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50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287
AUTH.NAME AUTHOR AFFILIATION
HAMPTON,J.W. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards relief request 95-04,allowing util to take credit for limited ultrasonic exams on certain reactor vessel head welds,reactor vessel head-to-flange welds,SG nozzle-to-vessel welds & SG nozzle inside radius welds.

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P R I O R I T Y 1 D O C U M E N T

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DUKE POWER

October 5, 1995

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

Subject: Duke Power Company
Oconee Nuclear Station, Units 1, 2, and 3
Docket Nos. 50-269, -270, and -287
Third Ten Year Inservice Inspection Interval
Request for Relief No. 95-04

Pursuant to 10 CFR 50.55a, section (g) (4) (iii), attached is a Request for Relief from ASME Section XI, 1989 Edition. This request is to allow Duke Power to take credit for limited ultrasonic examinations on certain reactor vessel head welds, reactor vessel head-to-flange welds, steam generator nozzle-to-vessel welds, and steam generator nozzle inside radius welds. During the examinations, the ultrasonic examination coverage did not meet the 90% examination coverage requirements of ASME Section XI. Achievement of greater than 90% examination coverage for the subject welds is impractical due to piping geometry, joint configuration, and interferences. All three Oconee units are being addressed by this Request for Relief per recommendations delineated in NRC Inspection Report 95-05 dated 5/5/95.

If there are any questions or further information is needed you may contact D. A. Nix at (803) 885-3634.

Very truly yours,

J. W. Hampton
Site Vice President

Attachment

A047
1/1

xc (w/attch): Mr. L. A. Wiens
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

xc (w/o attch): Mr. S. D. Ebneter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Max Batavia
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

Duke Power Company

Station Oconee Unit 1, 2 & 3

10-YEAR INTERVAL REQUEST FOR RELIEF NO. 95-04

I. System/Component(s) for Which Relief is Requested:

a. Reactor vessel head welds;

1-RPV-WH5, Item Number B01.021.001
2-RPV-WH5, Item Number B01.021.001
3-RPV-WH5; Item Number B01.021.001

b. Reactor vessel head-to-flange welds:

1-RPV-WH7, Item Number B01.040.001
2-RPV-WH7, Item Number B01.040.001
3-RPV-WH7, Item Number B01.040.001

c. Steam generator nozzle-to-vessel welds:

1-SGA-WG50-2, Item Number B03.130.001
1-SGA-WG50-1, Item Number B03.130.002
2-SGA-WG50-2, Item Number B03.130.003
2-SGA-WG50-1, Item Number B03.130.004
3-SGA-WG50-2, Item Number B03.130.001
3-SGA-WG50-1; Item Number B03.130.002

d. Steam generator nozzle inside radius welds:

1-SGA-WG50-2, Item Number B03.140.001
1-SGA-WG50-1, Item Number B03.140.002
2-SGA-WG50-2, Item Number B03.140.003
2-SGA-WG50-1, Item Number B03.140.004
3-SGA-WG50-2, Item Number B03.140.001
3-SGA-WG50-1, Item Number B03.140.002

II. Code Requirement:

Section XI Table IWB-2500-1, Examination Category B-A, Pressure Retaining Welds In Reactor Vessel, Figure IWB-2500-3, Note 2 requires essentially 100% of the weld length be examined.

Section XI Table IWB-2500-1, Examination Category B-A, Pressure Retaining Welds In Reactor Vessel, Figure IWB-2500-5, Note 2 requires essentially 100% of the weld length be examined.

Section XI Table IWB-2500-1, Examination Category B-D, Full Penetration Welds Of Nozzles In Vessels - Inspection Program B, Figures IWB-2500-7(a) through IWB-2500-7(d) requires essentially 100% of the nozzle weld and radius be examined.

III. Code Requirement from which Relief is Requested:

Relief is requested from the requirement of examining essentially 100% of the weld length. Due to part geometry and actual physical barriers, obtaining even 90% of the weld length as outlined in Code Case N-460 is not possible.

