Duke Power
A Duke Energy Company

H. B. Barron
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July 10, 1997

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

Subject: McGuire Nuclear Station, Unit 1
Docket No. 50-369
Request for Alternative Examination, M97-002

Dear Sir:

Duke Power Company has determined that it is unable to completely satisfy the requirements for the augmented reactor vessel shell weld examination for McGuire Nuclear Station, Unit I as specified in 10CFR50.55a(g)(6)(ii)(A). Pursuant to provisions of 10CFR 50.55a(g)(6)(ii)(A)(5), please find enclosed information to support the determination and a proposed alternative examination that will provide and acceptable level of quality and safety.

Should questions arise regarding this matter, please contact J.M. Washam at (704) 875-4181.

Very truly yours,

H.B. Barron

IE10

xc. Mr. L.A. Reyes
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
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Mr. Scott M. Shaeffer,
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McGuire Nuclear Station

Duke Energy Corporation

Station: McGuire Nuclear Station, Unit 1

10 Year Interval Request For Alternative No. 97-002

Pursuant to 10 CFR 50.55a(g)(6)(ii)(A)(5), Duke Energy has determined that it is unable to conform with the examination requirements of 10 CFR 50.55a(g)(6)(ii)(A) for McGuire Nuclear Station, Unit 1. Information is therefore being submitted in support of this determination, and a request for alternative pursuant to 10 CFR 50.55a(g)(6)(ii)(A)(5) is being sought from the requirements of 10 CFR 50.55a(g)(6)(ii)(A).

Background:

In response to NRC Information Notice 96-32, "Implementation of 10 CFR 50.55a(g)(6)(ii)(A) "Augmented Examination of Reactor Vessel", Duke Energy has reviewed the information contained in this notice for applicability to its facilities and has taken action to avoid or mitigate the effects of limited examinations. These actions are taken to eliminate and/or reduce the concerns expressed in this Information Notice.

Because of concerns regarding the scope of examination of reactor vessels, the NRC issued, in 1992, 10 CFR 50.55a(g)(6)(ii)(A), "Augmented Examination of Reactor Vessel", which contains requirements for an augmented examination of reactor vessels. The rule requires the licensee to implement, before the time required by normal updating of the inservice inspection (ISI) program, provisions in the 1989 Edition of the ASME, Boiler and Pressure Vessel Code, Section XI, to examine "essentially 100%" of the length of all reactor vessel shell welds. "Essentially 100%" examination as used in 10 CFR 50.55a(g)(6)(ii)(A)(2) means "more than 90% coverage of the examination volume of each weld, where the reduction in coverage is due to interference by another component, or part geometry."

In many cases, licensees have determined that the overall average examination coverage for reactor vessel shell welds may be more than 90%. However, the corresponding examination coverage for individual welds may be substantially less than 90%. In these cases, licensees are unable to completely satisfy the requirements for the augmented reactor vessel examination. They must therefore propose an alternative that would provide an acceptable level of quality and safety.

The licensee must expend all efforts using the latest methods and techniques to achieve acceptably adequate examinations during weld inspections. When examinations cannot be completed with "essentially 100%" coverage, then a request for alternatives from the Code of Federal Regulations must be submitted.

I. System/Components For Which Alternative Is Requested:

In response to the requirements of 10 CFR 50.55a(g)(6)(ii)(A) relief is requested for seven McGuire Unit 1 reactor pressure vessel shell welds specified in Examination Category B-A Item B1.10. These welds, listed below, were examined and found to have 90% coverage or less. Attachment 1 provides examination data for these welds which were examined during Refueling Outage 7, and for which relief is requested from the requirement for augmented examination of the reactor vessel.

a. Reactor Vessel Shell Welds

Weld Numbers	Item Numbers
1RPV10-442	B01.011.003
1RPV1-442A	B01.012.001
1RPV1-442B	B01.012.002
1RPV1-442C	B01.012.003
1RPV3-442A	B01.012.007
1RPV3-442B	B01.012.008
1RPV3-442C	B01.012.009

II. 10CFR50 Requirement:

10 CFR 50.55a(g)(6)(ii)(A) requires that all licensees shall augment their reactor vessel examination requirements at least once for the reactor vessel shell welds specified in Item B1.10 of Examination Category B-A "Pressure Retaining Welds in Reactor Vessel" in Table IWB-2500-1 of Subsection IWB of the 1989 Edition of Section XI, Division 1, of the ASME Boiler and Pressure Vessel Code. 10 CFR 50.55a(g)(6)(ii)(A) further states that "for the purpose of this augmented examination essentially 100% as used in Table IWB-2500-1 means more than 90 % of the examination volume of each weld, where the reduction in coverage is due to interference by another component, or part geometry." The augmented examination, when not deferred in accordance with the provisions of 50.55a(g)(6)(ii)(A)(3), shall be performed in accordance with the related procedures specified in the Section XI Edition and Addenda applicable to the inservice inspection interval in effect on September 8, 1992, and may be used as a substitute for the reactor vessel shell weld examination scheduled for implementation during the inservice inspection interval in effect on September 8, 1992. 10 CFR 50.55a further states that "Licensees that make a determination that they are unable to completely satisfy the requirements for the augmented reactor vessel shell weld examination specified in 10 CFR 50.55a(g)(6)(ii)(A) shall submit information to the Commission to support the determination and shall propose an alternative to the examination requirements that would provide an acceptable level of quality and safety."

III. Requirement for which Alternative is Requested:

An alternative is being requested to the requirement of obtaining "essentially 100%" examination volume of weld coverage for McGuire Unit 1 reactor vessel B1.10 welds listed in section I and shown in Attachment 1.

IV. Basis for requesting Alternative:

If licensees make a determination that they are unable to completely satisfy the requirements for the augmented reactor vessel shell weld examination specified in 10 CFR 50.55a(g)(6)(ii)(A); then 10 CFR 50.55a(g)(6)(ii)(A)(5) requires the licensee to submit information to the Commission to support this determination and to propose an alternative to the examination requirements that would provide an acceptable level of quality and safety. The licensee may use the proposed alternative when authorized by the Director of the Office of NRR.

Attachment 2 provides the calculations documenting the actual amount of Code required examination coverage obtained. A combination of multiple angles and ultrasonic techniques was used to obtain the maximum coverage possible. The use of an alternate transducer head provided increased coverage through optimum transducer arrangement for scanning close to obstructions. However, during the ultrasonic examination of the welds referenced below and listed in Attachment 1 of this alternative, the greater than 90% coverage required per 10 CFR 50.55a(g)(6)(ii)(A)(2) could not be obtained due to geometry and actual physical barriers.

Reactor Vessel Lower Shell to Bottom Head Weld (1RPV10-442) (Item Number B01.011.003):

This examination was limited to 59.00% aggregate coverage of the required weld volume. The principal limitation for this weld is six core guide lugs welded to the vessel ID just above the weld on the lower shell section, whose presence restricts the scanning surface in that area and limits the examination coverage. These lugs are approximately 19 inches tall, 27 inches wide and extend 8 inches radially toward the center of the vessel, the lugs are positioned 60 Degrees around the vessel circumference. These dimensions include the attachment weld radius which physically limited the contact transducer head travel during examination.

Reactor Vessel Upper Shell Long Seam Weld at 60 Degree(1RPV1-442A) (Item Number B01.012.001):

This examination was limited to 90.00% aggregate coverage of the required weld volume. The principal limitation for this weld involves nozzle interference which divides the weld into two parts. The Reactor Vessel Nozzle configuration prevents examination of the weld at the intersection of the weld and nozzle The specific limitations are identified on drawing 1213926D.

Reactor Vessel Upper Shell Long Seam Weld at 180 Degree(1RPV1-442B) (Item Number B01.012.002):

This examination was limited to 31.00% aggregate coverage of the required weld volume. The principal limitation for this weld is the location of the long seam weld between the two outlet nozzles. The close proximity of the long seam weld to the outlet nozzles physically limits examination of the weld in the area between the nozzles. The specific limitations are identified on drawing 1213926D.

Reactor Vessel Upper Shell Long Seam Weld at 300 Degree(1RPV1-442C) (Item Number B01.012.003):

This examination was limited to 90.00% aggregate coverage of the required weld volume. The principal limitation for this weld involves nozzle interference which divides the weld into two parts. The Reactor Vessel Inlet Nozzle configuration prevents examination of the weld at the intersection of the weld and nozzle. The specific limitations are identified on drawing 1213926D.

Reactor Vessel Lower Shell Long Seam Weld at 60 Degree(1RPV3-442A) (Item Number B01.012.007):

This examination was limited to 84.00% aggregate coverage of the required weld volume. The principal limitation for this weld is the presence of the core guide lugs welded to the vessel ID above weld 10-442 on the lower shell section. These lugs are approximately 19 inches tall, 27 inches wide, extend 8 inches radially toward the center of the vessel, and are positioned every 60 Degrees around the vessel circumference. The dimensions include the attachment weld radius. Because of their location, the lugs interfered with the axial and circumferential weld scans.

Reactor Vessel Lower Shell Long Seam Weld at 180 Degree(1RPV3-442B) (Item Number B01.012.008):

This examination was limited to 84.00% aggregate coverage of the required weld volume. The principal limitation for this weld is the presence of the core guide lugs welded to the vessel ID above weld 10-442 on the lower shell section. These lugs are approximately 19 inches tall, 27 inches wide, and extend 8 inches radially toward the center of the vessel, and are positioned every 60 Degrees around the vessel circumference. The dimensions include the attachment weld radius, because of their location these lugs interfered with the axial and circumferential weld scans.

Reactor Vessel Lower Shell Long Seam Weld at 300 Degree(1RPV3-442C) (Item Number B01.012.009):

This examination was limited to 84.00% aggregate coverage of the required weld volume. The principal limitation for this weld is the presence of the core guide lugs welded to the vessel ID above weld 10-442 on the lower shell section. These lugs are approximately 19 inches tall, 27 inches wide, and extend 8 inches radially toward the center of the vessel, and are positioned every 60 Degrees around the vessel circumference. The dimensions include the attachment weld radius, because of their location these lugs interferred with the axial and circumferential weld scans.

Weld Examination Summary

The reactor vessel shell welds were examined from the vessel inside surface using automated ultrasonic examination equipment. The examinations were done with various contact head arrangements to optimize the maximum examination coverage. This allowed each transducer to scan as close as possible to any obstruction around the area examined. Although the coverage requirements of 10 CFR 50.55a(g)(6)(ii)(A) could not be met, the examinations were performed with modified equipment and tooling designed to obtain the maximum coverage possible.

As a result of inspections performed, the 100% requirement has been determined to create a hardship for McGuire Nuclear Station. The reactor vessel welds were examined to the maximum extent practical to the requirements of Section V, Article 4 of the 1980 Edition through the Winter 1980 Addenda of the ASME Boiler and Pressure Vessel Code and the additional requirements of Regulatory Guide 1.150. To meet the 10 CFR 50.55a(g)(6)(ii)(A)(2) examination coverage requirements, design modifications would be necessary to gain access to the welds in order to obtain complete coverage. The design modifications are impractical due to the vast scope of work that would be required. Imposition of this

requirement would cause a considerable burden on Duke Energy with no commensurate safety benefit realized.

V. Alternate Examinations:

In addition to the volumetric examination that has been performed on the McGuire reactor vessel, Duke Energy has performed a visual examination of the internals and the inside of the reactor vessel as required by ASME Section XI, Table IWB-2500-1. This visual examination did not identify any rejectable conditions per ASME Section XI acceptance standards.

The use of radiography as an alternate volumetric examination method is not feasible due to component thickness and restrictions from physical barriers which prohibit access for the placement of source, image quality indicators, film, etc. In addition, the background radiation levels would not allow for a radiographic examination that would render meaningful results.

Performing the ultrasonic examination from the outside of the reactor vessel is not a viable option. The design of McGuire's reactor building prohibits access for the equipment and personnel from outside the vessel.

Duke Energy Corporation will continue to perform ultrasonic examinations of all reactor vessel welds to the maximum extent practical in accordance with the requirements of ASME Section V, Article 4, 1989 Edition and Regulatory Guide 1.150, Revision 1, Appendix A. The application of Code Case N-460 will be utilized in all cases where less than 100% but greater than 90% weld coverage is obtained. In cases where weld coverage of 90% or less is obtained, a request for relief from ASME Section XI Code requirements will be submitted.

Duke Energy Corporation proposes as an alternative to the greater than 90% coverage requirement of 10 CFR 50.55a(g)(6)(ii)(A), that the examination coverage obtained on the welds listed in Attachment 1 be considered to provide an acceptable level of quality and safety.

No additional examinations will be required.

VI. Justification for Granting Alternative:

10 CFR 50.55a(A)(5) states that "Licensees that make a determination that they are unable to completely satisfy the requirements for the augmented reactor vessel shell weld examination specified in 50.55a(g)(6)(ii)(A) shall submit information to the Commission to support the determination and shall propose an alternative to the examination requirements that would provide an acceptable level of quality and safety. 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The proposed alternative(s) must demonstrate that an acceptable level of quality and safety, or compliance with the specified

requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Examination of 100% of reactor pressure vessel shell welds would result in hardship and unusual difficulty without compensatory increase in safety being realized. Examination of the accessible weld volume provides sufficient and reasonable assurance of vessel integrity. The reduction in the expected examination coverage will not endanger life or property or the common defense and security because the reactor coolant system is designed and constructed to have a low probability of gross rupture or significant leakage throughout its design life. Technical Specifications 3/4.4.6 for McGuire Nuclear Station places conservative limits on the amount of reactor coolant leakage allowed during system operation. Any weld failure would allow additional coolant to leak from the system. The reactor coolant system leakage detection system is in place to detect any variation in the system water inventory. The purpose of the containment building is to retain any such leakage within its boundaries. If leakage exceeds Technical Specification 3.4.6.2 , procedures are in place to assure safe shutdown of the unit within specified time limits.

Due to the design of the McGuire reactor vessels and location of the physical obstructions, it is not feasible to obtain the examination coverage required by 10 CFR 50.55a(g)(6)(ii)(A)(2) without placing undue hardship on Duke Energy. Based on the portions of the required volumetric and visual examination that have been completed, any existing pattern of degradation would have been detected.

Duke Energy Company will continue to ultrasonically examine the reactor vessel B1.10 category welds to the extent practical within the limits of original design and construction. This will provide reasonable assurance of weld/component integrity.

Pursuant to 10 CFR 50.55a(g)(6)(i), granting this alternative for the reactor vessel B1.10 category welds will provide reasonable assurance of weld/component integrity, "is authorized by law, and will not endanger life or property or the common defense and security and is other wise in the public interest giving due consideration to the burden upon the licensee that could result if the requirement were imposed on the facility."

VII. Implementation Schedule:

The reactor vessel welds listed above will be examined during the third period of the second interval. The examinations are currently scheduled during EOC 15.

