested by the Staff in their SER and additional Requests for Relief from ASME Section XI to the NRC. During a telephone conversation with the NRC Staff on April 13, 1992, NNECO was requested to provide additional information regarding the Millstone Unit No. 3 First 10-Year Inservice Inspection Program. Specifically, the Staff requested that NNECO provide additional information for

- (1) J. F. Stolz letter to E. J. Mroczka, "First Ten-Year Program Plan and Inservice Inspection Relief Request," dated February 8, 1991.
- (2) E. J. Mroczka letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Inservice Inspection Program Summary Report and Request For Relief from ASME Section XI," dated October 30, 1991.

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Q PDR

ACT 7

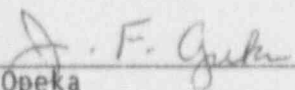
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6 items in order to complete its review of the program. Accordingly, enclosed as Attachment 1, is NNECO's response to those 6 items. Also enclosed is revised relief request IR-1.

We trust this additional information adequately addresses the Staff's questions. Should the Staff require any additional information, please contact us.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



J. F. Opeka
Executive Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
W. J. Raymond, Senior Resident Inspector, Millstone Unit Nos. 1, 2, and 3

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Attachment 1

Millstone Nuclear Power Station, Unit No. 3
Response to Request for Additional Information
Inservice Inspection Program

June 1992

Millstone Nuclear Power Station, Unit No. 3
Response to Request for Additional Information
Inservice Inspection Program

Item No. 1

Question: Class 2 Welds: Are the CHS and SIH part of the ECC system? Were the welds in these systems excluded from examination based on wall thickness?

Response: Yes. The piping in these systems are < 3/8 inch in wall thickness and are excluded from examinations, but are included in the total weld count for C-F-1 category welds to which the 7.5% sampling is applied.

Item No. 2

Question: Request for Relief IR-1 (Revision 2): Regarding the welds where a manual examination from the OD is "suggested"; will the manual examination be performed? On Weld #5 (torus/dollar plate), the drawing depicts the inspection tool as clearing instrument nozzles. Why can't a partial examination from the ID be performed? Other utilities have performed partial exams of these welds, how does Millstone 3 differ?

Response: Relief Request IR-1 has been revised and is attached. Request for relief is being withdrawn for welds 5, 15, 16, 17 and 18. Based on preservice inspection results, a remote (ID) UT Examination encountered major interferences from the instrument nozzles. It is understood that NNECO will investigate any advances in RPV tooling to address the inaccessibilities noted during PSI. Based on inspection results, inservice, it will be determined if a supplementary manual ultrasonic examination can be performed (an ALARA review will determine if this is feasible) or a request for Relief of the inaccessible areas will be submitted.

Item No. 3

Question: Request for Relief IR-2 (Revision 2): The subject welds were included in relief request that was previously granted in an SER dated February 8, 1991. Why was this resubmitted? Just because Weld 103-101 was not included?

Response: Yes. Weld 103-101 was removed from Relief Request IR-2 and is the subject of a separate request for Relief, Number IR-16. Request for

relief was originally based on a 7 percent examination volume limitation (which was approved in SER dated February 8, 1991). Further investigation revealed that the weld was completely inaccessible and was resubmitted under a separate request for relief.

Item No. 4

Question: Request for Relief IR-9 (Revision 1): This relief request to perform a full volumetric (on safe-end welds) in lieu of a surface exam was previously granted provided that the procedures were demonstrated on OD connected "flaws." What type of flaws are being used? Has the demonstration been performed yet?

Response: No. The performance demonstration is scheduled approximately 6 months prior to Refueling Outage No. 6, currently November 1996. NNECO will demonstrate that OD cracks can be detected using the proposed alternative volumetric examination.

Item No. 5

Question: Request for Relief IR-16: Sketches 1 and 2 conflict regarding the position of the weld. It is not clear what portion of the weld is obstructed. Can a partial examination be performed? Could the shroud be lifted enough to perform a one-sided examination?

