

ACCELERATED DOCUMENT DISTRIBUTION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9302160220 DOC. DATE: 93/02/03 NOTARIZED: NO DOCKET #
 FACIL: 50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269
 AUTH. NAME AUTHOR AFFILIATION
 HAMPTON, J.W. Duke Power Co.
 RECIP. NAME RECIPIENT AFFILIATION
 Document Control Branch (Document Control Desk)

SUBJECT: Forwards second 10-yr inservice insp interval Request for Relief 93-01 for Class 1 or 2 welds on reactor vessels. Due to actual physical barriers, coverage on at least 90% of weld vol not possible.

DISTRIBUTION CODE: A047D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 12
 TITLE: OR Submittal: Inservice Inspection/Testing/Relief from ASME Code

NOTES:

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD2-3 LA	1 0	PD2-3 PD	1 1
WIENS, L	2 2		
INTERNAL: ACRS	6 6	NRR/DET/ECMB 9H	1 1
NRR/DET/EMEB 7E	1 1	NUDOCS-ABSTRACT	1 1
OC/LEMB	1 0	OGC/HDS2	1 0
<u>REG FILE</u> 01	1 1	RES MILLMAN, G	1 1
RES/DSIR/EIB	1 1		
EXTERNAL: EG&G BROWN, B	1 1	EG&G RANSOME, C	1 1
NRC PDR	1 1	NSIC	1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 19

Duke Power Company
Oconee Nuclear Generation Department
P.O. Box 1439
Seneca, SC 29679

J.W. HAMPTON
Vice President
(803)885-3499 Office
(704)373-5222 FAX



DUKE POWER

February 3, 1993

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

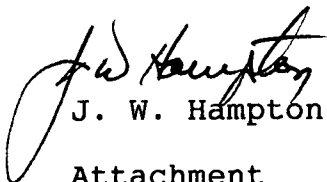
Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-269
Second Ten Year Inservice Inspection Interval
Request for Relief No. 93-01

Pursuant to 10CFR50, 50.55a, please find the subject Request for Relief from ASME Section XI, 1980 Edition through the Winter 1980 Addenda. This relief is needed due to the impracticality of meeting the code requirements concerning required examination coverage for Ultrasonic Examination on two items on the Unit 1 Reactor Vessel identified in the request.

Code Case N-460 states, in part, " When the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%." We have reviewed this Code Case and find it's applicability to Oconee to be acceptable. This code Case has been referenced in the Oconee Inservice Inspection Plan. The attached request identifies the two items examined during the Unit 1 EOC 14 refueling outage which did not meet the less than 10% criteria given in Code Case N-460.

Please review and approve this request prior to the completion of Oconee's Second Ten-Year Inservice Inspection Interval, ending on February 28, 1994.

Very truly yours,


J. W. Hampton

Attachment

12-106

9302140220 930203
PDR ADOCK 05000269
Q PDR

Printed on recycled paper

AD 7-11

U. S. Nuclear Regulatory Commission
Page 2

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

Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

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

Mr. Heyward G. Shealy
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

DUKE POWER COMPANY
Request for Relief From
Inservice Inspection Requirement

Station: Oconee

Unit: 1

Requesting Department: Nuclear Generation Department

Reference Code: ASME Boiler and Pressure Vessel Code, Section XI 1980 Edition
through Winter 1980 Addenda

I. Component for which exemption is requested:

- a. Name and Identification Number: See Attachment 1
- b. Function: See Attachment 1
- c. ASME Section XI Code Class: 1
- d. Construction Code and Class (If Applicable): ASME Section III Class
1
- e. Valve Category (If Applicable): NA

II. Reference Code Requirement that has been determined to be impractical:

See Attachment 1

III. Basis for Requesting Relief:

The Construction Permit for Oconee was issued on November 6, 1967. 10 CFR 50.55a(g) allows for plants whose Construction Permit was issued prior to January 1, 1971 to meet the requirements of ASME Section XI to the extent practical within the limitations of design, geometry and materials of construction of the components.

Due to part geometry and actual physical barriers, obtaining examination coverage on at least 90% of the weld volume as required by ASME Section XI, 1980 Edition as modified by Code Case N-460 was not possible.