Attachments:

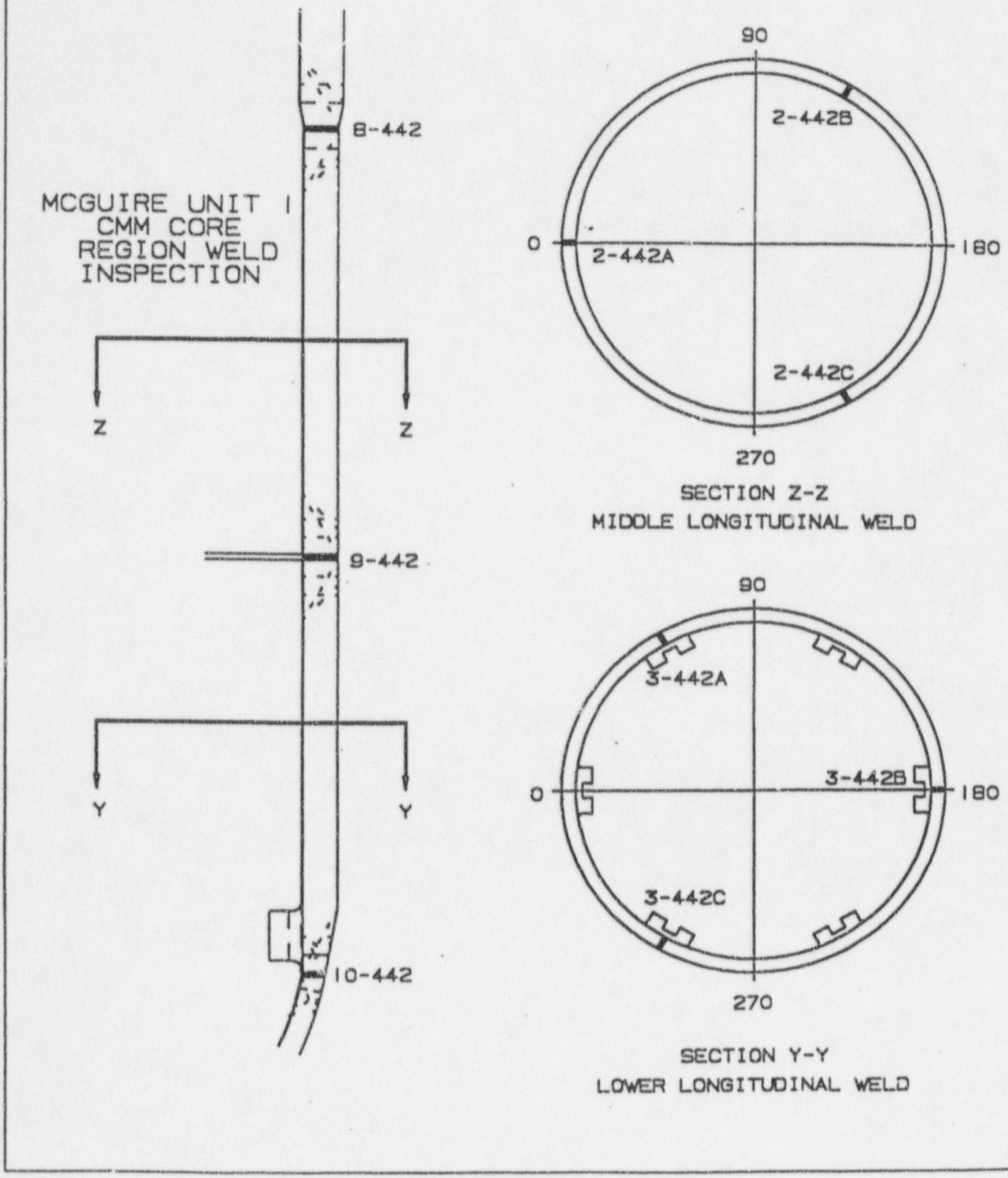
1. Listing of information for welds with limited UT examination coverage
2. Detailed drawings of affected welds including calculation methods

Evaluated By: Gary Underwood Date: 7/9/97

Reviewed By: J. Barlow Date: 7/9/97

ASME Class 1 NDE Inservice Inspection Request For Alternative Serial No. 97-002
For McGuire Unit 1 Based On ASME XI - 1980 Code Through Winter 1980 Addenda

Item No.	Exam Category/ Figure No.	System Or Component	Function	Area To Be Examined	Reason For Request	Weld ID No.	Licensee Proposed Alternate Examination
B01.011.003	B-A IWB-2500-1	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Lower Shell to Bottom Head Weld	Limited scan due to six core guide lug obstructions Actual coverage obtained = 59.00%	1RPV10-442	None
B01.012.001	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Upper Shell Long Seam Weld at 60 Deg.	Limited scan due to nozzle geometric configuration. Actual coverage obtained = 90.00%	1RPV1-442A	None
B01.012.002	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Upper Shell Long Seam Weld at 180 Deg.	Limited scan due to nozzle geometric configuration. Actual coverage obtained = 31.00%	1RPV1-442B	None
B01.012.003	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Upper Shell Long Seam Weld at 300 Deg.	Limited scan due to nozzle geometric configuration. Actual coverage obtained = 90.00%	1RPV1-442C	None
B01.012.007	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Lower Shell Long Seam Weld at 60 Deg.	Limited scan due to core guide lug obstruction Actual coverage obtained = 84.00%	1RPV3-442A	None
B01.012.008	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Lower Shell Long Seam Weld at 180 Deg.	Limited scan due to core guide lug obstruction Actual coverage obtained = 84.00%	1RPV3-442B	None
B01.012.009	B-A IWB-2500-2	Reactor Vessel	Houses the fuel assemblies, control rods, and vessel internals, also directs the flow of reactor coolant	Lower Shell Long Seam Weld at 300 Deg.	Limited scan due to core guide lug obstruction Actual coverage obtained = 84.00%	1RPV3-442C	None



Vessel Weld Layout
Figure 1

DUKE POWER COMPANY
MC GUIRE UNIT 1
REACTOR VESSEL EXAMINATION

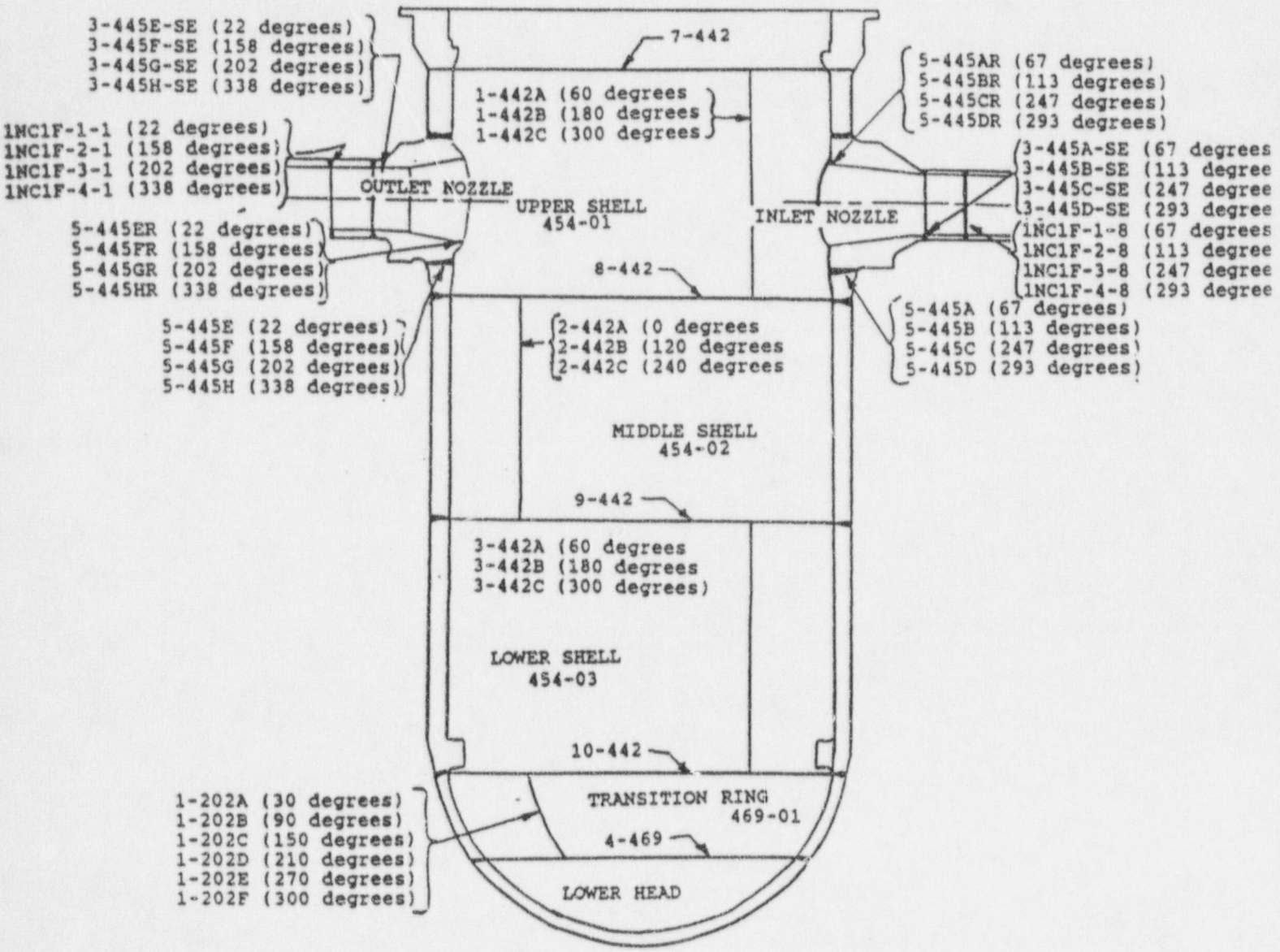


Figure 2

SER. NO. 97-002
ATTACHMENT 2
REACTOR VESSEL OUTLINE
PAGE 2 OF 28

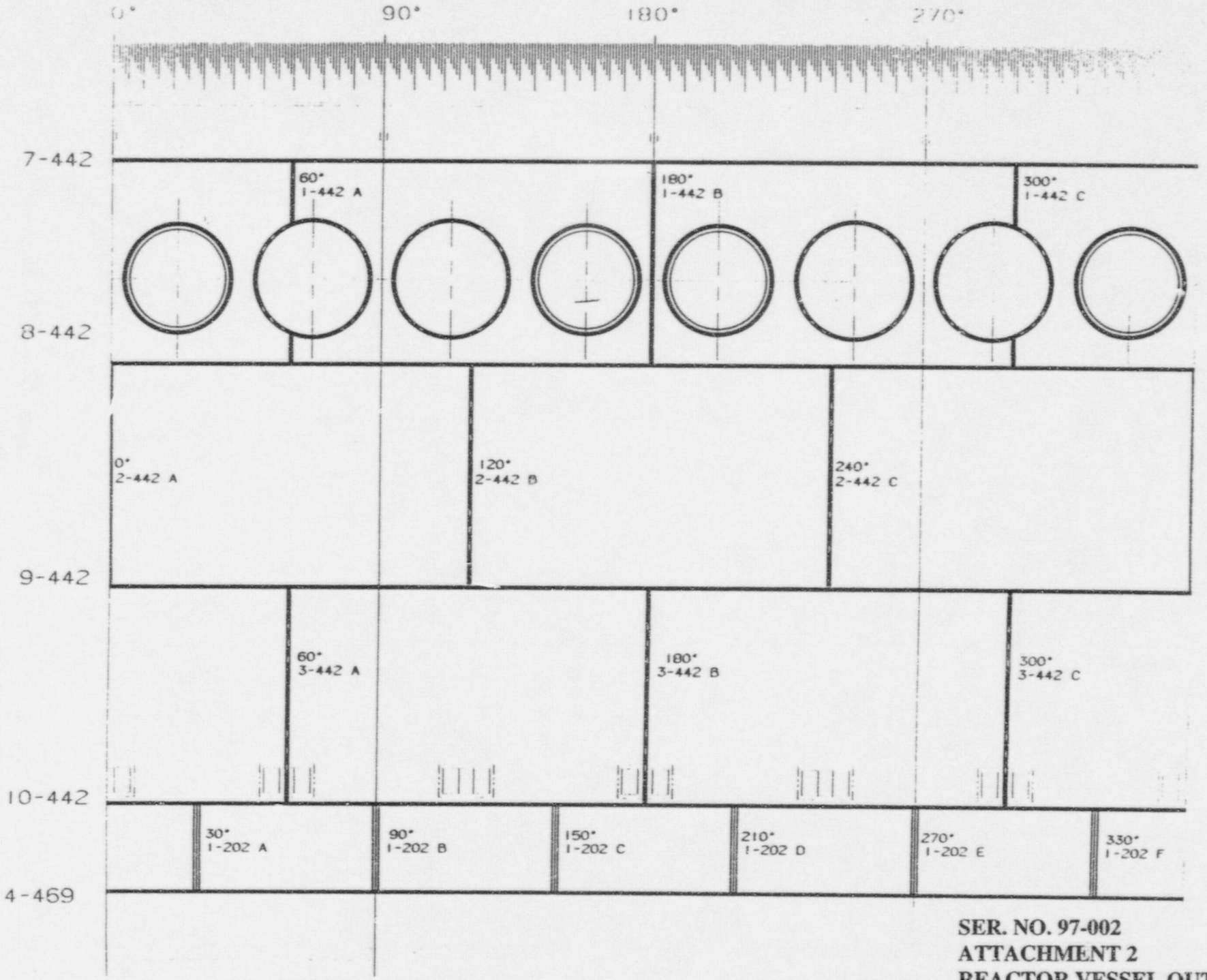


Figure 3

SER. NO. 97-002
ATTACHMENT 2
REACTOR VESSEL OUTLINE
PAGE 3 OF 28

EXAMINATION COVERAGE FOR WELD: 10-442

LWR SHELL TO LWR HEAD CIRC WELD

AGGREGATE COVERAGE OBTAINED: 59%

SCAN PLAN DRAWING: 1213929D-02

Zone Coverage Obtained

Weld: 63% Adjacent Base Metal: 59% Near (ID) Surface: 60%

Examination Volume Definition

Weld Length: 544.872 in.

Area Measurement			Volume Calculation		
Weld	7.51	sq. in.	Weld	4091.989	cu. in.
Adjacent Base Metal	43.88	sq. in.	Adjacent Base Metal	23908.98	cu. in.
Near Surface	8.58	sq. in.	Near Surface	4675.002	cu. in.

Examination Coverage Calculations

Weld

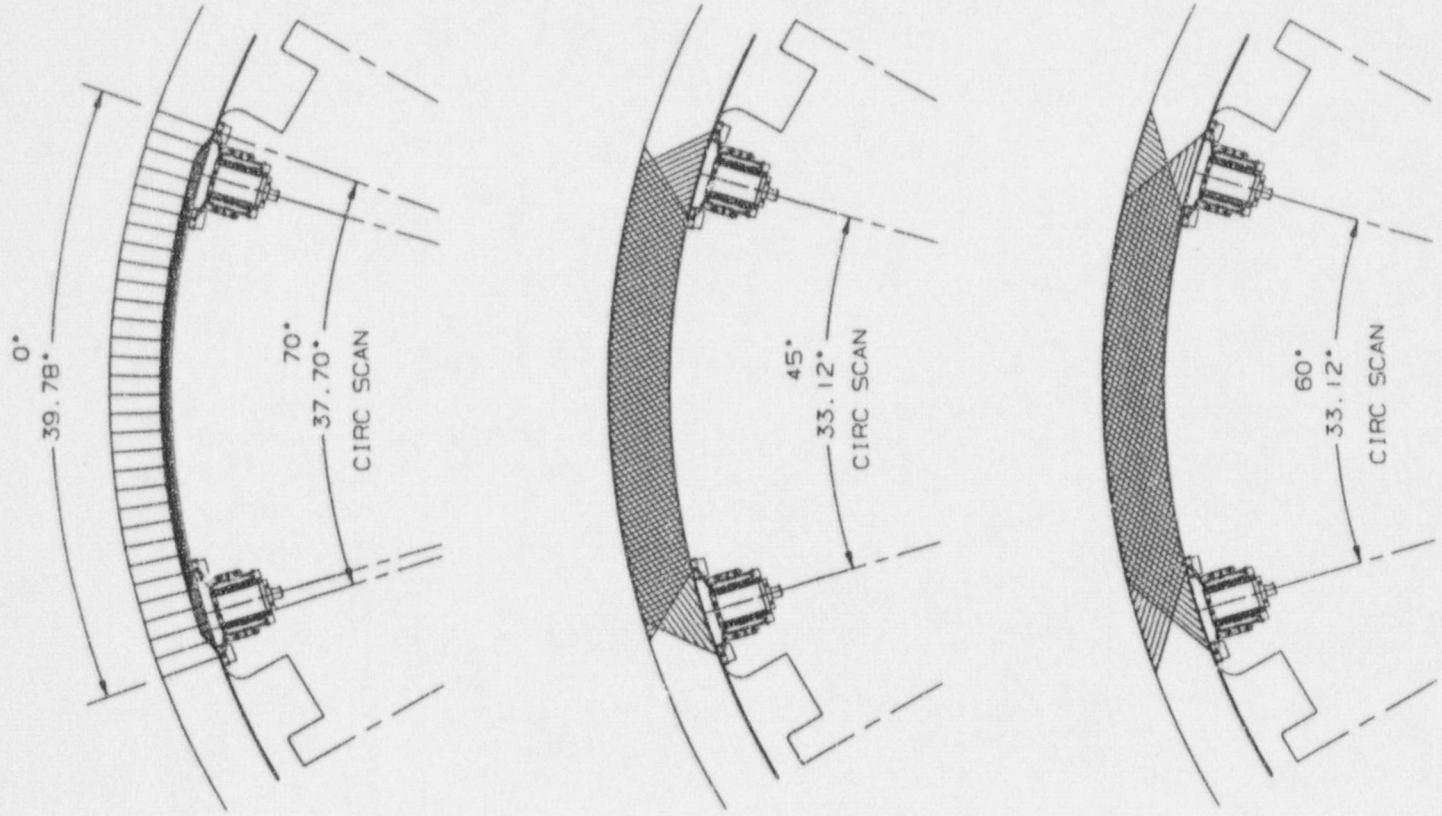
Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	7.5	361.3	2713.0	2713.0	100%
2	0	n/a	0.0	183.6	0.0	1379.0	0%
3	45	1	7.5	334.1	2509.1	2509.1	100%
4	45	2	7.5	334.1	2509.1	2509.1	100%
5	45	1	0.0	210.8	0.0	1583.0	0%
6	45	2	0.0	210.8	0.0	1583.0	0%
7	45	3	7.5	300.8	2258.8	2258.8	100%
8	45	4	7.5	300.8	2258.8	2258.8	100%
9	45	3	0.0	244.1	0.0	1833.2	0%
10	45	4	0.0	244.1	0.0	1833.2	0%
11	60	1	7.5	334.1	2509.1	2509.1	100%
12	60	2	7.5	334.1	2509.1	2509.1	100%
13	60	1	7.5	210.8	1583.1	1583.1	100%
14	60	2	0.0	210.8	0.0	1583.1	0%
15	60	3	7.5	300.8	2258.8	2258.8	100%
16	60	4	7.5	300.8	2258.8	2258.8	100%
17	60	3	0.0	244.1	0.0	1833.2	0%
18	60	4	0.0	244.1	0.0	1833.2	0%
				Totals:	*23367.6*	*36828.4*	*63%*