ASME Section V, Article 4, T-441.3.2 Scanning Requirements, 1989 Edition with no addenda as modified by Code Case N-460.

This Paragraph requires scanning of the examination volume(s) using three angle beams and a straight beam from both sides of the weld. When scanning for reflectors parallel to the weld, the angle beams shall be aimed at right angles to the weld axis, with the search unit(s) manipulated so that the ultrasonic beams pass through the entire volume of weld metal. The adjacent base metal in the examination volume must be completely scanned by two angle beams, but need not be completely scanned by both angle beams from both directions (any combination of two angle beams will satisfy the requirement).

When scanning for reflectors transverse to the weld, the angle beam search units shall be aimed parallel to the axis of longitudinal and circumferential welds. The search unit shall be manipulated so that the ultrasonic beams pass through all of the examination volume.

Scanning shall be done in two directions 180 degrees to each other to the extent possible. Areas blocked by geometric conditions shall be examined from at least one direction.

Code Case N-460 allows credit for full volume coverage if it can be shown that at least 90% of the required volume has been examined.

IV. Basis for Relief:

Item Number B01.021.001 (3RPV-WH5), RPV Head Weld was examined to the maximum extent practical using ultrasonic techniques in accordance with the requirements of ASME Section V, Article 4, 1989 Edition. The additional requirements of Regulatory Guide 1.150, Revision 1, Appendix A were also used in the examination.

Because of geometric conditions, i.e., lifting lugs adjacent to the weld, 81.85% of the near surface volume and 79.85% of the weld and base metal volumes were covered. In order to achieve more coverage of the required volumes the lifting lugs would have to be moved away from the weld area.

Item Number B01.040.001 (3RPV-WH7), RPV Head-to-Flange Weld was examined to the maximum extent practical using ultrasonic techniques in accordance with the requirements of ASME Section V, Article 4, 1989 Edition. The additional requirements of Regulatory Guide 1.150, Revision 1, Appendix A were also used in the examination.

Because of geometric conditions, i.e., single sided access, 63.35% of the near surface volume and 48.55% of the weld and base metal volumes were covered. In order to achieve more coverage of the required volumes, the weld must be at a greater distance from the flange.

Item Numbers B03.130.001 (3-SGA-WG50-2, nozzle weld), B03.130.002 (3-SGA-WG50-1, nozzle weld), B03.140.001 (3-SGA-WG50-2, inside radius) and B03.140.002 (3-SGA-WG50-1, inside radius), Steam Generator A Primary Outlet Nozzle-to-Lower Head Weld were examined to the maximum extent practical using ultrasonic techniques in accordance with the requirements of ASME Section V, Article 4, 1989 Edition.

Because of geometric conditions, i.e., single sided access and support skirt location, 15.6% of the required examination volume was covered. In order to achieve more coverage the support skirt would have to be cut away from the nozzle.

All three units for Oconee are being addressed in this request for relief as addressed in NRC correspondence dated May 5, 1995 concerning NRC Inspection Report No. 50-269/95-05, 50-270/95-05, 50-287/95-05.

V. Alternate Examinations or Testing:

Duke Power Company will continue to perform an ultrasonic examination of Item Numbers B01.021.001, 3RPV-WH5, RPV Head Weld and B01.040.001, 3RPV-WH7, RPV Head-to-Flange Weld 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.

Duke Power Company will continue to perform an ultrasonic examination of Item Numbers B03.130.002, B03.130.001, B03.140.002 and B03.140.001, Steam Generator A Primary Outlet Nozzle-to-Lower Head Weld and Inside Radius to the maximum extent practical in accordance with the requirements of ASME Section V, Article 4, 1989 Edition.

VI. Justification for the Granting of Relief:

As stated above, Duke Power Company will continue to ultrasonically examine the welds and components (inside radius) to the extent practical within the limits of original design and construction. This will provide reasonable assurance of weld / component integrity. Thus, an acceptable level of quality and safety will have been achieved and public health and safety will not be endangered by allowing relief from the aforementioned Code requirements.