Response: Relief Request IR-16 is being withdrawn at this time. NNECO will investigate during the next refueling outage if a partial examination can be performed. Also, in conjunction with this a radiation exposure (ALARA) review of the suggested activity (lifting the shroud) will be performed to determine if this is feasible.

Item No. 6

Question: Scheduling per IWB/C-2412-1: In the October 30, 1991 submittal, a listing of items scheduled for examination was provided in Table G. This schedule is based on Examination Category, but provides no information on how the exams are distributed. Which nozzle-to-vessel welds (B-D) were examined during the first interval?

Response: Reactor Pressure Vessel (RPV) outlet nozzles on loops 1 and 3 were examined during Refueling Outage No. 2 (RF02) to meet the first period requirements of Code Category B-D. During the telephone conversation the question was asked whether the safe-end-to-nozzle welds (B-F Category) were examined with the B-D Category components. It was stated that only a partial examination was performed during RF02 due to examination equipment failure. The examination was limited to volume C-D-E-F of Figure IWB-2500-8. NNECO will not take any Code Credit for these B-F Category weld examinations and has deferred them to Refueling Outage No. 6 (RF06). No relief is

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required for this deferral because the Code does not require the B-F Category welds to be performed in conjunction with the B-D Category Nozzles (Table IWB-2500-1, Category B-F, Exam Note 2). NNECO has performed examinations on other nozzle-to-safe-end welds in the first period to meet the scheduling requirements of IWB-2412 for Category B-F. Table G has been updated (attached) to show the deferral of these two B-F Category Examinations until the third period (RF06) and that no credit will be taken for the first period (RF02) examinations.

Millstone Nuclear Power Station Unit No. 3
Relief From In-Service Inspection Requirements

Relief Request: IR-1, Rev. 3

Pressure retaining welds in reactor vessel.

Component Identification:

Code Class: 1

Examination Category: B-A

Code Requirement:

A volumetric (ultrasonic) examination of essentially 100 percent of the weld length shall be conducted for the following items in accordance with ASME B&PV Code, 1983 Edition through the Summer 1983 Addenda, Article IWB-2500:

<u>Item</u>	<u>Description</u>
B1.12	Longitudinal shell welds
B1.21	Head circumferential welds

Code Relief Request:

Pursuant to 10CFR50-50(a)(g)5(iii), relief is requested from performing the in-service volumetric examination of the inaccessible portion of the subject vessel welds.

Basis for Relief:

Geometric configuration and permanent obstructions prevent a 100 percent volumetric examination. The ISI limitations and the specific relief as they apply to each weld, are noted in Table 1.

These welds received both volumetric examination by radiography and surface examinations during fabrication, in accordance with ASME Section III requirements which provide adequate assurance of the structural integrity of the welds.

Proposed Alternate Examinations:

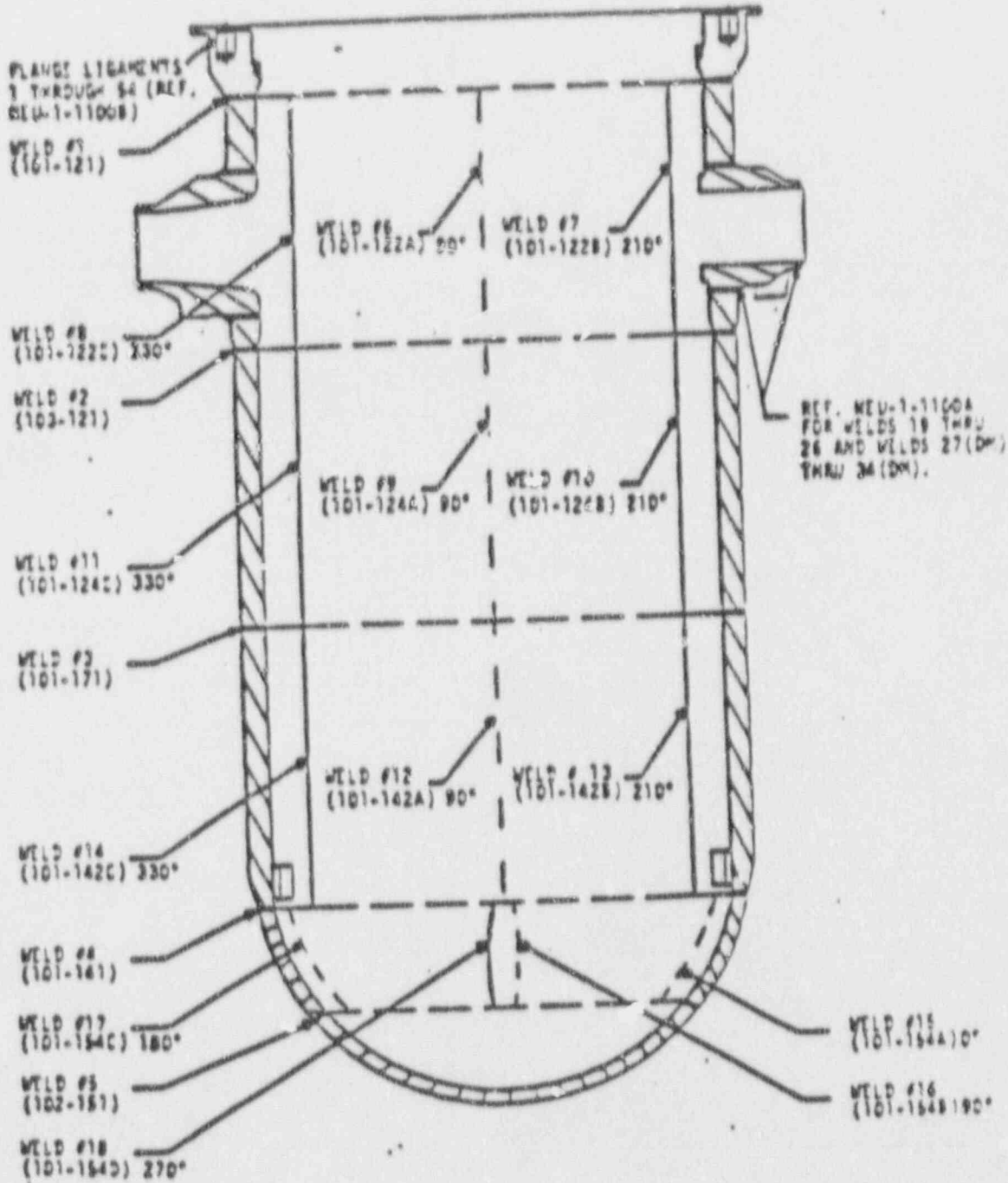
- A. The subject welds will receive a volumetric examination on the accessible portions in accordance with Section XI (IWB-2500-1).
- B. An in-service hydrostatic test will be conducted on the Class 1 pressure boundary of which these welds are a part thereof (IWB-2500-1).
- C. In-service system leakage tests will be performed per Category B-P, IWB-2500-1.

ISI LIMITATION

ITEM NO.	WELD NO./DESCRIPTION	MANUAL	REMOTE	COMMENTS
B1.21	#4 Lower Shell to Lower Head	N/A	Core Lugs	<p>A. This weld is 100% accessible from the lower head side. Examined with 45° and 60° axially [one direction] and circumferentially [both directions].</p> <p>B. This weld is 70% accessible from the lower shell side. Examined axially and circumferentially. Six core lugs occupying a total of about 17° each preclude four directional examination of about 153° of weld 4 as examined from the lower shell side. See Figure 2A.</p> <p>NOTE: Core lug obstructions are considered normal in the in-service examination of lower shell to lower head welds from the shell side. No special considerations are necessary for future examinations other than an estimate of the examination not practical from both directions due to restrictions.</p>
B1.12	Welds 6, 7, and 8 Upper shell long.	N/A	Normal nozzle geometry (major limitation)	ISI will be conducted to maximum extent practical (reference Figure 3). Will be examined similarly at the end of the first interval.