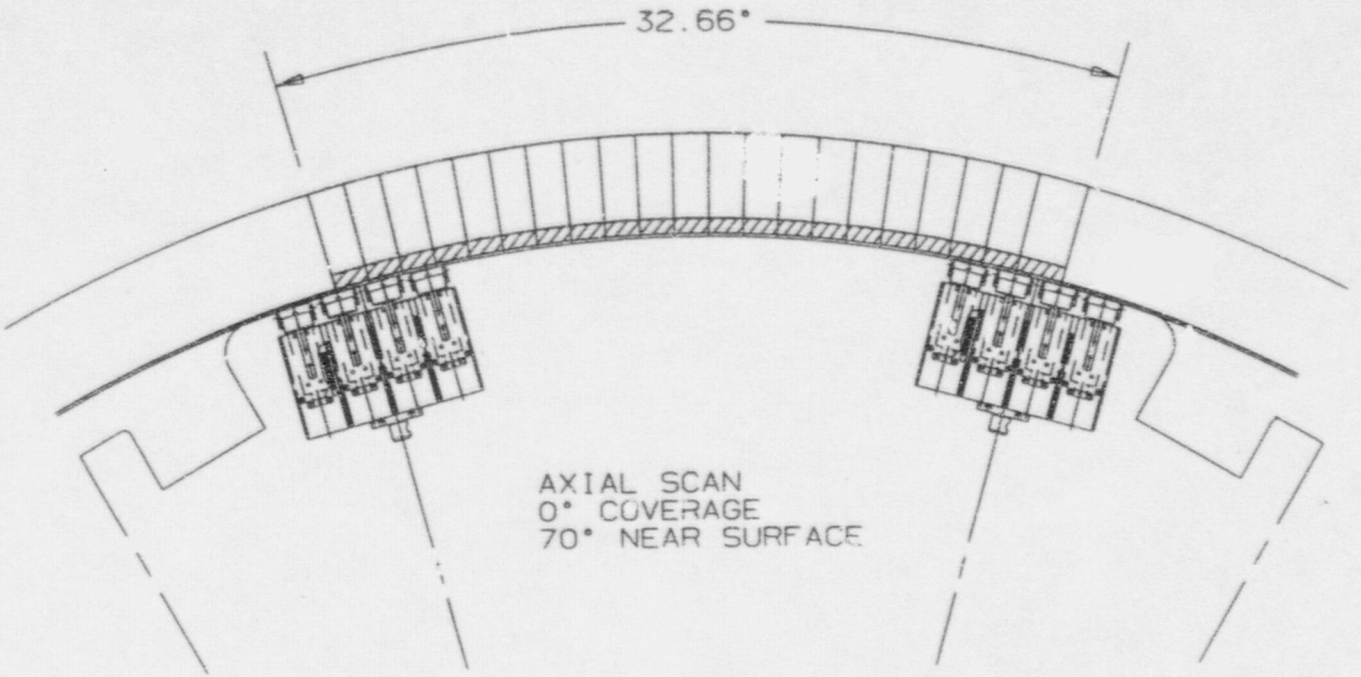
Adjacent Base Metal

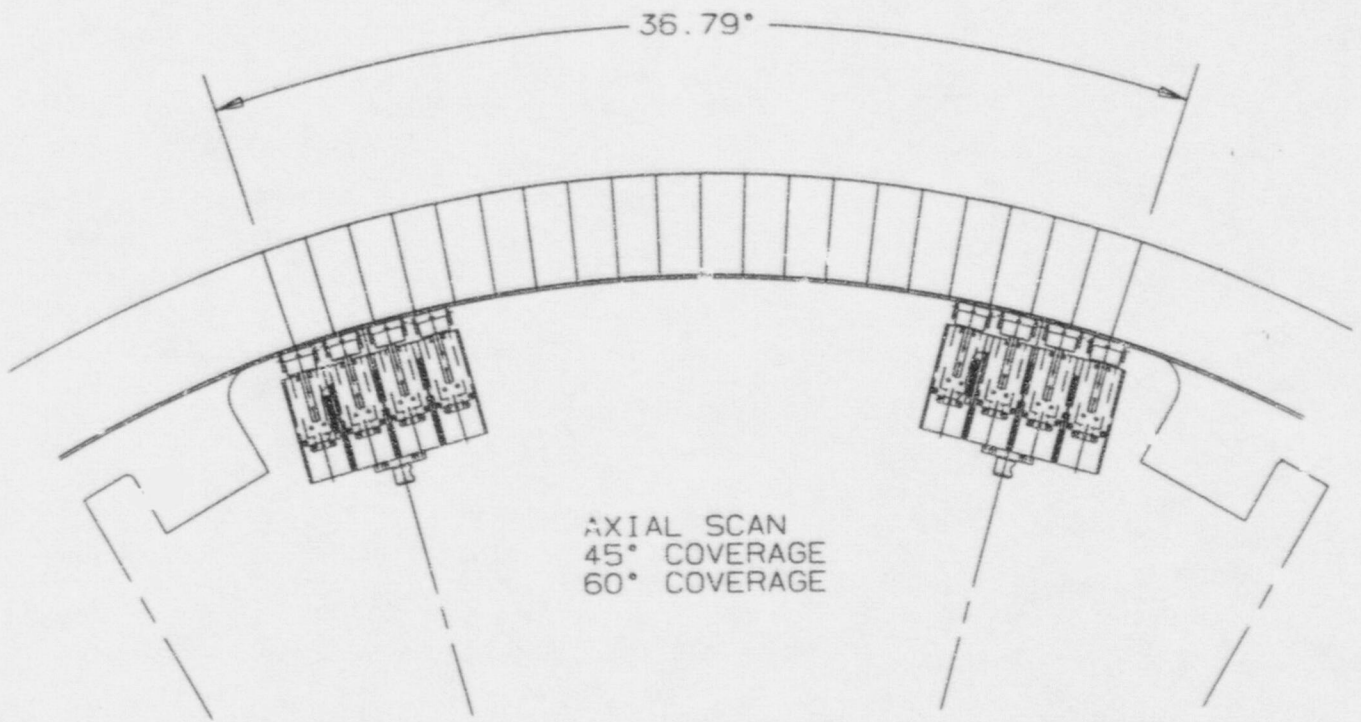
Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	43.9	361.3	15851.7	15851.7	100%
2	0	n/a	0.0	183.6	0.0	8057.2	0%
3	45	1&2	43.9	334.1	14660.3	14660.3	100%
4	45	1&2	0.0	210.8	0.0	9249.0	0%
5	45	3	43.9	300.8	13197.8	13197.8	100%
6	45	4	43.9	300.8	13197.8	13197.8	100%
7	45	3	0.0	244.1	0.0	10711.1	0%
8	45	4	0.0	244.1	0.0	10711.1	0%
9	60	1&2	43.9	334.1	14660.3	14660.3	100%
10	60	1&2	0.0	210.8	0.0	9249.9	0%
11	60	3	43.9	300.8	13197.8	13197.8	100%
12	60	4	43.9	300.8	13197.8	13197.8	100%
13	60	3	0.0	244.1	0.0	10711.1	0%
14	60	4	0.0	244.1	0.0	10711.1	0%
				Totals:	*97963.4*	*167364.0*	*59%*

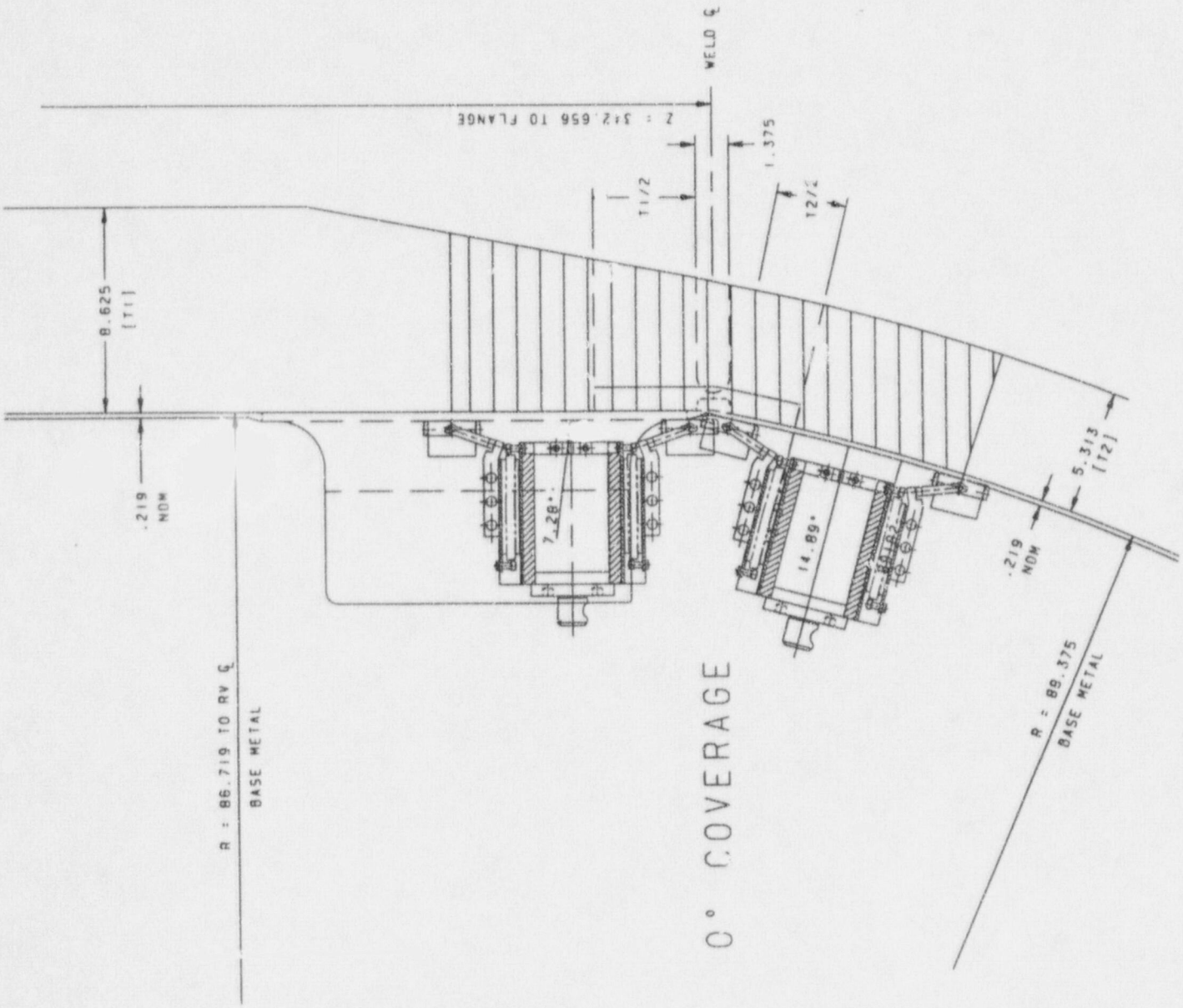
Near Surface

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	70	axial	8.6	296.6	2544.8	2544.8	100%
2	70	axial	0.0	248.3	0.0	2130.2	0%
3	70	circ	8.6	361.3	3099.5	3099.5	100%
4	70	circ.	0.0	183.6	0.0	1575.5	0%
				Totals:	*5644.3*	*9350.0*	*60%*