Taking credit for the design requirements specified in Chapter 3 of Oconee's Final Safety Analysis Report, the Reactor Coolant System is designed and constructed so as to have an exceedingly low probability of a gross rupture or significant leakage throughout its design life. Additionally, the reactor containment building is designed to sustain the initial effects of gross equipment failure. Technical Specification 3.1.6 limits the amount of acceptable leakage in the reactor building. Specifically, Technical Specification 3.1.6.2 limits unidentified reactor coolant leakage to 1 gallon per minute, if that value is exceeded, then the reactor shall be shutdown within 24 hours of detection.

All of the welds contained in this request are located within the reactor building. The reactor building is designed to contain any leakage, so if these were to fail any release would be contained within the reactor building. Section 15.14 of the FSAR addresses the loss of coolant accident and documents that any releases that would occur due to this type of accident are within the limits of 10 CFR 100.

The welds identified in this request have been examined from the ID by use of angle beam transducers during the 10 year reactor vessel examination by automated ultrasonic equipment (ARIS II). No reportable indications were identified with this examination.

Based on the above evaluations, not meeting the requirements of ASME Section XI while performing these examinations will not endanger the health and safety of the general public. No additional examinations are required.

IV. Alternate Examination:

Use of radiography as an alternate volumetric examination method is not possible on pressure vessel welds, due to the impracticality of using double wall technique, no location to place film, etc.).

Ultrasonic examinations will continued to be performed to the maximum extent possible during future inservice inspections.

V. Implementation Schedule:

Refueling Outage 14 (current outage December 1992).

Evaluated By:	<u>R. Rouse</u>	Date:	<u>1/27/93</u>
Engineering Review:	^{KR} <u>Basil W. Carney</u>	Date:	<u>2/3/93</u>
NDE Level III Review:	<u>James J. Mc Ardle</u>	Date:	<u>1/27/93</u>
Reviewed By:	<u>G. Carlson</u>	Date:	<u>1/27/93</u>

ASME Class 1 and 2 Components NDE Inservice Inspection Request For Relief
For Oconee Unit 1 Based On ASME Section XI - 1980 Code Through Winter 1980 Addenda

Serial No. 93-1
Attachment 1
Page 1 of 1

Item No.	Exam Category /Figure No.	System Or Component	Function	Area To Be Examined	Reason For Request ¹	Licensee Proposed Alternate Examination
B01.030.001B	B-A IWB2500-4	Reactor Vessel	Contains the fission process	Flange to Shell	Limited scan due to location of holes in Reactor Vessel Flange. Actual coverage = 55.8%	None
B06.040.001A	B-G-1 IWB-2500-12	Reactor Vessel	Contains the fission process	Threads in Reactor Vessel Flange	Limited scan due to part geometry and location of holes to clad area. Actual coverage obtained = 84.5%.	None

¹ See Attachment 2 for specific information on each individual Item Number. The information shown here is for a quick overview of the limitations.

Station OCONEE NUCLEAR STATION Unit 1 Sheet 1 Of 2

Subject LIMITED EXAM DATA FOR THE RPV FLANGE TO SHELL WELD

Item # B01.030.001B By Bill Date 1-26-93
Checked By DJ Moss Date 1-26-93

SUMMATION

90% OR GREATER COVERAGE

YES ☐ NO ☒

ACTUAL COVERAGE 55.8%

INSPECTION AREA=3340.5 sq. in.

AREA NOT COVERED= 1477.5sq. in.

$$\frac{1477.5}{3340.5} \times 100 = 44.2 \%$$

ONLY 0° SCAN REQUIRED

AREA NOT
SCANNED NOTCH A
= 159.95 IN²

AREA NOT SCANNED
NOTCH B = 163.05 IN²

SURFACE 2 ← SURFACE 1

$$\text{AREA OF CIRCLE} = \pi R^2$$

$$\text{I.D. AREA} = \pi (84.2^2) \\ = 22272.8 \text{ IN}^2$$

$$\text{O.D. AREA} = \pi (96^2) \\ = 28952.9 \text{ IN}^2$$

$$\text{AREA OF WELD} = 28952.9 \\ (0^\circ - 360^\circ) - 22272.8 \\ \hline 6680.1$$

$$\text{AREA OF } \frac{1}{2} \text{ OF WELD} \\ (180^\circ - 360^\circ) = 2 \sqrt{6680.1} \\ = 3340.1 \text{ IN}^2$$