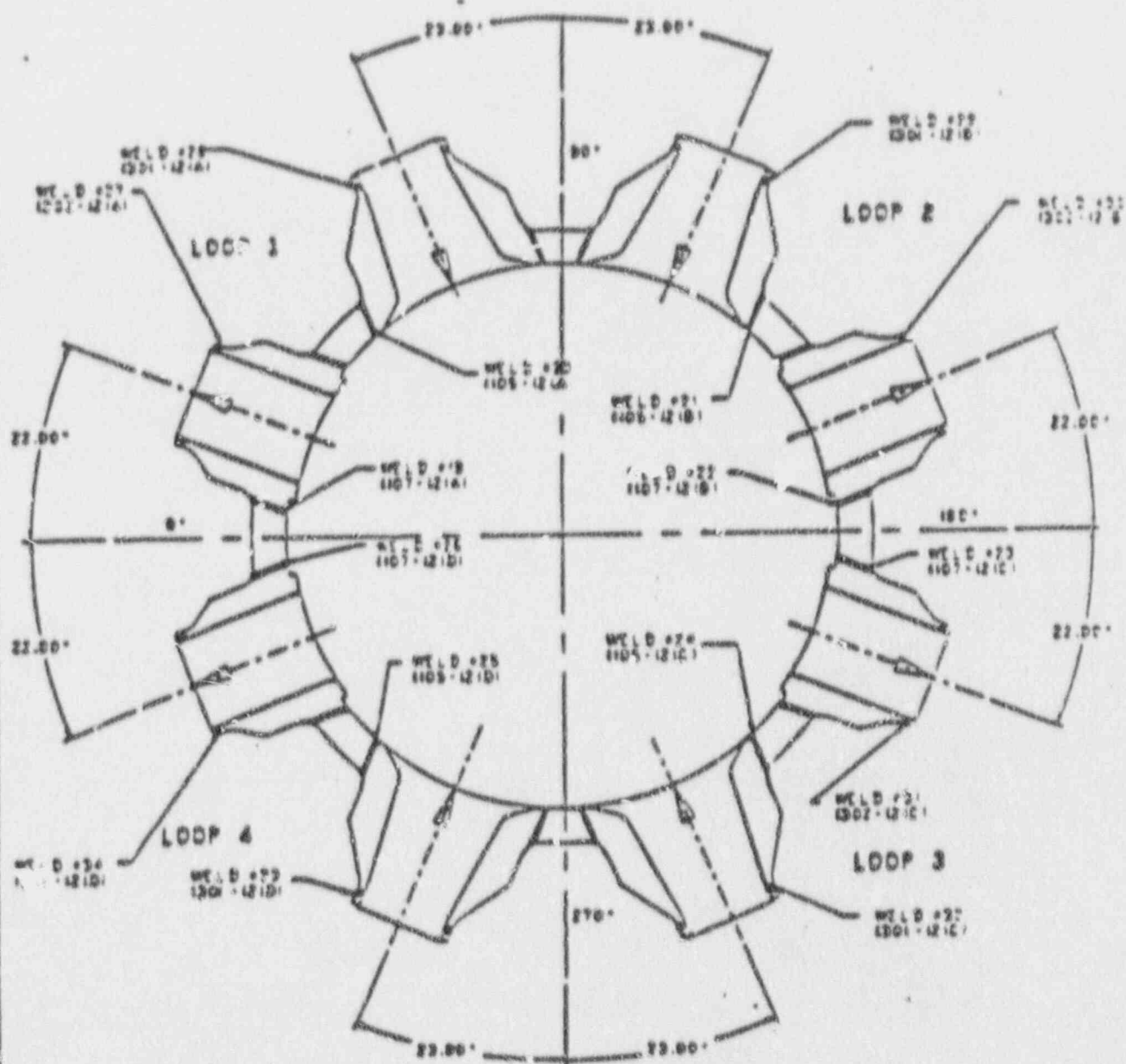
FIGURE 1

REACTOR VESSEL



ILLUSTRATIVE ONLY

FIGURE 2
 REACTOR VESSEL
 NOZZLE ORIENTATION



ILLUSTRATIVE ONLY

WESTINGHOUSE NUCLEAR SERVICE DIVISION
INSPECTION SERVICES

GENERAL - INDICATION DATA