0°
39.78°
70°
37.70°
CIRC SCAN
45°
33.12°
CIRC SCAN
60°
33.12°
CIRC SCAN


32.66°
AXIAL SCAN
0° COVERAGE
70° NEAR SURFACE


36.79°
AXIAL SCAN
45° COVERAGE
60° COVERAGE



SEF. NO. 97-002
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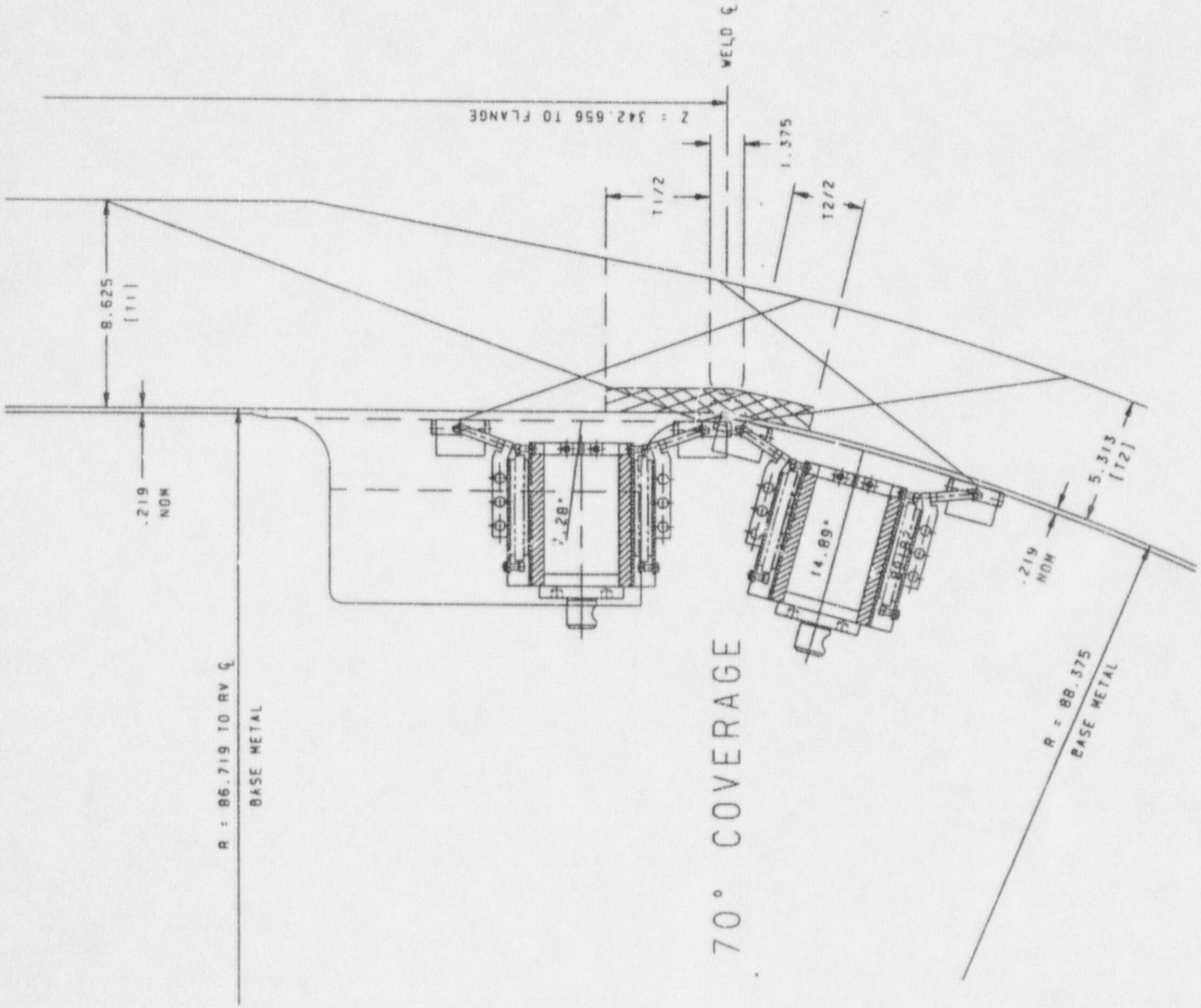
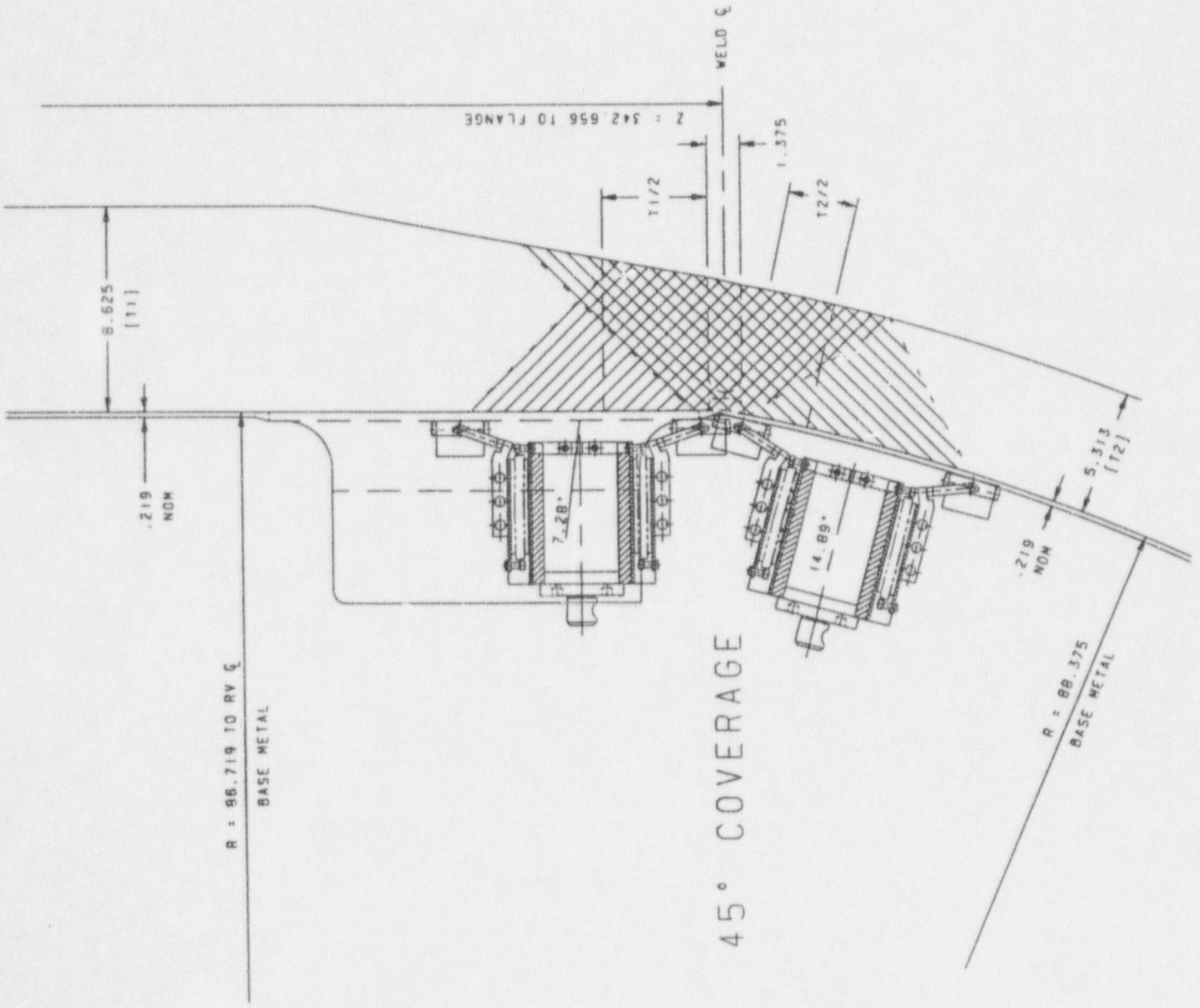
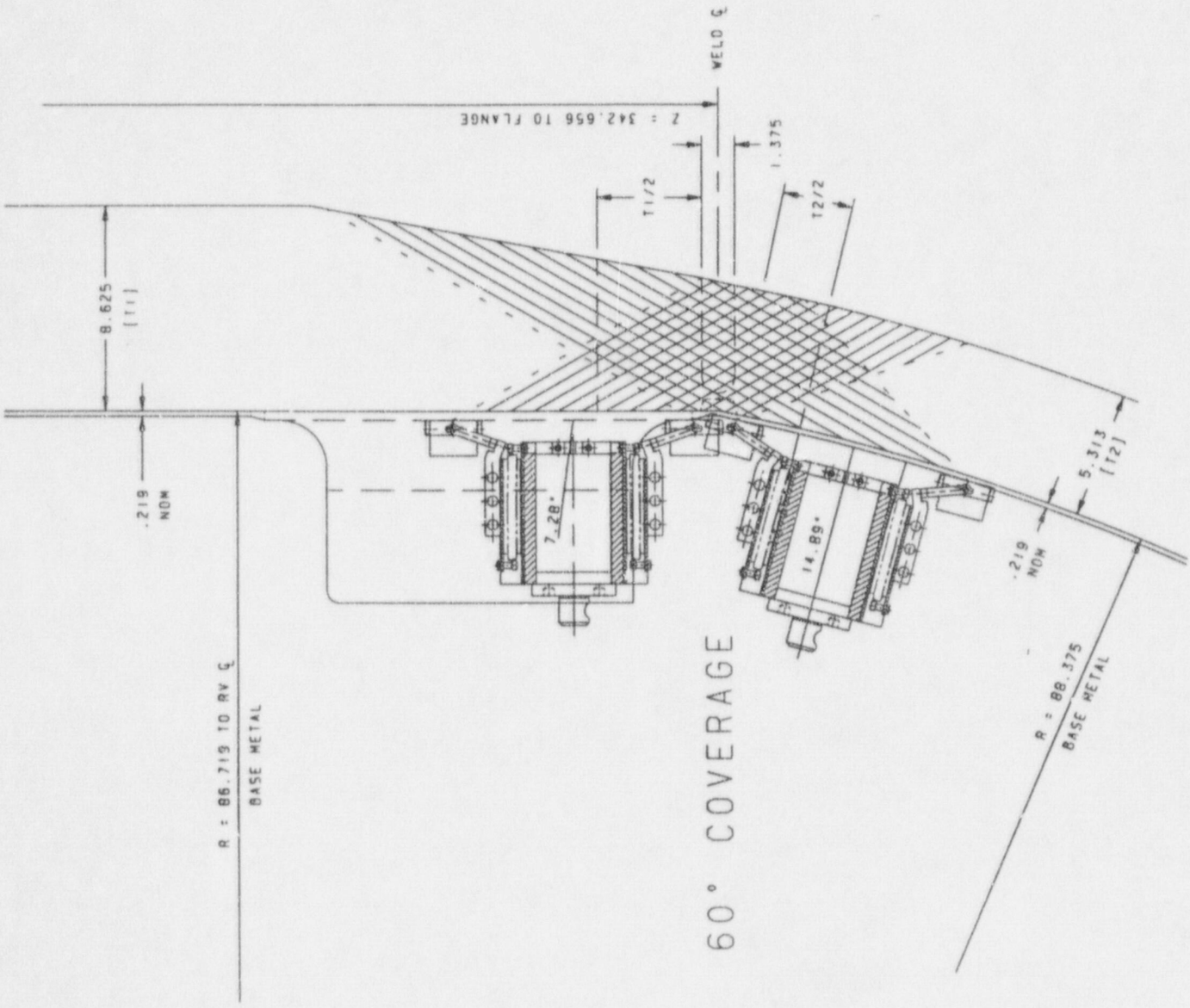
B01.071.003
1RPV10-442
PAGE 7 OF 28

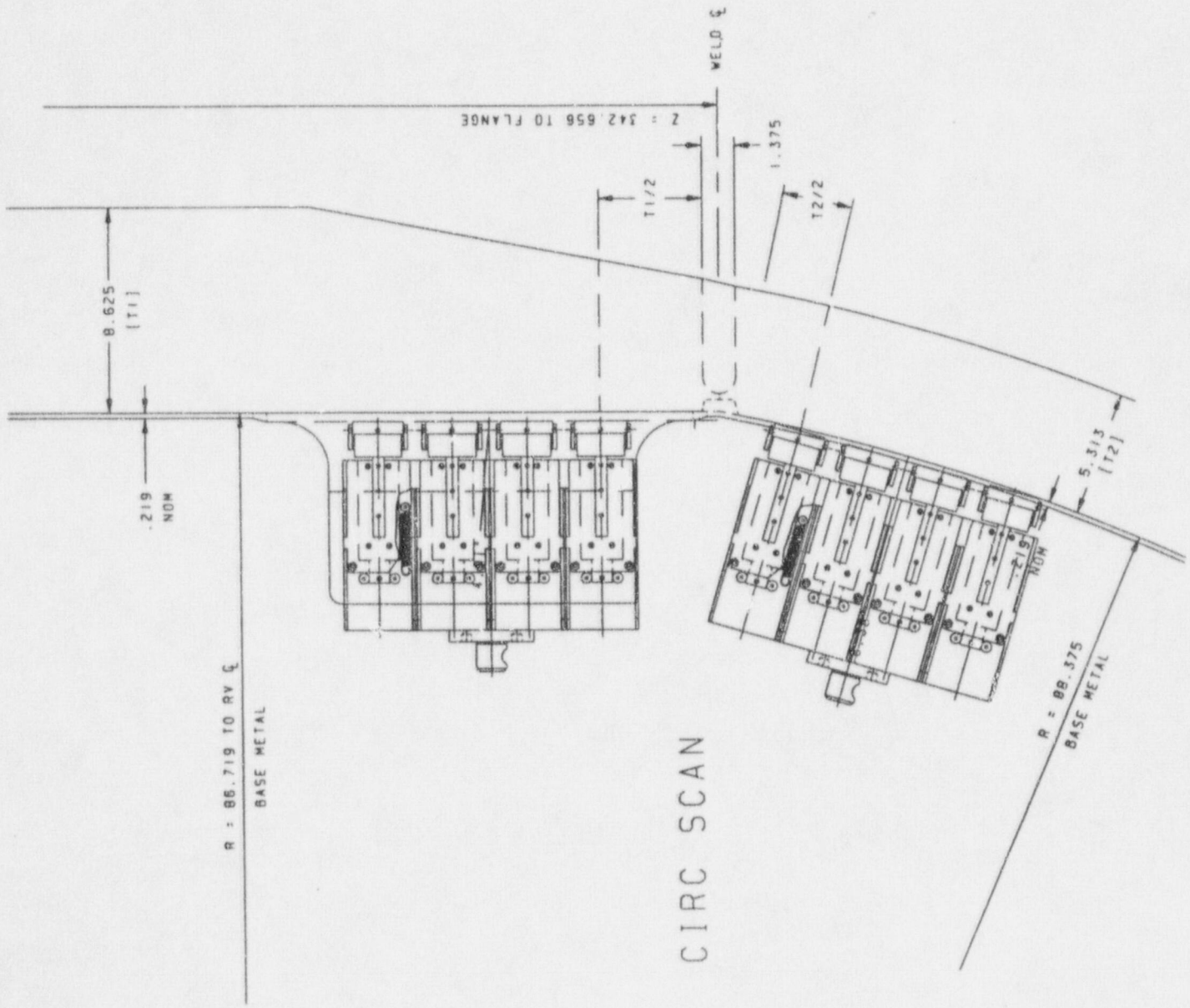

WELD ℄
Z = 342.656 TO FLANGE
1.375
11/2
12/2
8.625
[11]
.219
NOM
5.313
[12]
14.89°
.219
NOM
R = 86.719 TO RV ℄
BASE METAL
70° COVERAGE
R = 88.375
BASE METAL



SER. NO. 97-002
ATTACHMENT 2
B01.011.003
1RPV10-442
PAGE 9 OF 28

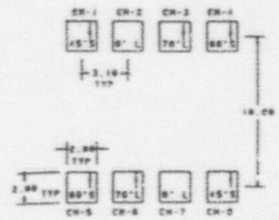


SER. NO. 97-002
ATTACHMENT 2
B01.011.003
1RPV10-442
PAGE 10 OF 28

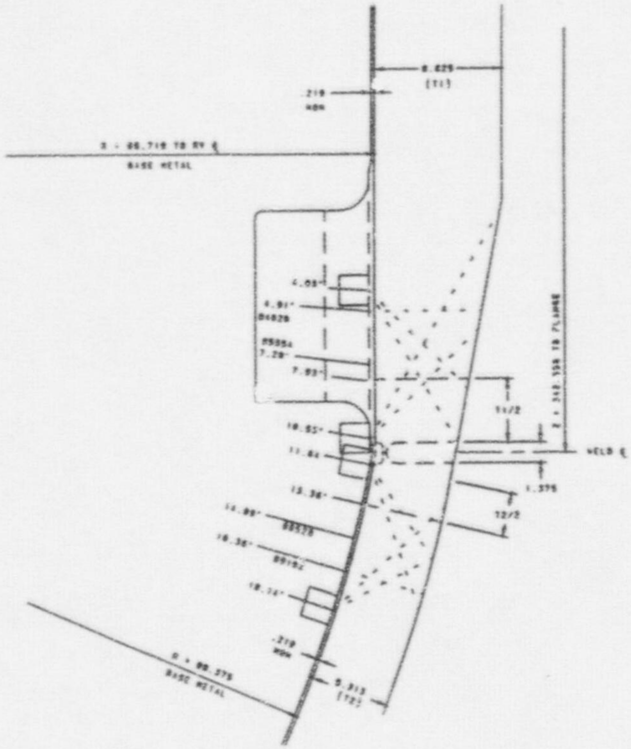


SER. NO. 97-002
ATTACHMENT 2
B01.011.003
1EPV10-442
PAGE 11 OF 28

REVISIONS			
REV	DESCRIPTION	DATE	APP
1	UPDATE TO REFLECT ACTUAL SCAN COVERAGE		CMT
2	FINAL REPORT VERSION WELD & FIGURE #s CORRECTED	2/7/92	



TRANSDUCER HEAD CONFIGURATION
ON SCAN SURFACE VIEWED FROM BACK OF HEAD
AXIS 4 SET AT 180°



TRANSDUCER TABLE II				
UT CHANNEL	DESCRIPTION			
	BEAM ANGLE	FREQUENCY	SIZE	ELEMENT
1	45° S	1.0	(2) 1.2 X .75	DUAL FLAT
2	0° L	1.0	(2) 1.5 X .75	DUAL FLAT
3	70° L	1.0	[illegible]	TRIPLE FOCUSED
4	60° S	1.0	(2) .97 X .75	DUAL FLAT
5	60° S	1.0	(2) .97 X .75	DUAL FLAT
6	70° L	1.0	[illegible]	TRIPLE FOCUSED
7	0° L	1.0	(2) 1.5 X .75	DUAL FLAT
8	45° S	1.0	(2) 1.2 X .75	DUAL FLAT

TABLE I								
			CMD COORDINATE RANGES					
FIGURE NO.	WELD NO.	FILE NAME	EXTENSION DEGREES	ROTATION DEGREES	INDEX INCREMENT	SCAN DIRECTION	SETUP	CHANNEL
B01.011.003	1RPV 10-442	TRANCIRCYA	7.20 @ 14.89	14.70 @ 45.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXA	4.81 @ 16.30	13.44 @ 46.56	.56"	CIRC	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCYB	7.20 @ 14.89	74.70 @ 105.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXB	4.81 @ 16.30	73.44 @ 106.56	.56"	CIRC	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCYC	7.20 @ 14.89	134.70 @ 165.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXC	4.81 @ 16.30	133.44 @ 166.56	.56"	CIRC	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCYD	7.20 @ 14.89	194.70 @ 225.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXD	4.81 @ 16.30	193.44 @ 226.56	.56"	CIRC	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCYE	7.20 @ 14.89	254.70 @ 285.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXE	4.81 @ 16.30	253.44 @ 286.56	.56"	CIRC	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCYF	7.20 @ 14.89	314.70 @ 345.30	.37"	AXIAL	7	1 - 8
B01.011.003	1RPV 10-442	TRANCIRCXF	4.81 @ 16.30	313.44 @ 346.56	.56"	CIRC	7	1 - 8

SER. NO. 97-002
ATTACHMENT 2
B01.011.003
1RPV10-442
PAGE 12 OF 28

NOTES:

1. Bottom head coordinates based on rotation from horizontal (ALPHA) with center at Z = 325.625".
2. Metric scan limits based on bottom head arc length calculated as follows:

   ARC LENGTH = 2 π R ALPHA / 360

3. Angular positions are offset 14.70" from the guide lug centerline for an axial scan, and 13.44" for a circ scan.
4. Metric dimensions are in .1 mm.
5. Metric scan limits have been adjusted slightly to insure no scan lines are lost within the range indicated by ALPHA.