VII. Implementation Schedule:

Unit 3, Refueling Outage 15

Unit 1, Refueling Outages 16 & 17

Unit 2, Refueling Outage 15

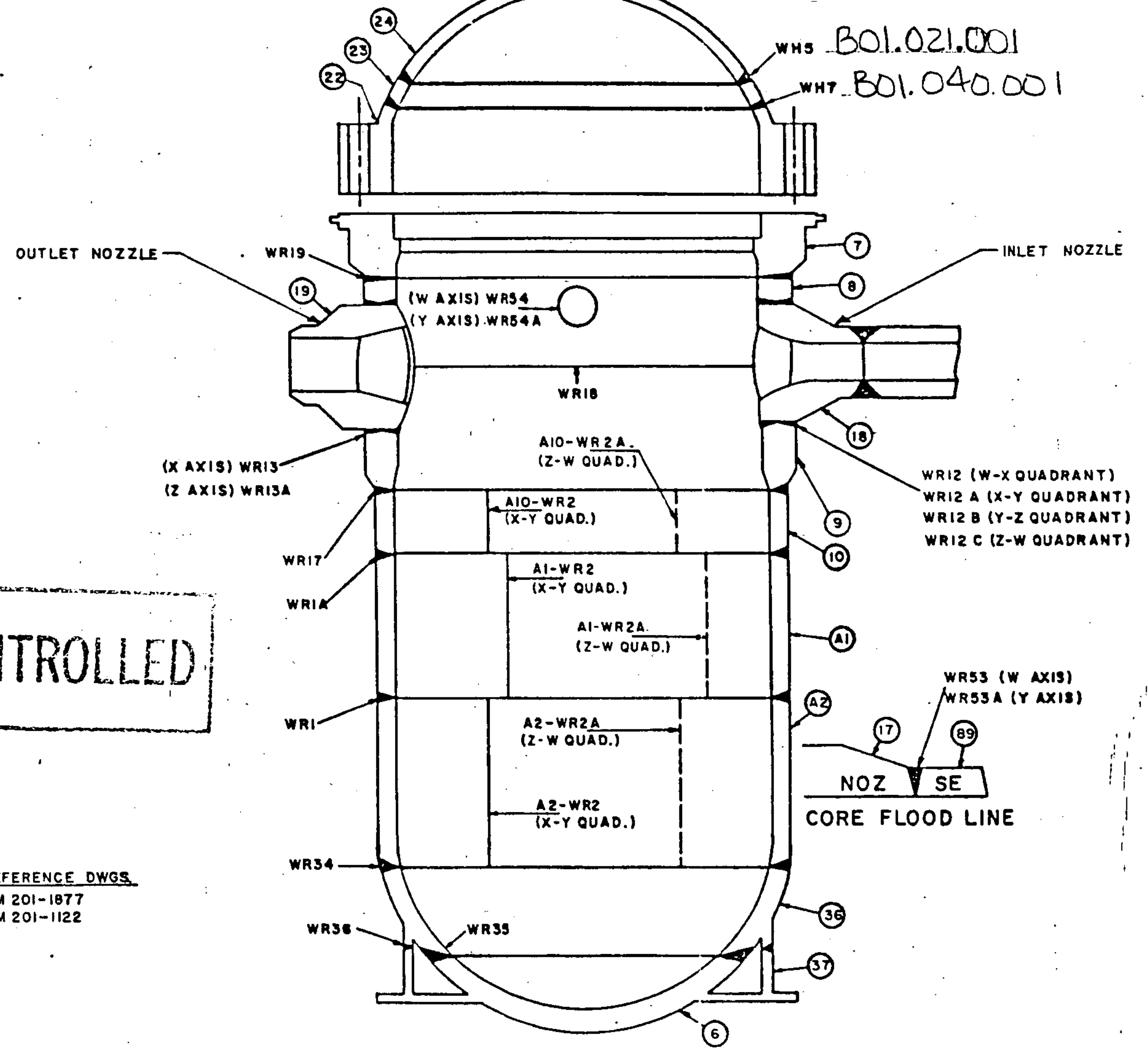
Evaluated By: R L Rowe Date 10/2/95

Reviewed By: J C Thompshire Date 10/2/95

WELD LIST			
IDENT NO.	PIECE NO.	DIAM.	THICK.
WR1	A1 TO A2	171" I.D.	9.500
WR1A	10 TO A1	171" I.D.	9.500
A1 – WR2	A1 TO A1	N/A	9.500
A1 – WR2A	A1 TO A1	N/A	9.500
A2 – WR2	A2 TO A2	N/A	9.500
A2–WR2A	A2 TO A2	N/A	9.500
A10-WR2	A10 TO A10	N/A	9.500
A10-WR2A	A10 TO A10	N/A	9.500
WR12	18 TO 8 & 9	48" OD	12.000
WR12A	18 TO 8 & 9	48" O.D.	12.000
WR12B	18 TO 8 & 9	48" O.D.	12.000
WR12C	18 TO 8 & 9	48" O.D.	12.000
WR13	19 TO 8 & 9	60" OD.	12.000
WR13A	19 TO 8 & 9	60" O.D.	12.000
WR17	9 TO 10	171" I.D.	9.500
WR18	8 TO 9	168" I.D.	12.000
WR19	7 TO 8	171" I.D.	12.000
WR34	A2 TO 36	170" I.D.	5.500
WR35	36 TO 6	143" I.D.	5.375
WR36	36 TO 37	175" I.D.	2.000
WR53	89 TO 17	15.625" O.D.	1.688
WR53A	89 TO 17	15.625" O.D.	1.688