PLANT MILLSTONE UNIT III SKETCH NEU-1-1100
 SYST. COMP. REACTOR VESSEL BOTTOM HEAD PL. ID. 151-147 REV D FC 1
 EXAMINER Richard W. ... II DATE 10-10-84
LEVEL D

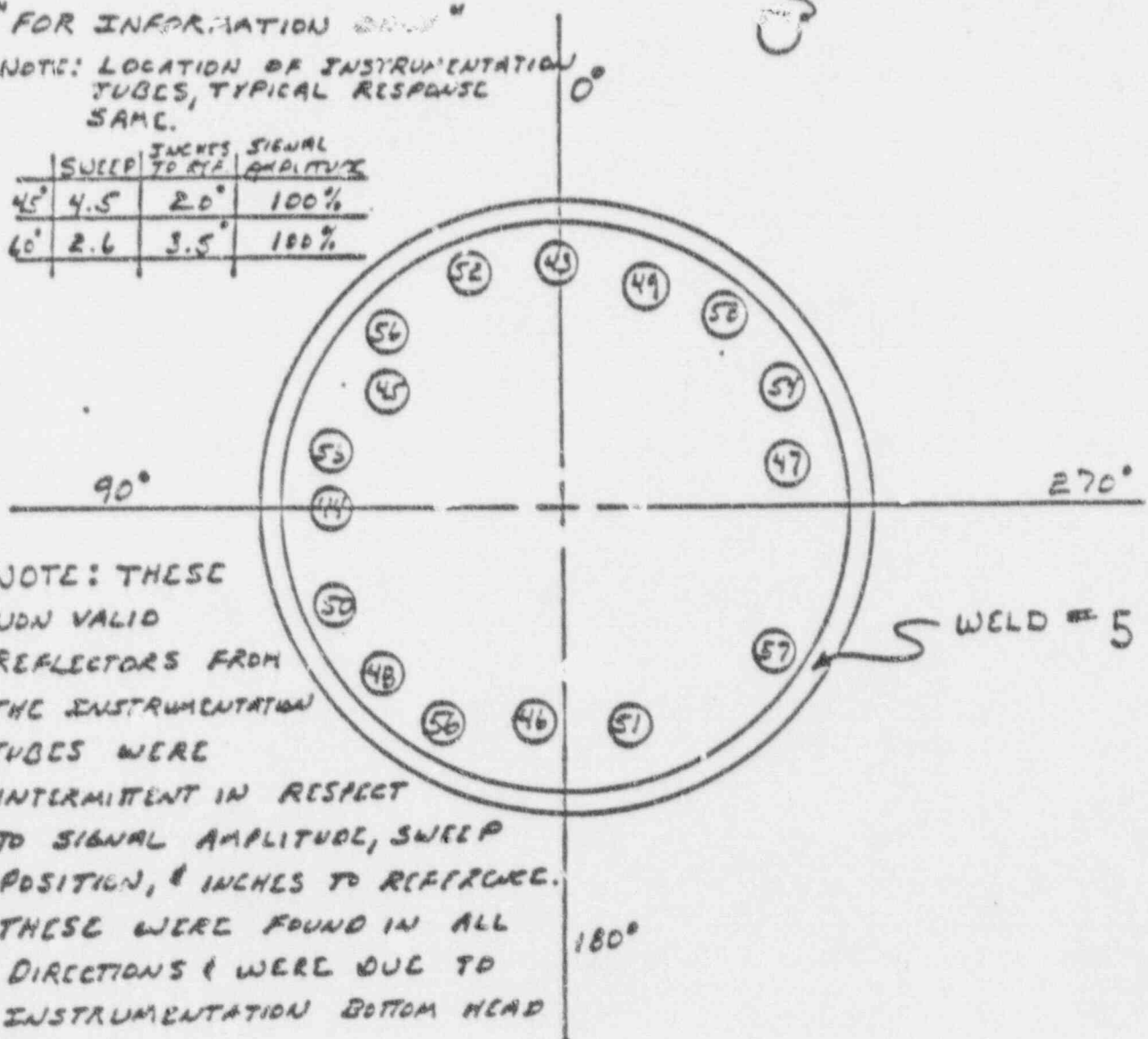
DETECTED BY UT PT _____ MT _____ VT _____ IDENT NO _____