FOR ORIGINAL SIGNATURES SEE MICROFILM IN RECORDS CENTER

CONTRACT NO. 583-0661

McGUIRE UNIT 1
CMM EXAMINATION
SCAN COVERAGE
LOWER SHELL-TO-LOWER HEAD

SCALE 1/4
DWG. NO. 1213929 D
REV 2

EXAMINATION COVERAGE FOR WELD: 1-442 A,C

UPPER LONGITUDINAL WELD

AGGREGATE COVERAGE OBTAINED: 90%

SCAN PLAN DRAWING: 1213936D-02

Zone Coverage Obtained

Weld: 89% Adjacent Base Metal 90% Near (ID) Surface: 88%

Examination Volume Definition

Weld Length: 24.64 in.

Area Measurement			Volume Calculation		
Weld	14.78	sq. in.	Weld	364.1792	cu. in.
Adjacent Base Met	124.08	sq. in.	Adjacent Base Metal	3057.331	cu. in.
Near Surface	12.23	sq. in.	Near Surface	301.3472	cu. in.

Examination Coverage Calculations

Weld

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	14.8	24.6	364.2	364.2	100%
2	45	1	14.8	18.7	276.5	276.5	100%
3	45	2	14.8	18.7	276.5	276.5	100%
4	45	1	0.0	5.9	0.0	87.6	0%
5	45	2	0.0	5.9	0.0	87.6	0%
6	45	3	14.8	24.6	364.2	364.2	100%
7	45	4	14.8	24.6	364.2	364.2	100%
8	60	1	14.8	18.7	276.5	276.5	100%
9	60	2	14.8	18.7	276.5	276.5	100%
10	60	1	0.0	5.9	0.0	87.6	0%
11	60	2	0.0	5.9	0.0	87.6	0%
12	60	3	14.8	24.6	364.2	364.2	100%
13	60	4	14.8	24.6	364.2	364.2	100%
				Totals:	*2927.0*	*3277.6*	*89%*

Adjacent Base Metal

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	124.1	24.6	3057.3	3057.3	100%
2	45	1&2	115.7	18.7	2164.0	2321.5	93%
3	45	1&2	0.0	5.9	0.0	735.8	0%
4	45	3	124.1	24.6	3057.3	3057.3	100%
5	45	4	124.1	24.6	3057.3	3057.3	100%
6	60	1&2	115.7	18.7	2164.0	2321.5	93%
7	60	1&2	0.0	5.9	0.0	735.8	0%
8	60	3	115.7	24.6	2849.9	3057.3	93%
9	60	4	115.7	24.6	2849.9	3057.3	93%
				Totals:	*19199.7*	*21401.3*	*90%*

Near Surface

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	70	axial	12.2	18.7	228.8	228.8	100%
2	70	axial	0.0	5.9	0.0	72.5	0%
3	70	circ.	12.2	24.6	301.3	301.3	100%
				Totals:	*530.2*	*602.7*	*88%*

EXAMINATION COVERAGE FOR WELD: 1-442 B

UPPER LONGITUDINAL WELD

AGGREGATE COVERAGE OBTAINED: 31%

SCAN PLAN DRAWING: 1213936D-02

Zone Coverage Obtained

Weld: 28% Adjacent Base Metal: 31% Near (ID) Surface: 43%

Examination Volume Definition

Weld Length: 74.265 in.

Area Measurement			Volume Calculation		
Weld	14.78	sq. in.	Weld	1097.637	cu. in.
Adjacent Base Metal	124.08	sq. in.	Adjacent Base Metal	9214.801	cu. in.
Near Surface	12.23	sq. in.	Near Surface	908.261	cu. in.

Examination Coverage Calculations

Weld

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	14.8	20.4	302.0	302.0	100%
2	0	n/a	0.0	53.8	0.0	795.7	0%
3	45	1	14.8	20.4	302.0	302.0	100%
4	45	1	0.0	53.8	0.0	795.7	0%
5	45	2	14.8	20.4	302.0	302.0	100%
6	45	2	0.0	53.8	0.0	795.7	0%
7	45	3	14.8	20.4	302.0	302.0	100%
8	45	3	0.0	53.8	0.0	795.7	0%
9	45	4	14.8	20.4	302.0	302.0	100%
10	45	4	0.0	53.8	0.0	795.7	0%
11	60	1	14.8	20.4	302.0	302.0	100%
12	60	1	0.0	53.8	0.0	795.7	0%
13	60	2	14.8	20.4	302.0	302.0	100%
14	60	2	0.0	53.8	0.0	795.7	0%
15	60	3	14.8	20.4	302.0	302.0	100%
16	60	3	0.0	53.8	0.0	795.7	0%
17	60	4	14.8	20.4	302.0	302.0	100%
18	60	4	0.0	53.8	0.0	795.7	0%
				Totals:	*2113.7*	*7683.5*	*28%*

Adjacent Base Metal

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	124.1	20.4	2535.0	2535.0	100%
2	0	n/a	0.0	53.8	0.0	6679.8	0%
3	45	1&2	124.1	20.4	2535.0	2535.0	100%
4	45	1&2	0.0	53.8	0.0	6679.8	0%
5	45	3	124.1	20.4	2535.0	2535.0	100%
6	45	3	0.0	53.8	0.0	6679.8	0%
7	45	4	124.1	20.4	2535.0	2535.0	100%
8	45	4	0.0	53.8	0.0	6679.8	0%
9	60	1&2	124.1	20.4	2535.0	2535.0	100%
10	60	1&2	0.0	53.8	0.0	6679.8	0%
11	60	3	124.1	20.4	2535.0	2535.0	100%
12	60	3	0.0	53.8	0.0	6679.8	0%
13	60	4	124.1	20.4	2535.0	2535.0	100%
14	60	4	0.0	53.8	0.0	6679.8	0%
				Totals:	*17744.7*	*57823.8*	*31%*

Near Surface

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	70	axial	12.2	20.4	249.9	249.9	100%
2	70	axial	0.0	53.8	0.0	658.4	0%
3	70	circ	12.2	20.4	249.9	249.9	100%
4	70	circ	0.0	53.8	0.0	658.4	0%
				Totals:	*499.7*	*1158.1*	*43%*

LONG SEAM LIMTED COVERAGE

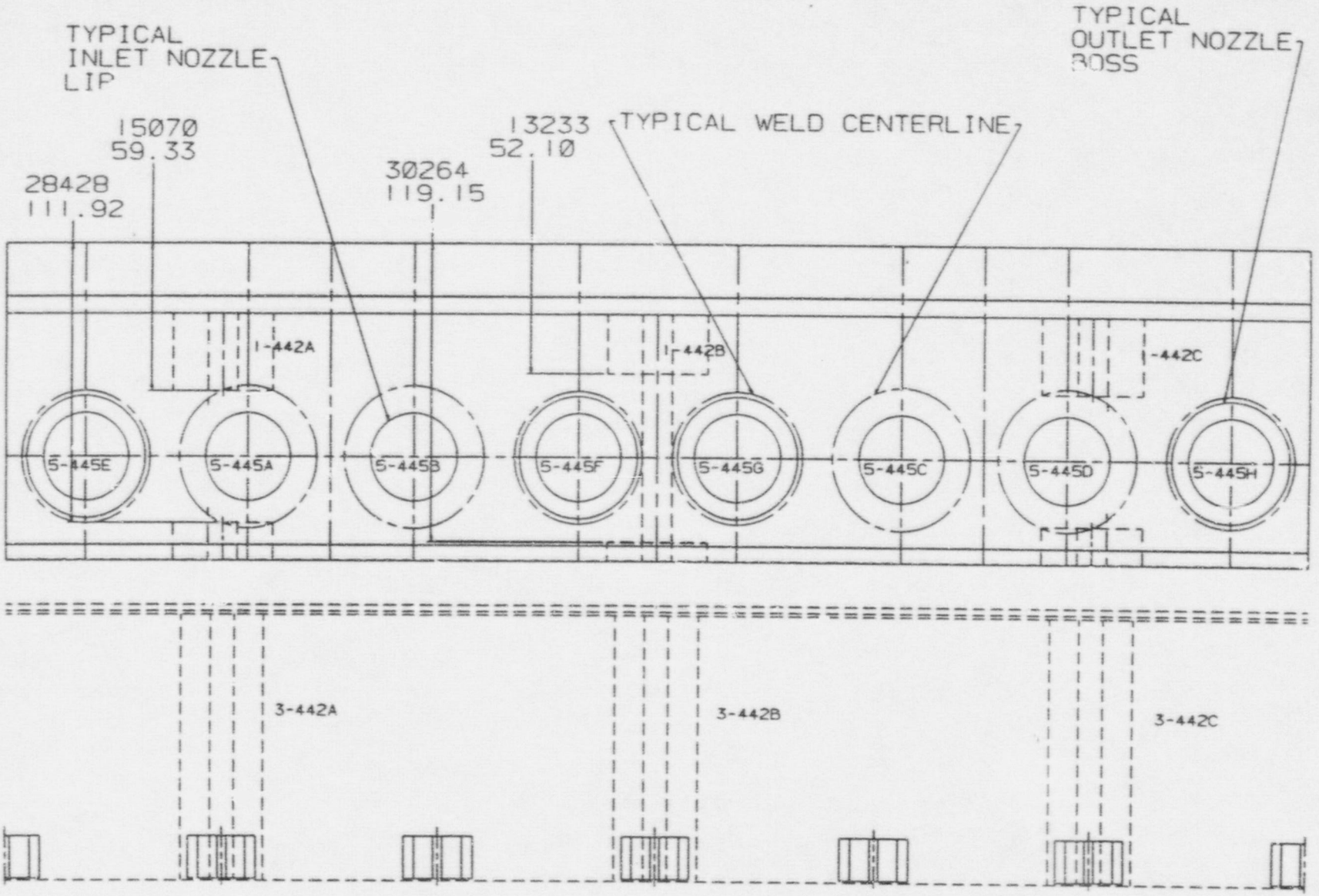
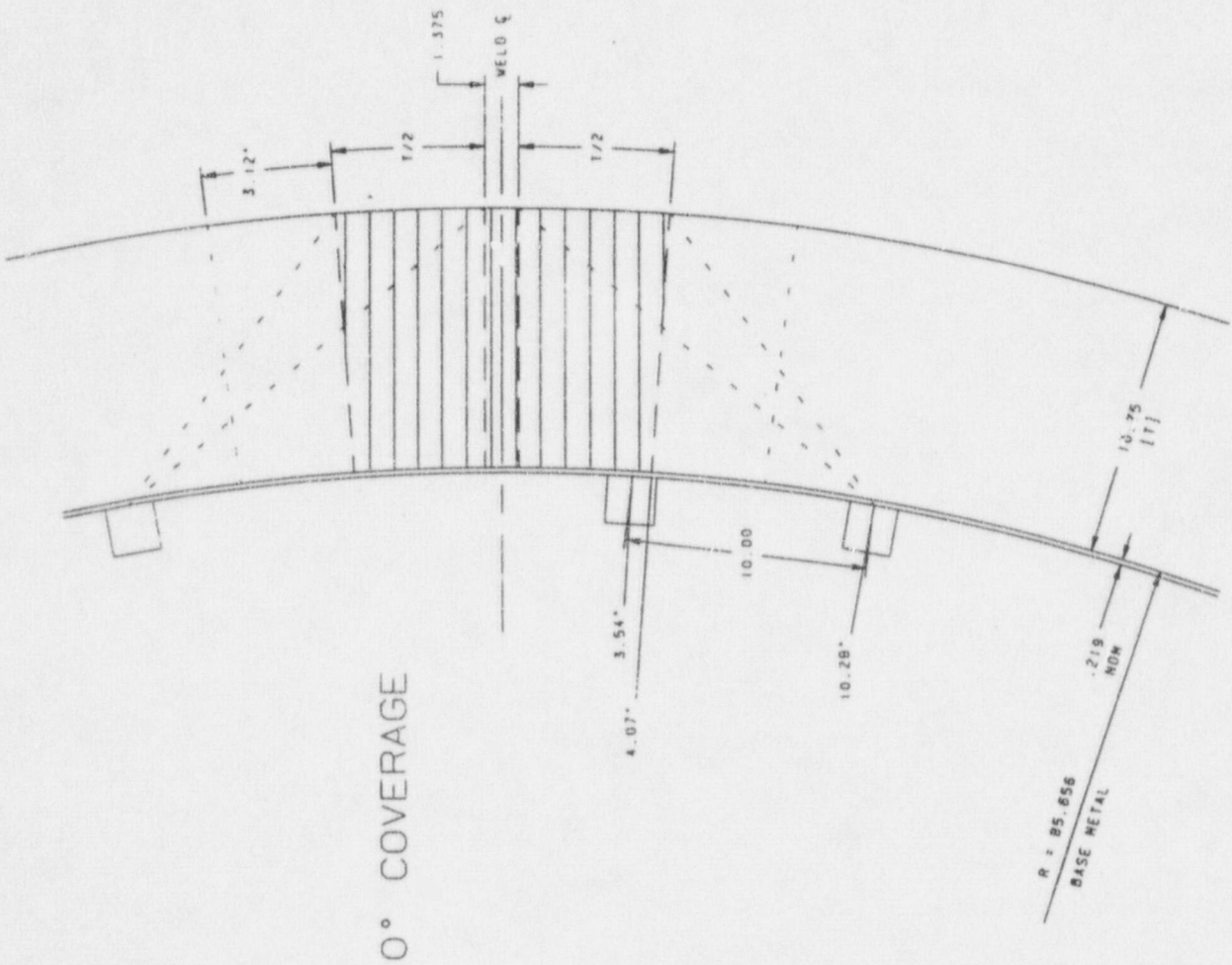