WR54	17 TO 8	25.0"	12.000
WR54A	17 TO 8	25.0"	12.000
WH5	24 TO 23		6.625
WH7	23 TO 22	147" I.D.	6.625

BILL OF MATERIAL			
PC. NO	QTY	DESCRIPTION	MATL.
A1	1	LOWER SHELL ASS'Y. UPPER COURSE	SA 533 GR. B
A2	1	LOWER SHELL ASS'Y. LOWER COURSE	SA 533 GR. B
6	1	LOWER HEAD ASS'Y. CAP SECTION	SA 533 GR. B
7	1	REACTOR VESSEL FLANGE	SA 508 CL. 2
8	1	NOZZLE BELT UPPER COURSE	SA 508 CL. 2
9	1	NOZZLE BELT LOWER COURSE	SA 508 CL. 2
10	1	UPPER SHELL ASS'Y. LOWER COURSE	SA 533 GR. B
17	2	CORE FLOOD NOZZLE	SA 508 CL. 2
18	4	INLET NOZZLE	SA 508 CL. 2
19	2	OUTLET NOZZLE	SA 508 CL. 2
22	1	UPPER HEAD FLANGE	SA 508 CL. 2
23	1	UPPER HEAD RING SECTION	SA 508 CL. 2
24	1	UPPER HEAD CAP SECTION	SA 533 GR. B
36	1	LOWER HEAD RING SECTION	SA 508 CL. 2
37	1	REACTOR VESSEL SUPPORT SKIRT	SA 516 GR. 70
89	2	CORE FLOOD NOZZLE SAFE END	SA 336-65A-F8M

UNCONTROLLED



REFERENCE DWGS.
OM 201-1877
OM 201-1122

NOTES:
1. ALL I.D. NUMBERS SHALL BE PRECEDED BY "IRPV-".
2. PIECE NUMBERS ARE SHOWN IN CIRCLES.