PROVIDE SUFFICIENT INFORMATION TO DESCRIBE SIZE, LOCATION AND TYPE OF INDICATION. DESCRIBE EXTRA OR SPECIAL EQUIPMENT IF USED FOR SIZING OR REPORTING. IF NECESSARY INCLUDE SKETCH SHOWING GENERAL CONFIGURATION OF ITEM OR AREA.

"FOR INFORMATION ONLY"

NOTE: LOCATION OF INSTRUMENTATION TUBES, TYPICAL RESPONSE SAME.

	SWEEP	INCHES TO REF.	SIGNAL AMPLITUDE
45°	4.5	2.0	100%
60°	2.6	3.5	100%



NOTE: THESE NON VALID REFLECTORS FROM THE INSTRUMENTATION TUBES WERE INTERMITTENT IN RESPECT TO SIGNAL AMPLITUDE, SWEEP POSITION, & INCHES TO REFERENCE. THESE WERE FOUND IN ALL DIRECTIONS & WERE DUE TO INSTRUMENTATION BOTTOM HEAD PENETRATIONS.

FIGURE 1A

FIGURE 2
Extent of Remote
Examination
MERIDIONAL WELDS

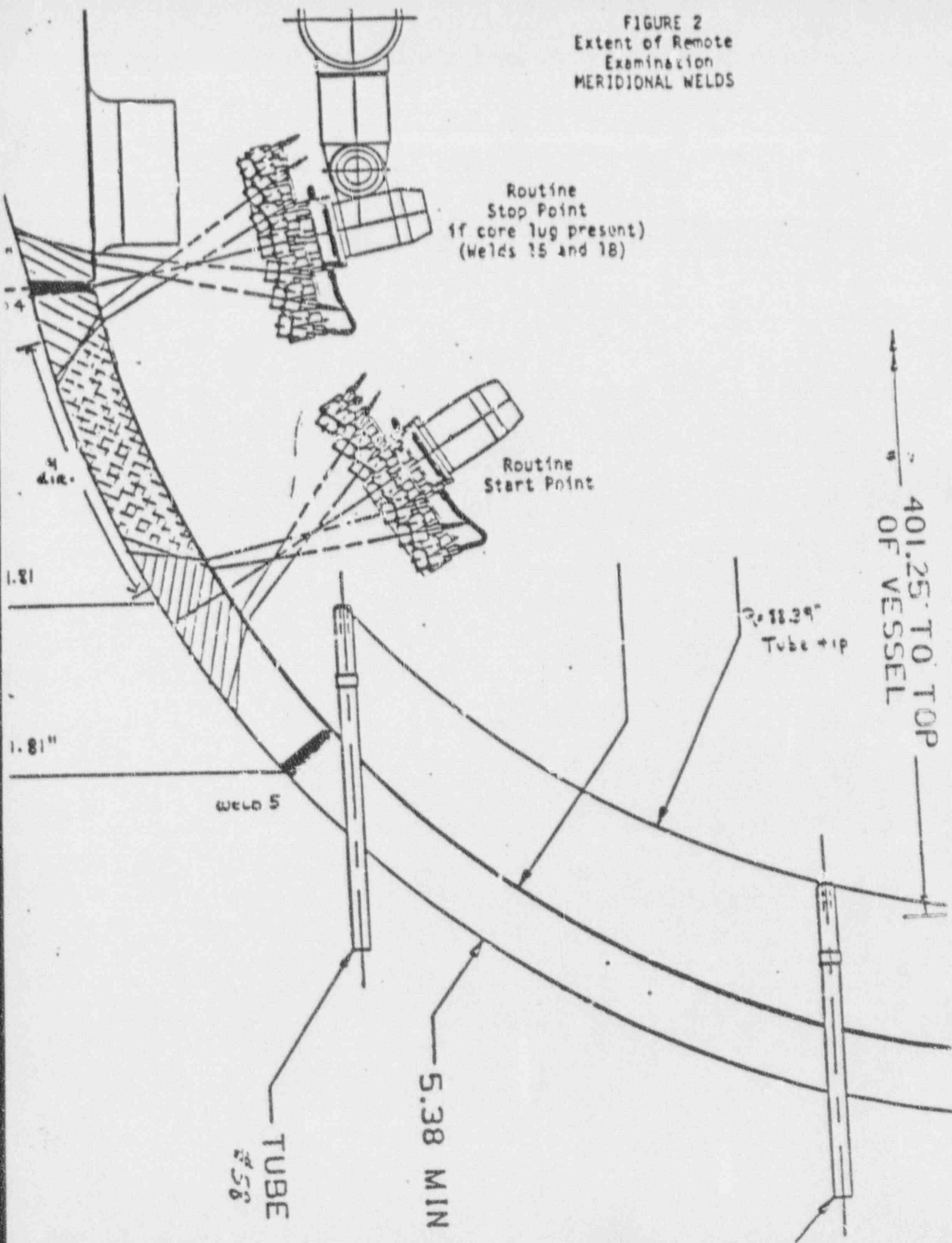


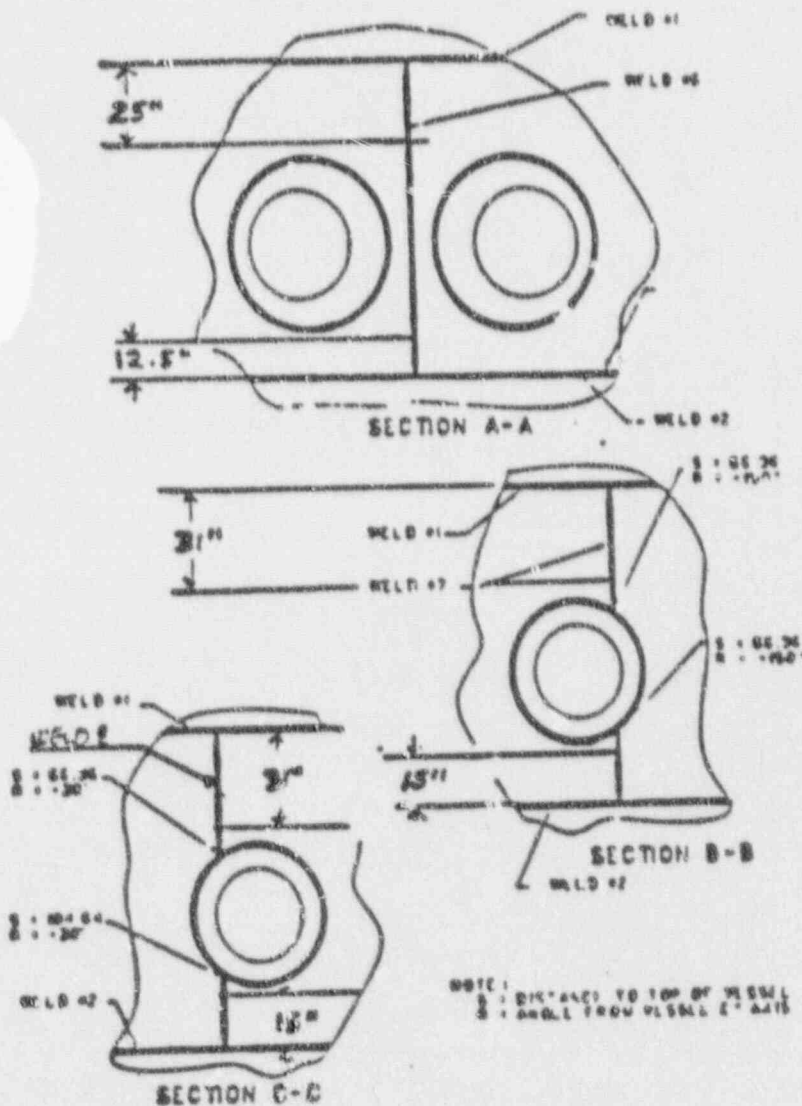