TABLE I

FIGURE NO.	WELD NO.	FILE NAME	CMM COORDINATE RANGES		INDEX INCREMENT	SCAN DIRECTION	SETUP	CHANNEL
			EXTENSION INCHES	ROTATION DEGREES				
B01.012.005	1RPV 2-442B	MIDLONG1Y	138.29 Z 225.12	113.42 θ 126.58	.37°	AXIAL	4	1 - 8
B01.012.005	1RPV 2-442B	MIDLONG1X	136.87 Z 226.48	114.70 θ 125.30	.56"	CIRC	4	1 - 8
B01.012.006	1RPV 2-442C	MIDLONG2Y	138.29 Z 225.12	233.42 θ 246.58	.37°	AXIAL	4	1 - 8
B01.012.006	1RPV 2-442C	MIDLONG2X	136.87 Z 226.48	234.70 θ 245.30	.56"	CIRC	4	1 - 8
B01.012.004	1RPV 2-442A	MIDLONG3Y	138.29 Z 225.12	353.42 θ 366.58	.37°	AXIAL	4	1 - 8
B01.012.004	1RPV 2-442A	MIDLONG3X	136.87 Z 226.48	354.70 θ 365.30	.56"	CIRC	4	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1YA	43.06 Z 59.33	52.68 θ 67.32	.37°	AXIAL	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1XA	38.90 Z 59.33	53.09 θ 66.91	.56"	CIRC	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1YB	111.92 Z 114.36	52.68 θ 67.32	.37°	AXIAL	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1XB	111.92 Z 116.13	53.09 θ 66.91	.56"	CIRC	2	1 - 8
B01.012.002	1RPV 1-442B	UPPRLONG2YA	43.06 Z 52.10	172.68 θ 187.32	.37°	AXIAL	2	1 - 8
B01.012.002	1RPV 1-442B	UPPRLONG2XA	38.90 Z 52.10	173.19 θ 186.91	.56"	CIRC	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3YA	43.06 Z 59.33	292.68 θ 307.32	.37°	AXIAL	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3XA	38.90 Z 59.33	293.09 θ 306.91	.56"	CIRC	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3YB	111.92 Z 114.36	292.68 θ 307.32	.37°	AXIAL	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3XB	111.92 Z 116.13	293.09 θ 306.91	.56"	CIRC	2	1 - 8
B01.012.007	1RPV 3-442A	LOWRLONG1Y	247.13 Z 336.66	53.42 θ 66.58	.37°	AXIAL	4	1 - 8
B01.012.007	1RPV 3-442A	LOWRLONG1X	245.78 Z 333.69	54.70 θ 65.30	.56"	CIRC	4	1 - 8
B01.012.008	1RPV 3-442B	LOWRLONG2Y	247.13 Z 336.66	173.42 θ 186.58	.37°	AXIAL	4	1 - 8
B01.012.008	1RPV 3-442B	LOWRLONG2X	245.78 Z 333.69	174.70 θ 185.30	.56"	CIRC	4	1 - 8
B01.012.009	1RPV 3-442C	LOWRLONG3Y	247.13 Z 336.66	293.42 θ 306.58	.37°	AXIAL	4	1 - 8
B01.012.009	1RPV 3-442C	LOWRLONG3X	245.78 Z 333.69	294.70 θ 305.30	.56"	CIRC	4	1 - 8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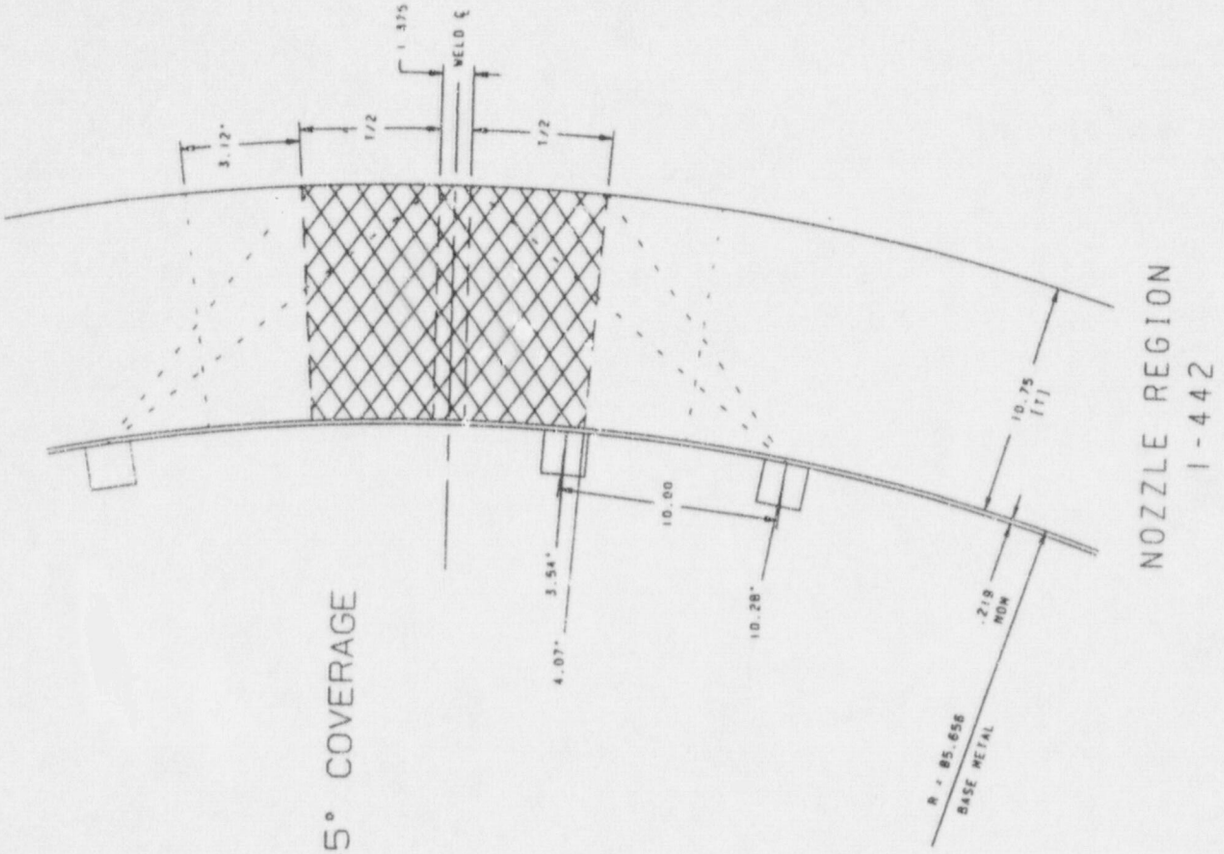
WELD ℄
3.12"
1/2
1/2
10.75
(11)
10.00
3.54"
4.07"
10.28"
.219
NOM
R = 85.656
BASE METAL
0° COVERAGE
NOZZLE REGION
I-442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I-442
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10.75
(T)
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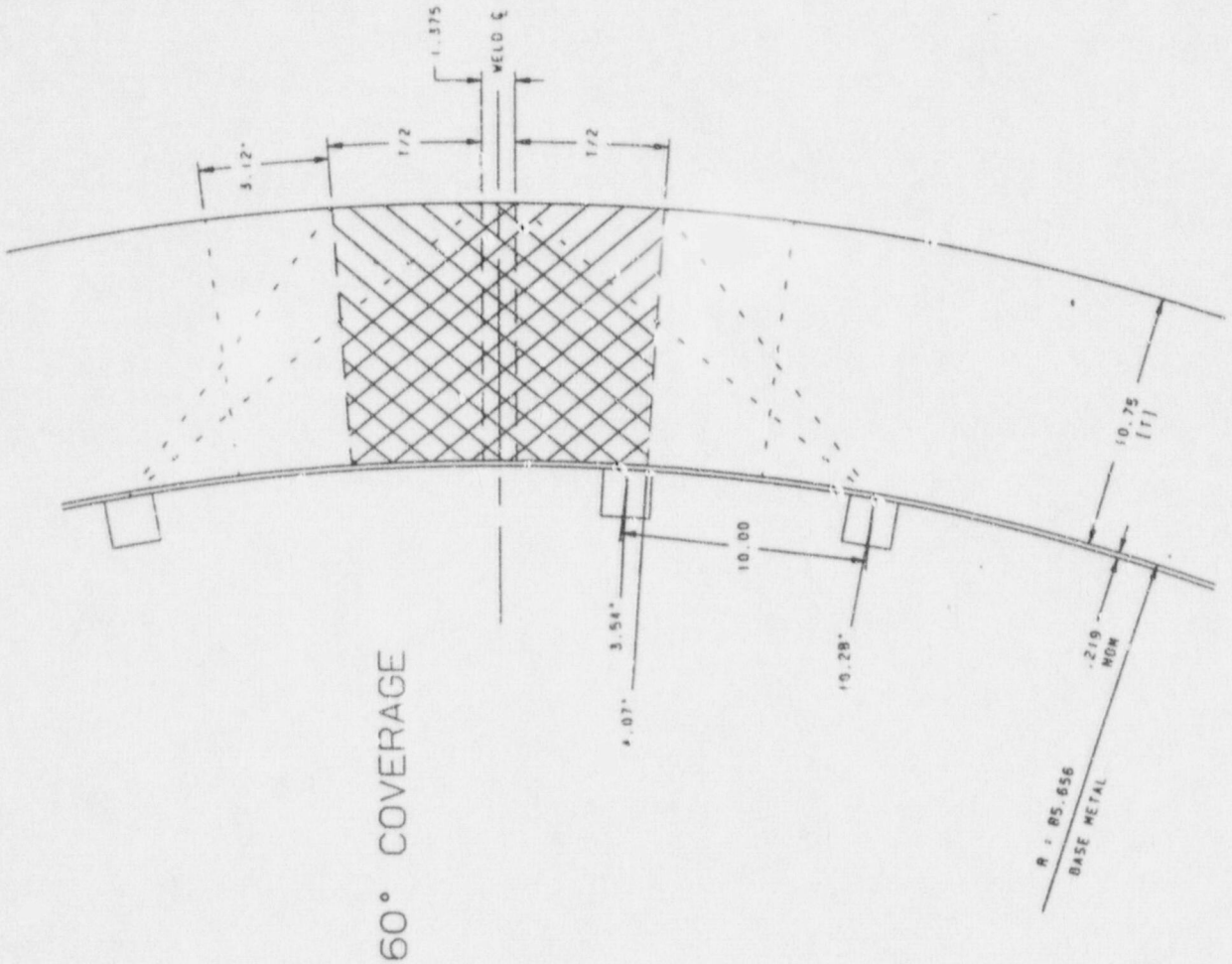
NOM
R = 85.658
BASE METAL


1.375
WELD ℄
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1/2
10.00
3.54"
4.07"
10.28"
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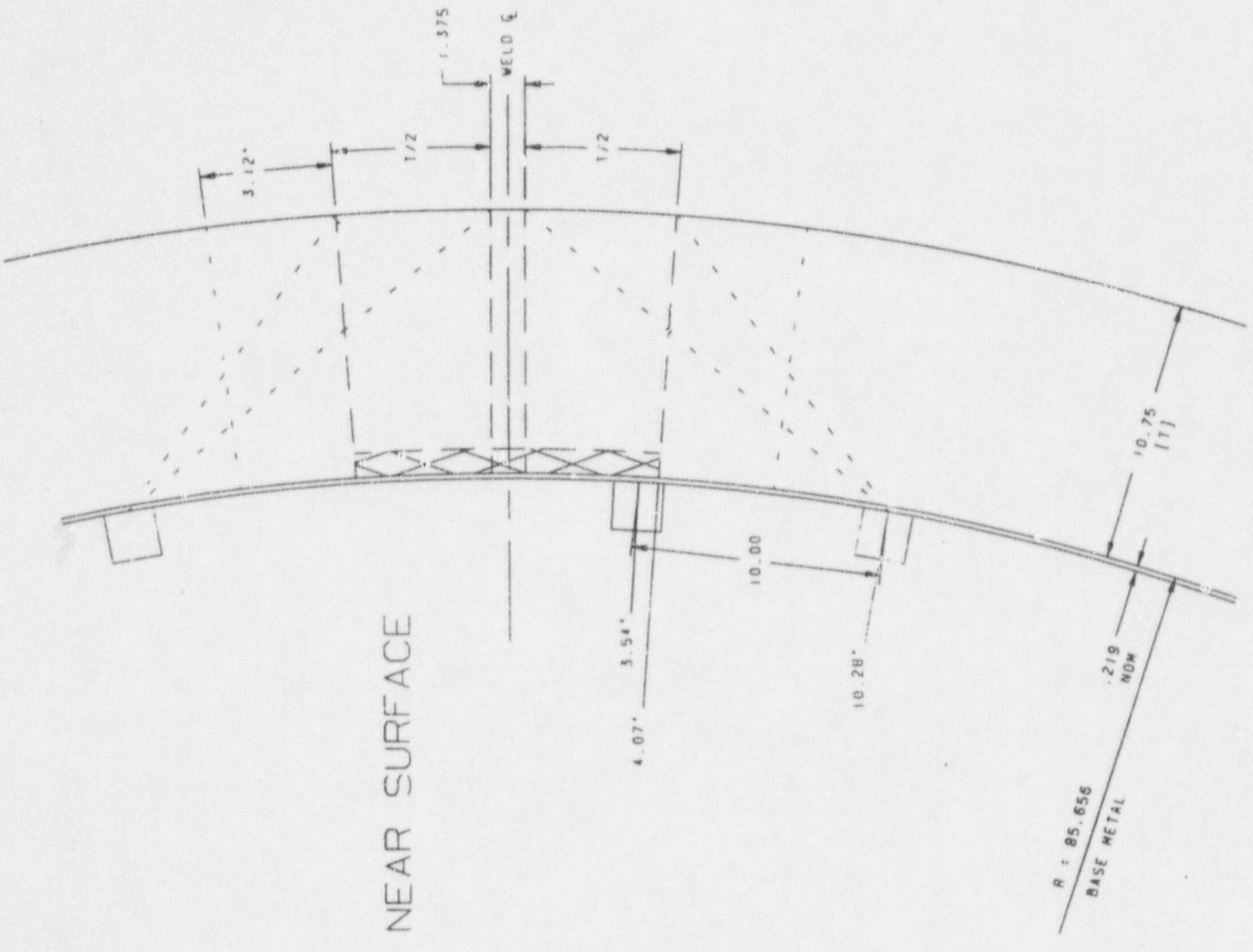
NOM
R = 85.656
BASE METAL
60° COVERAGE
NOZZLE REGION
I-442



SER. NO. 97-002
ATTACHMENT 2
B01.012.001, B01.012.002, B01.012.003
1RPV1-442A, 1RPV1-442B, 1RPV1-442C
PAGE 20 OF 28

EXAMINATION COVERAGE FOR WELD: 3-442 A,B,C

LOWER LONGITUDINAL WELD

AGGREGATE COVERAGE OBTAINED: 84%

SCAN PLAN DRAWING: 1213926D-02

Zone Coverage Obtained

Weld: 84% Adjacent Base Metal: 84% Near (ID) Surface: 84%

Examination Volume Definition

Weld Length: 96.53 in.

Area Measurement			Volume Calculation		
Weld	11.86	sq. in.	Weld	1144.846	cu. in.
Adjacent Base Metal	78.69	sq. in.	Adjacent Base Metal	7595.946	cu. in.
Near Surface	10.06	sq. in.	Near Surface	971.0918	cu. in.