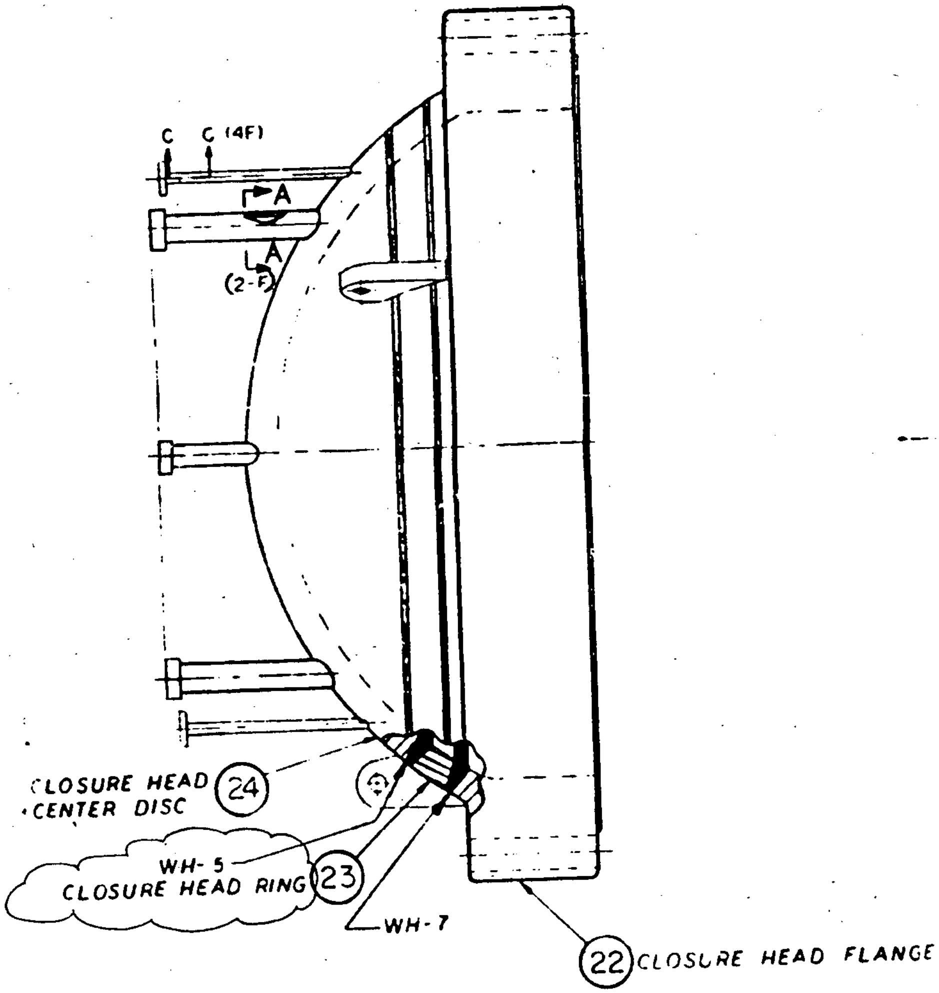
NO.	REVISION	DRWN DATE	RVWD DATE	APPD DATE
1	Add. Ref. Dwgs.	[illegible]	[illegible]	[illegible]
0	ORIGINAL	[illegible]	[illegible]	[illegible]

TITLE
REACTOR VESSEL
WELD OUTLINE

DWG. NO. ISI-OCNI-001 REV 1

REVISIONS

REVISION NO.	DESCRIPTION	DATE	APPROVAL
1	PLAN VIEW ~ RELOCATED LIFTING LUGS 90° CLOCKWISE XTD/AMS	[illegible]	G. R[illegible]
2	(5B) ADDED THERMOCOUPLE PENETRATIONS (4F) ADDED SECTION C-C RWN/AMS	6-7-68	G.R[illegible]
3	(ZONE C-8) RELOCATED SECT. A-A INDICATION. (ZONE I-11) REMOVED REF. TO CONTRACTS 620-0004 & 620-0009. (ZONE G-2 H-2) IN SECT. B-B: EXTENDED VIEW TO INCLUDE MK-152 (WH-38.'R[illegible] (H-1) G43 WAS .750.	11/[illegible]/68	R[illegible]
4	(8C) RELOCATED CALLOUT FOR SECT A-A (2&[illegible]H): DELETED MK-152 & WH-38. (4F) CHG'D CONFIG. OF WELD PREP TO SUIT DETAIL DWG. REL/RFH	8/8/69	K[illegible]
5	(SECTION "A-A" & "B-B") MOVED SOURCE & PENETRAMETER OUTSIDE OF CRDM HOUSING & (SECTION "B-B") FINE GRAIN FILM WAS AA OR EQUIV. 200KV TO 400KV X-RAY WAS IR-192, & ADDED MIN FOCAL DIST 36" ADV/SGS	9/11/70	B[illegible]