FIGURE 3

ESTIMATES OF THE PERCENTAGES OF
WELDS 6, 7 AND 8 WHICH ARE AVAILABLE
FOR MEANINGFUL 4 DIRECTIONAL EXAMINATION

WELD 6 - 37%

WELD 7 - 47%

WELD 8 - 47%



MILLSTONE UNIT 3
ISI SUMMARY
IN-SERVICE INSPECTION PROGRAM SCHEDULE
FIRST TEN-YEAR INTERVAL

TABLE G

CATEGORY	TOTAL ITEMS	SCHEDULED		PERIOD #1		PERIOD #2		PERIOD #3	
		ITEMS	PCT	SCHEDULED	PCT	SCHEDULED	PCT	SCHEDULED	PCT
AUGMENT	581	549	94.4	153	27.9	206	37.4	203	36.9
B-A	24	23	95.8	6	26.1	0	0.0	18	78.2
B-B	8	8	100.0	2	37.5	2	25.0	3	37.5
B-D	44	44	100.0	8	18.2	10	22.7	26	59.0
B-E	2	2	100.0	0	0.0	0	0.0	2	100.0
B-F	22	22	100.0	4	18.2	7	31.8	11	50.0
B-G-1	248	221	89.1	50	22.6	66	29.8	105	47.5
B-G-2	67	67	100.0	19	28.4	26	38.7	22	32.8
B-H	9	9	100.0	1	11.1	8	88.8	0	0.0
B-J	1,193	607	50.8	146	24.1	251	41.2	212	34.9