Examination Coverage Calculations

Weld

Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	11.9	80.8	957.7	957.7	100%
2	0	n/a	0.0	15.8	0.0	187.2	0%
3	45	1	11.9	80.8	957.7	957.7	100%
4	45	2	11.9	80.8	957.7	957.7	100%
5	45	1	0.0	15.8	0.0	187.2	0%
6	45	2	0.0	15.8	0.0	187.2	0%
7	45	3	11.9	80.8	957.7	957.7	100%
8	45	4	11.9	80.8	957.7	957.7	100%
9	45	3	0.0	15.8	0.0	187.2	0%
10	45	4	0.0	15.8	0.0	187.2	0%
11	60	1	11.9	80.8	957.7	957.7	100%
12	60	2	11.9	80.8	957.7	957.7	100%
13	60	1	0.0	15.8	0.0	187.2	0%
14	60	2	0.0	15.8	0.0	187.2	0%
15	60	3	11.9	80.8	957.7	957.7	100%
16	60	4	11.9	80.8	957.7	957.7	100%
17	60	3	0.0	15.8	0.0	187.2	0%
18	60	4	0.0	15.8	0.0	187.2	0%
				Totals:	*8619.3*	*10303.6*	*84%*

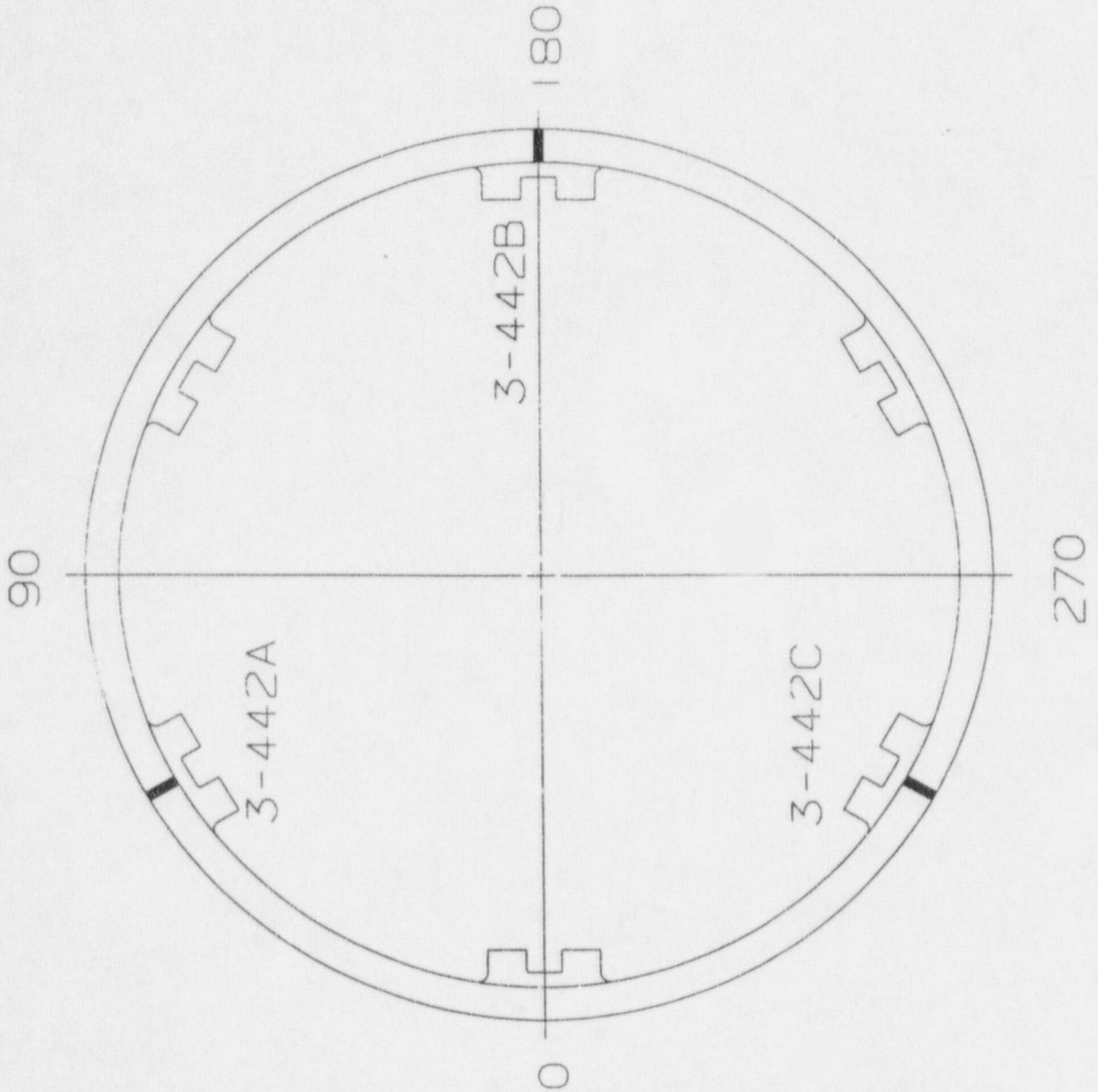
Adjacent Base Metal

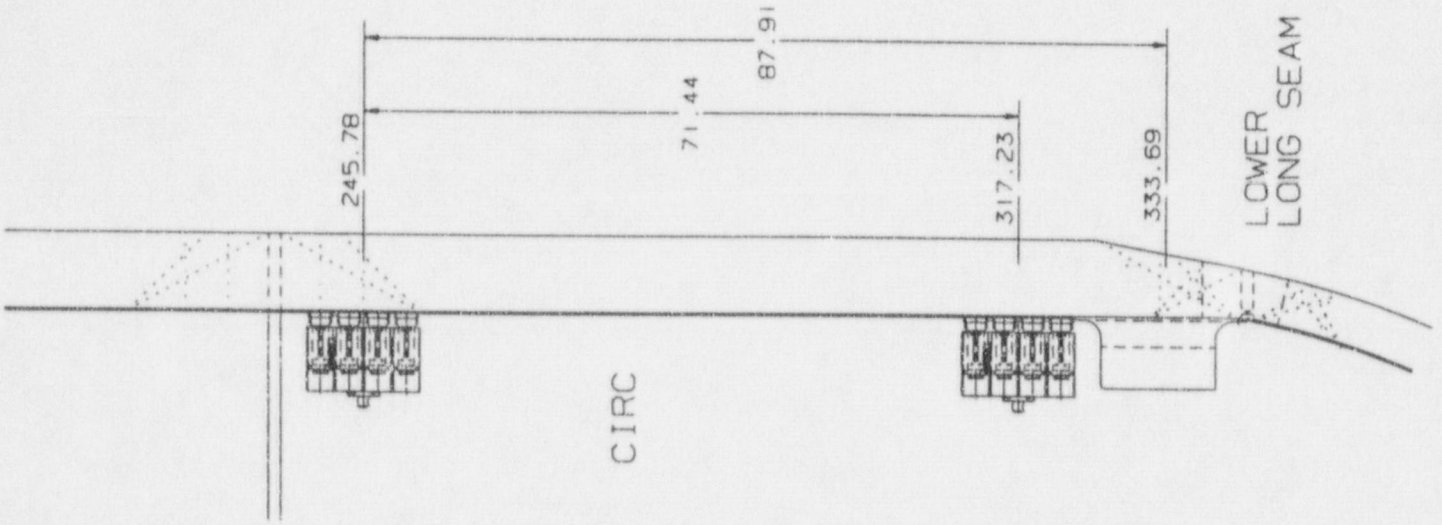
Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	0	n/a	78.7	80.8	6354.2	6354.2	100%
2	0	n/a	0.0	15.8	0.0	1241.7	0%
3	45	1&2	78.7	80.8	6354.2	6354.2	100%
4	45	1&2	0.0	15.8	0.0	1241.7	0%
5	45	3	78.7	80.8	6354.2	6354.2	100%
6	45	4	78.7	80.8	6354.2	6354.2	100%
7	45	3	0.0	15.8	0.0	1241.7	0%
8	45	4	0.0	15.8	0.0	1241.7	0%
9	60	1&2	78.7	80.8	6354.2	6354.2	100%
10	60	1&2	0.0	15.8	0.0	1241.7	0%
11	60	3	78.7	80.8	6354.2	6354.2	100%
12	60	4	78.7	80.8	6354.2	6354.2	100%
13	60	3	0.0	15.8	0.0	1241.7	0%
14	60	4	0.0	15.8	0.0	1241.7	0%
				Totals:	*44479.5*	*53171.6*	*84%*

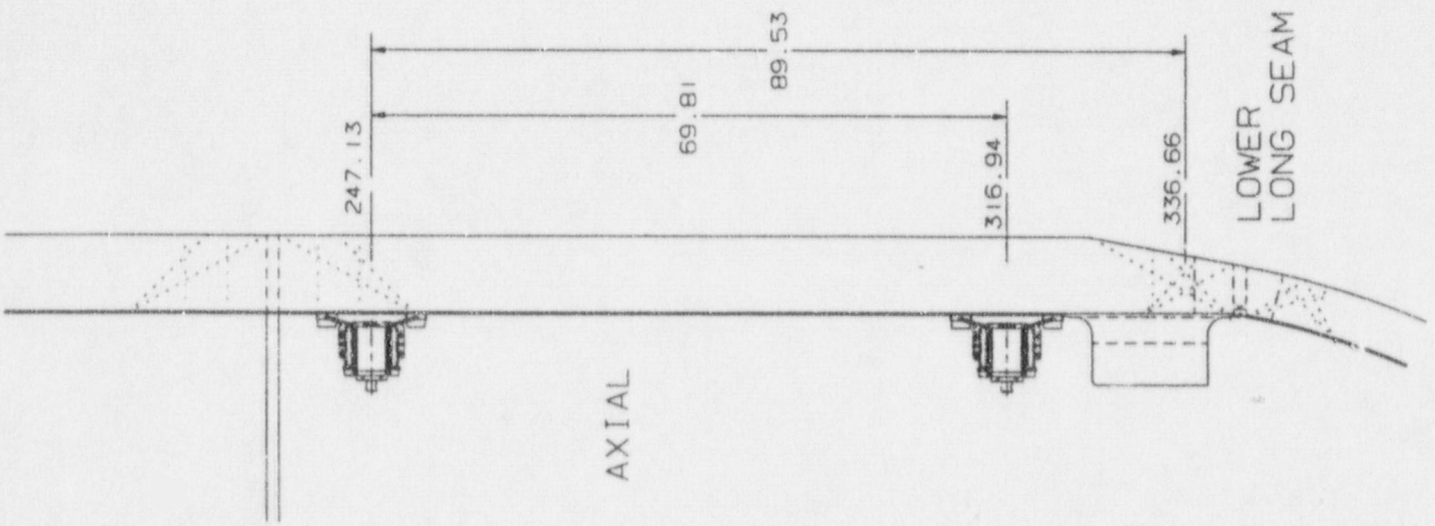
Near Surface

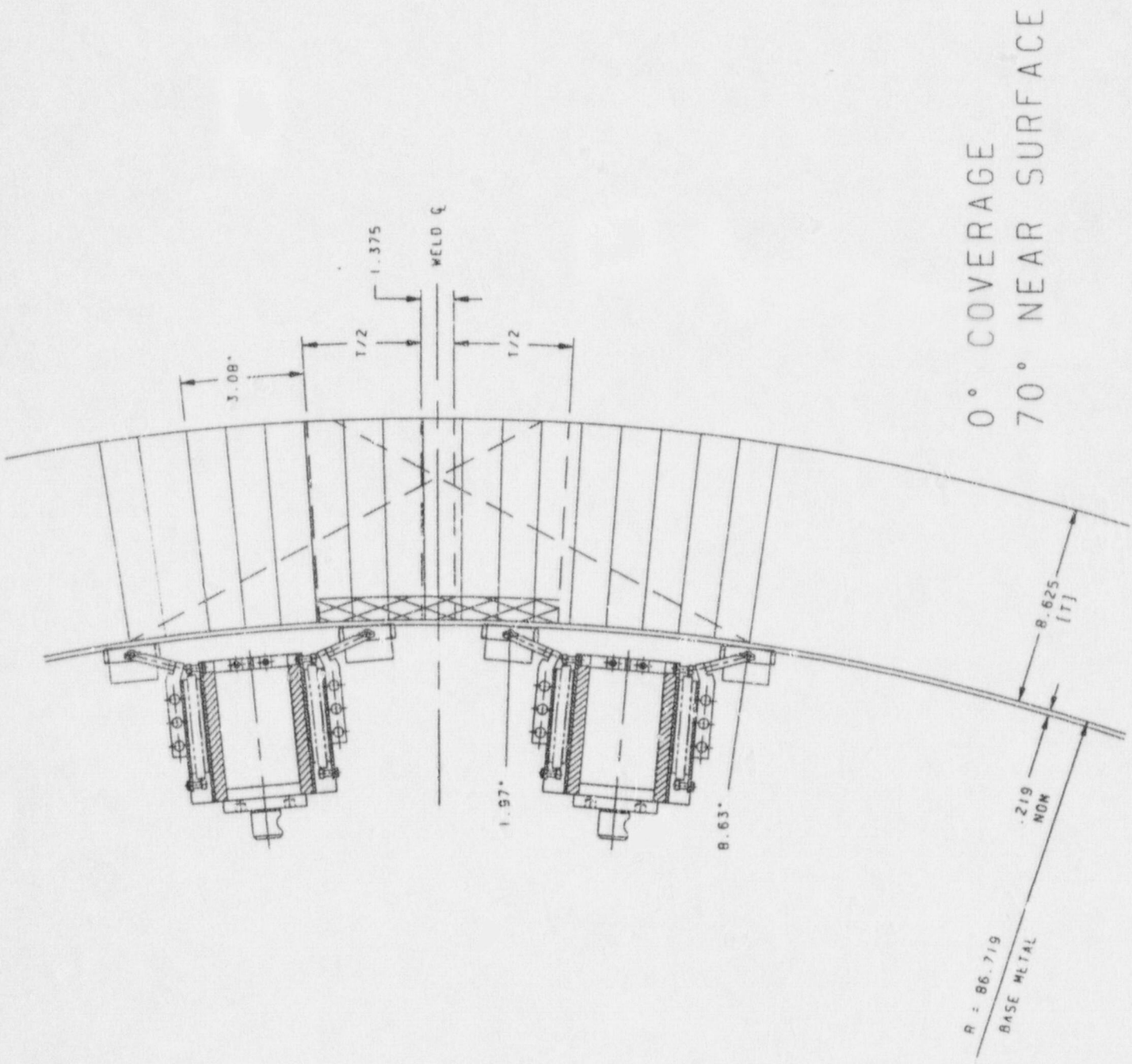
Entry #	Exam. Angle (deg.)	Beam Direction	Area Examined (sq. in.)	Length Examined (in.)	Volume Examined (cu. in.)	Volume Required (cu. in.)	Percent Examined
1	70	axial	10.1	80.8	812.3	812.3	100%
2	70	axial	0.0	15.8	0.0	158.7	0%
3	70	circ	10.1	80.8	812.3	812.3	100%
4	70	circ.	0.0	15.8	0.0	158.7	0%
				Totals:	*1624.7*	*1942.2*	*84%*