UNCONTROLLED

WELD LIST				BILL OF MATERIAL			
IDENT NO.	PIECE NO.	DIAM.	THICK.	PC. NO.	QTY	DESCRIPTION	MATL.
WG8-1	1 TO 2	138" I.D.	4.188 MIN.	1	1	SHELL SECTION	SA 212 GR.B
WG8-2	2 TO 3	138" I.D.	4.188 MIN.	2	2	SHELL SECTION	SA 212 GR.B
WG8-3	3 TO 2	138" I.D.	4.188 MIN.	3	1	SHELL SECTION	SA 212 GR.B
WG8-4	5 TO 6	138" I.D.	4.188 MIN.	4	1	SHELL SECTION	SA 212 GR.B
WG23-1	14 TO 3	29.00"	6.625 MIN.	5	1	SHELL SECTION	SA 212 GR.B
WG23-2	14 TO 3	29.00"	6.625 MIN.	6	1	SHELL SECTION	SA 212 GR.B
WG25	70 TO 8	48.63"	8.000 MIN.	7	1	LOWER HEAD	SA 302 GR.B
WG50-1	65 TO 7	38.38"	8.000 MIN.	8	1	UPPER HEAD	SA 302 GR.B
WG50-2	65 TO 7	38.38"	8.000 MIN.	14	2	24" STEAM OUTLET NOZZLE	SA 508 CL.1
WG57	95 TO 7	135" I.D.	N/A	50	1	LOWER TUBE SHEET	SA 508 CL.2
WG58-1	8 TO 51	119" I.D.	8.000 MIN.	51	1	UPPER TUBE SHEET	SA 508 CL
WG58-2	7 TO 50	119" I.D.	8.000 MIN.	65	2	28" PRIMARY OUTLET NOZZLE	SA 508 CL
WG59	6 TO 50	138" I.D.	6.625 MIN.	70	1	36" PRIMARY INLET NOZZLE	SA 508 CL.1
[illegible]	1 TO 51	138" I.D.	6.625 MIN.	95	1	SUPPORT SKIRT TRANSITION RING	SA 302 GR.B

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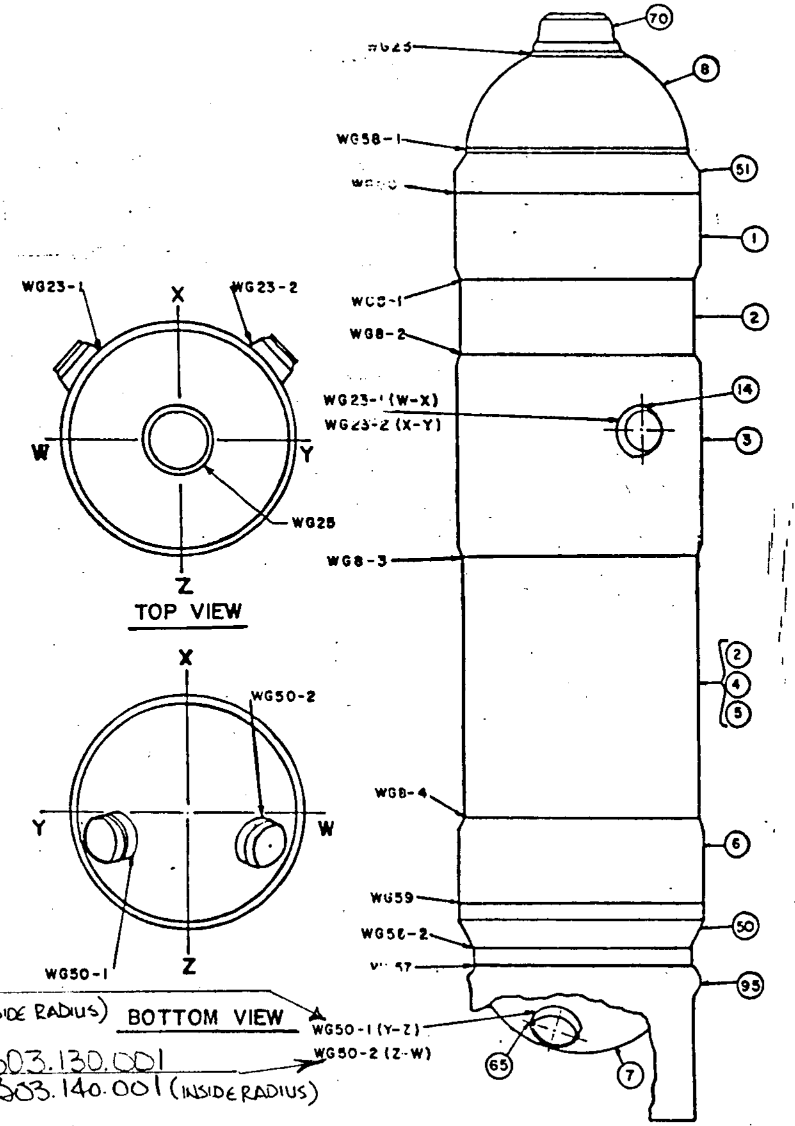