B-K-1	98	82	83.6	16	20.0	16	19.5	50	60.9
B-L-2	4	1	25.0	1	100.0	0	0.0	0	0.0
B-M-2	40	1	2.5	1	50.0	0	0.0	0	0.0
B-N-1	1	1	100.0	1	100.0	1	100.0	1	100.0
B-N-2	8	8	100.0	0	0.0	0	0.0	8	100.0
B-O	1	1	100.0	0	0.0	0	0.0	1	100.0
B-P	12	12	100.0	12	100.0	12	100.0	12	100.0
C-A	24	7	29.1	3	42.9	1	14.2	4	57.1
C-B	28	12	42.8	4	33.3	4	33.3	4	33.3
C-C	43	26	60.4	10	38.5	7	26.8	7	26.9
C-D	6	2	33.3	1	50.0	0	0.0	1	50.0
C-F-1	2,472	186	7.5	48	25.8	28	15.0	110	59.1
C-F-2	513	55	10.7	29	52.7	16	29.0	10	18.0
C-G	22	10	45.4	4	40.0	0	0.0	6	60.0
C-H	20	20	100.0	20	100.0	20	100.0	20	100.0
D-A	25	2	8.0	1	50.0	1	50.0	1	50.0
D-B	100	78	78.0	17	21.8	24	30.7	42	53.8
D-C	3	3	100.0	1	33.3	1	33.3	1	33.3
F-A	9	4	44.4	1	25.0	2	50.0	1	25.0
F-B	933	606	64.9	290	47.9	194	31.7	140	23.1
F-C	1,054	361	34.2	151	16.4	137	18.6	83	22.9