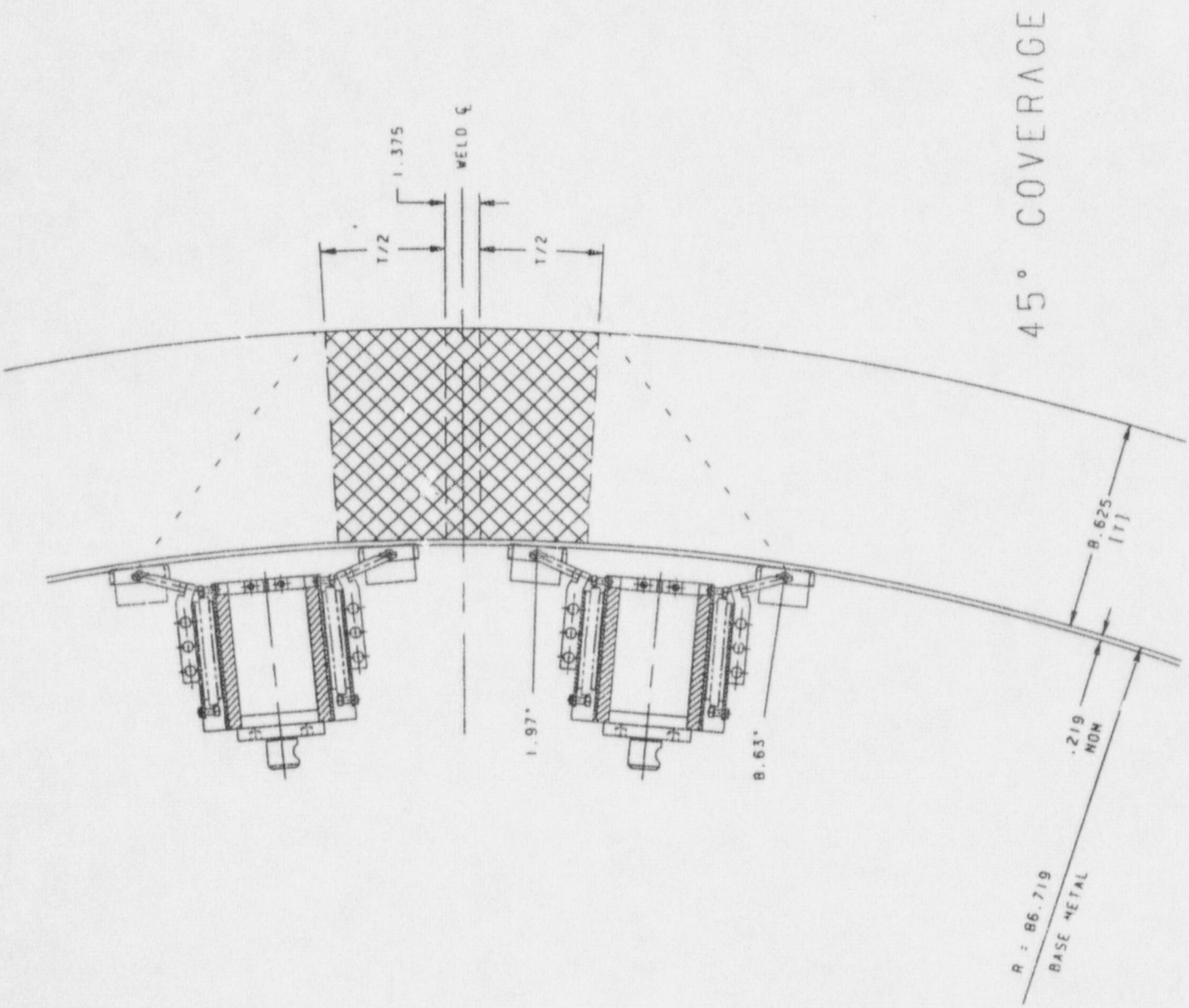
SER. NO. 97-002
ATTACHMENT 2
B01.012.007, B01.012.008, B01.012.009
1RPV3-442A, 1RPV3-442B, 1RPV3-442C
PAGE 21 OF 28

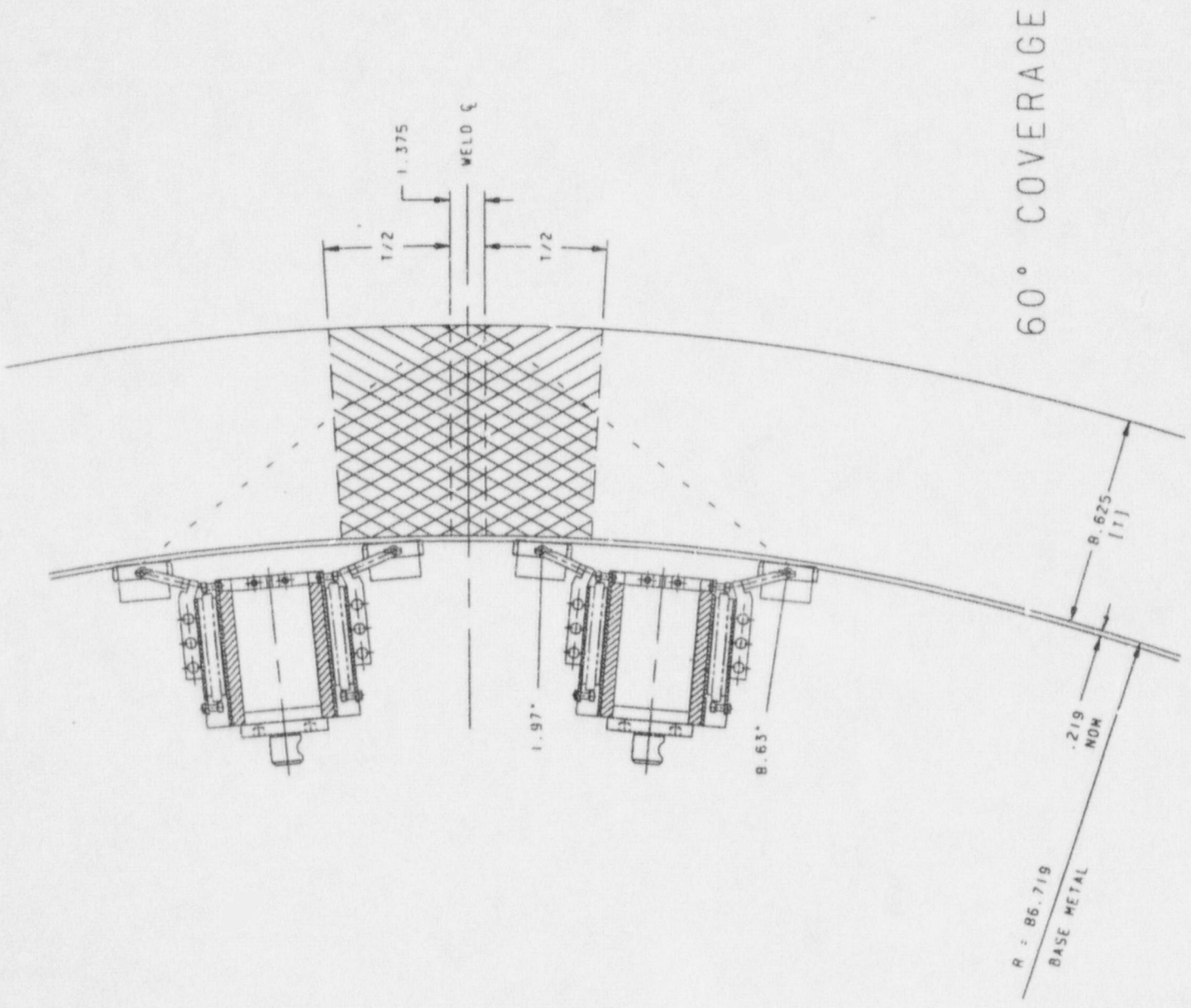

180
3-442B
90
270
3-442A
3-442C
0
LOWER LONGITUDINAL WELD


245.78
71.44
87.91
317.23
333.69
LOWER
LONG SEAM
CIRC


247.13
69.81
89.53
316.94
336.66
LOWER
LONG SEAM
AXIAL


0° COVERAGE
70° NEAR SURFACE
3.08"
T/2
1.375
WELD Q
T/2
8.625
[T]
1.97"
8.63"
.219
NOM
R = 86.719
BASE METAL


45° COVERAGE
1.375
WELD ℄
1/2
1/2
8.625
111
.219
NOM
1.97"
8.63"
R = 86.719
BASE METAL

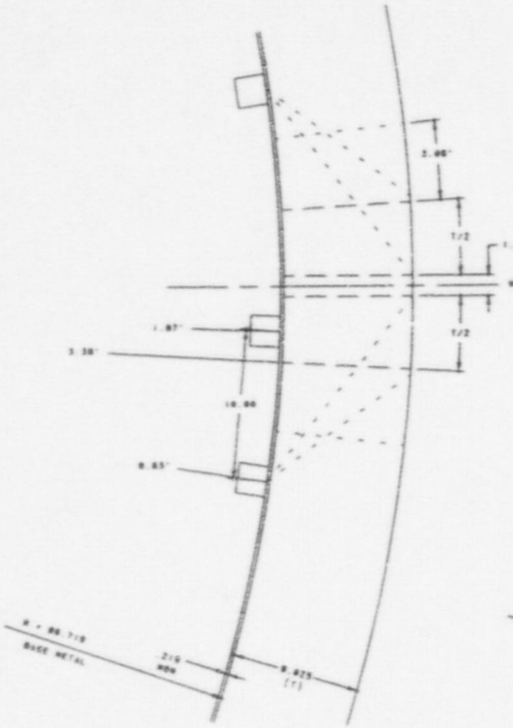

60° COVERAGE
1.375
WELD ℄
1/2
1/2
8.625
[1]
.219
NOM
1.97°
8.63°
R = 86.719
BASE METAL

REV	DESCRIPTION	DATE	APP
1	UPDATE TO REFLECT ACTUAL SCAN COVERAGE		CNF
2	FINAL REPORT VERSION WELD & FIGURE #'s CORRECTED	2/7/92	

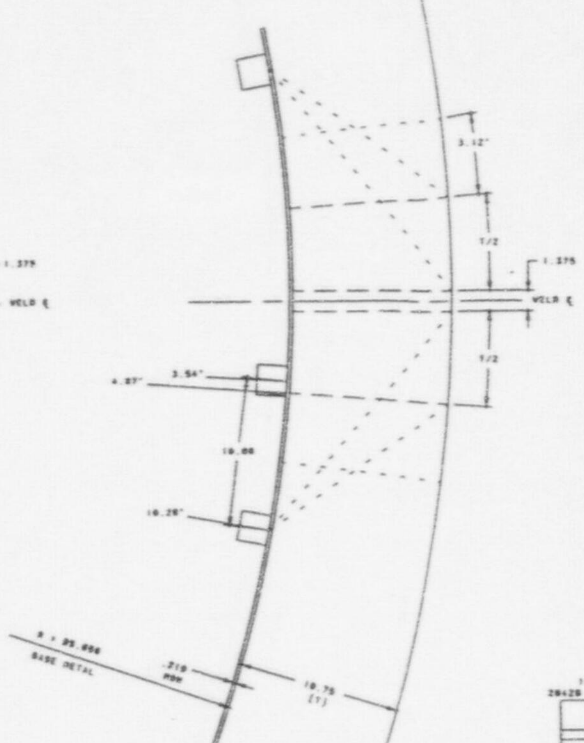
REVISIONS

TABLE I

FIGURE NO.	WELD NO.	FILE NAME	CMM COORDINATE RANGES: EXTENSION INCHES	CMM COORDINATE RANGES: ROTATION DEGREES	INDEX INCREMENT	SCAN DIRECTION	SETUP	CHANNEL
B01.012.005	1RPV 2-442B	MIDLONG1Y	138.29 – 225.12	113.42 – 128.58	.37"	AXIAL	4	1 - 8
B01.012.005	1RPV 2-442B	MIDLONG1X	136.87 – 226.48	114.70 – 125.30	.56"	CIRC	4	1 - 8
B01.012.006	1RPV 2-442C	MIDLONG2Y	138.29 – 225.12	233.42 – 248.58	.37"	AXIAL	4	1 - 8
B01.012.006	1RPV 2-442C	MIDLONG2X	136.87 – 226.48	234.70 – 245.30	.56"	CIRC	4	1 - 8
B01.012.004	1RPV 2-442A	MIDLONG3Y	138.29 – 225.12	353.42 – 368.58	.37"	AXIAL	4	1 - 8
B01.012.004	1RPV 2-442A	MIDLONG3X	136.87 – 226.48	354.70 – 365.30	.56"	CIRC	4	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1TA	43.06 – 58.33	52.68 – 67.32	.37"	AXIAL	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1XA	38.90 – 58.33	53.09 – 66.91	.56"	CIRC	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1YB	111.92 – 114.36	52.68 – 67.32	.37"	AXIAL	2	1 - 8
B01.012.001	1RPV 1-442A	UPPRLONG1XB	111.92 – 118.13	53.09 – 66.91	.56"	CIRC	2	1 - 8
B01.012.002	1RPV 1-442B	UPPRLONG2YA	43.06 – 52.18	172.68 – 187.32	.37"	AXIAL	2	1 - 8
B01.012.002	1RPV 1-442B	UPPRLONG2XA	38.90 – 52.18	173.09 – 186.91	.56"	CIRC	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3YA	43.06 – 58.33	292.68 – 307.32	.37"	AXIAL	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3XA	38.90 – 58.33	293.09 – 306.91	.56"	CIRC	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3YB	111.92 – 114.36	292.68 – 307.32	.37"	AXIAL	2	1 - 8
B01.012.003	1RPV 1-442C	UPPRLONG3XB	111.92 – 118.13	293.09 – 306.91	.56"	CIRC	2	1 - 8
B01.012.007	1RPV 3-442A	LOWRLONG1Y	247.13 – 336.86	53.42 – 68.58	.37"	AXIAL	4	1 - 8
B01.012.007	1RPV 3-442A	LOWRLONG1X	245.79 – 333.89	54.70 – 65.30	.56"	CIRC	4	1 - 8
B01.012.008	1RPV 3-442B	LOWRLONG2Y	247.13 – 336.86	173.42 – 188.58	.37"	AXIAL	4	1 - 8
B01.012.008	1RPV 3-442B	LOWRLONG2X	245.79 – 333.89	174.70 – 185.30	.56"	CIRC	4	1 - 8
B01.012.009	1RPV 3-442C	LOWRLONG3Y	247.13 – 336.86	293.42 – 308.58	.37"	AXIAL	4	1 - 8
B01.012.009	1RPV 3-442C	LOWRLONG3X	245.79 – 333.89	294.70 – 305.30	.56"	CIRC	4	1 - 8



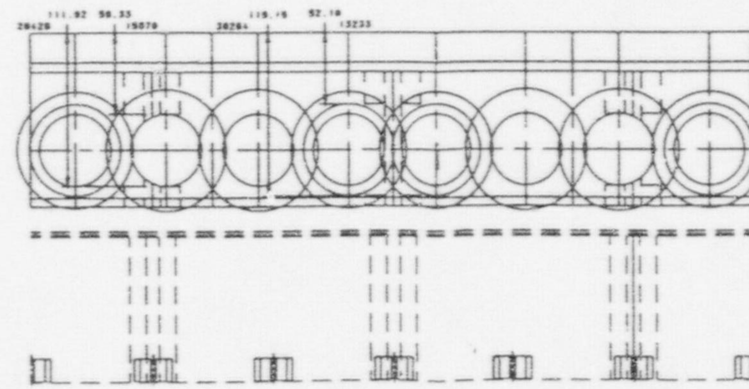
CORE REGION
2-442 & 3-442



NOZZLE REGION
1-442

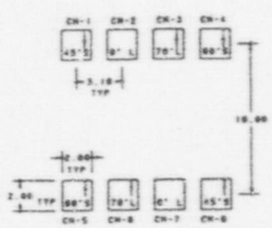
NOTES.

1. For axial scans the center of the head is offset 4.85" on either side of the exam volume. This corresponds to 3.12" on 1-442 and 3.08" on 2-442 & 3-442.



TRANSDUCER TABLE II

WT CHANNEL	DESCRIPTION: SCAN ANGLE	FREQUENCY	SIZE	ELEMENT
1	45° S	1.0	(2) 1.2 X .75	DUAL FLAT
2	0° L	1.0	(2) 1.5 X .75	DUAL FLAT
3	70° L	1.0	[illegible]	TRIPLE FOCUSED
4	60° S	1.0	(2) .97 X .75	DUAL FLAT
5	60° S	1.0	(2) .97 X .75	DUAL FLAT
6	70° L	1.0	[illegible]	TRIPLE FOCUSED
7	0° L	1.0	(2) 1.5 X .75	DUAL FLAT
8	45° S	1.0	(2) 1.2 X .75	DUAL FLAT



TRANSDUCER HEAD CONFIGURATION

ON SCAN SURFACE VIEWED FROM BACK OF HEAD WITH AXIS 4 SET AT 180°

WELD	0 LOCATIONS		
1-442	60.0°	180.0°	300.0°
2-442	0.0°	120.0°	240.0°
3-442	60.0°	180.0°	300.0°

FOR ORIGINAL SIGNATURES SEE MICROFILM IN RECORDS CENTER

CONTRACT NO. 583-0661

McGUIRE UNIT 1
CMM EXAMINATION
SCAN COVERAGE

UPPER, MIDDLE AND LOWER SHELL LONGITUDINAL WELDS

SCALE 1/4

DWG. NO. 1213926 D REV. 2

SER. NO. 97-002
ATTACHMENT 2
B01.012.007, B01.012.008, B01.012.009
1RPV3-442A, 1RPV3-442B, 1RPV3-442C