B03.130.002
B03.140.002 (INSIDE RADIUS)

B03.130.001
B03.140.001 (INSIDE RADIUS)

REFERENCE DWGS:
OM 201-1873
OM 201-176

NOTES:

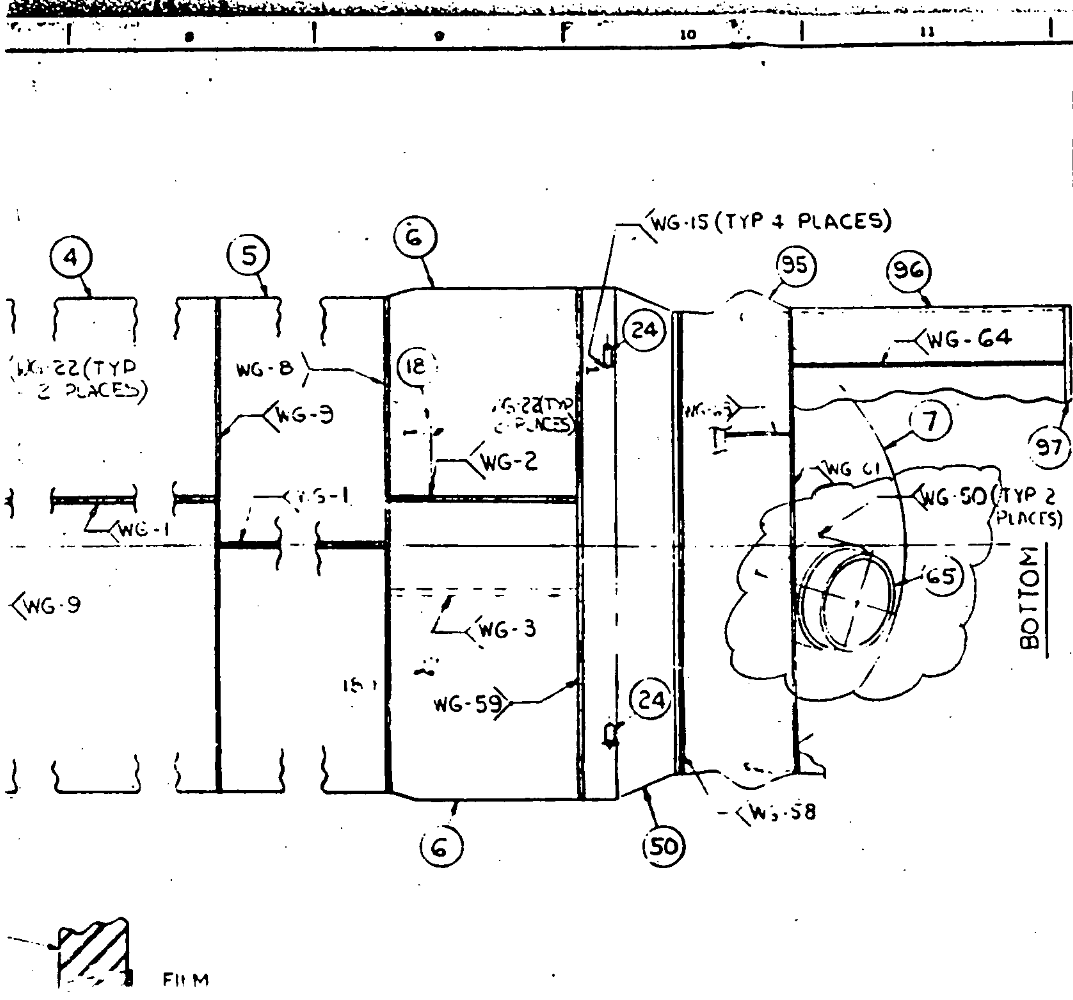
1. ALL I.D. NUMBERS SHALL BE PRECEDED BY "ISGA-".
2. PIECE NUMBERS ARE SHOWN IN CIRCLES.

NO.	REVISION	DRWN DATE	RVWD DATE	APPD DATE
1.	Add Top & Bot. Views & Ref. Drawings	[illegible] 7-[illegible]	JJH [illegible]	JOE 7-[illegible]
0	ORIGINAL	[illegible]		

TITLE
STEAM GENERATOR "A"
WELD OUTLINE

DWG NO. ISI-OCNI-003 REV. 1

UNCONTROLLED



REVISIONS

NO.	DESCRIPTION	DATE	APPROVAL
1	RELOCATED WG-68 ZONE G-10 TO F-7 CHGD WELD DET ZONE I-1 CHGD LOC & DET SECTION D-D ADDED DET & CHART ZONE I-8 CF/RM	9/16/67	[illegible]
2	RELOCATED MK-20, ADDED MK-18 & CHG'D TABLE 'D-D' TO AGREE	1/29/68	[illegible]
3	ADDED LOWER MK-18 & WELD WG-117(7&C AND 8 I) DELETED WELD NUMBERS WG-54 WG-56 WG-57 WG 97 WG-98 & WG-99 (10-L-B.C.D) AND FROM TABLES 1,2 D (7-I, AND 8,9-I) CHG'D MIN THK AND PENE FOR WELD WG-68 (7-F) KW/CH	3/26	[illegible]
4	CHG'D WG-50 FROM SECT 'C-C' TO SECT 'B-B'. DRS/TSR	6/10/68	[illegible]
5	REMOVED CONTRACT NOS 620-0004-55 & 620-0009-55 AND ADD UNIT #1 & SHEET #1 IN TITLE BLOCK. DELETED WG-117 (C-9) CHG'D MK-20 TO MK-18 (BC-9) (B-4) (SECT 'D-D'). DRS/[illegible]	9/17/68	[illegible]
6	CHG'D SECT "E-E" (WG-15) FROM SINGLE WALL TO DOUBLE WALL SHOT & MOVED LOCATION OF SECT "E-E" FROM (H-10) TO (D-2). ADDED TUBESHEET PLUG X-RAY INFORMATION (H-10). JSE/ED	4/4/68	[illegible]
7	REMOVED BACKING RING AT WELD WG-60 ZONE (I-2), DELETED WELD WG-29 & SECT. 'A-A' (D4-2, B10) TR	2/27/69	[illegible]

NOTES

1. FOR GENERAL NOTES SEE LONGITUDINAL SECTION DRAWING

STEAM GENERATOR

WELD ID

2-SGA-WG50-2
2-SGA-WG50-1

ITEM NOS.

B03.130.001
B03.140.001

B03.130.002
B03.140.002