AREA NOT INSPECTED

$$= \text{NOTCH A} + \text{NOTCH B} + 30 \text{ HOLES} \\ = 159.95 + 163.05 + 1154.5 \\ = 1477.5 \text{ IN}^2$$

AREA OF
INTEREST

$$\frac{1477.5}{3340.5} \times 100 = 44.2\%$$

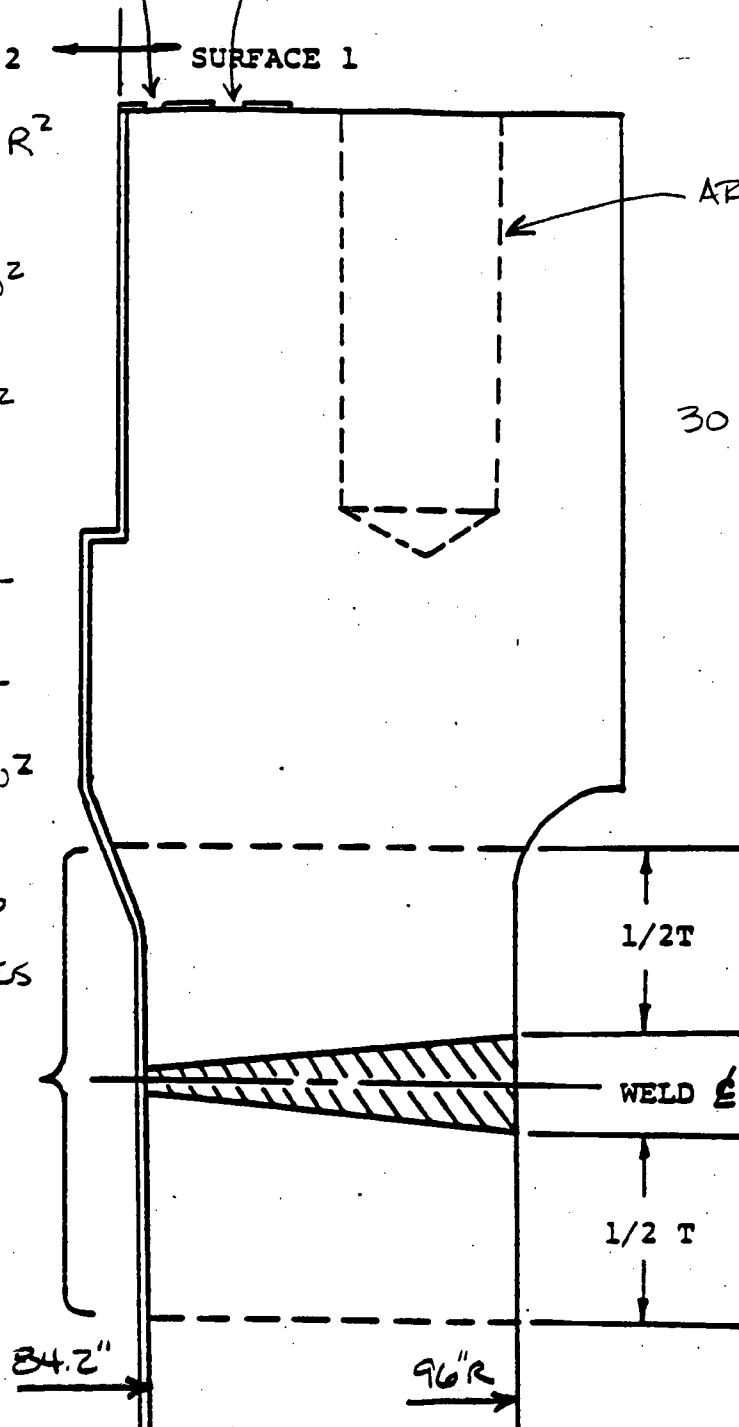
$$100\% - 44.2\% =$$

55.8%

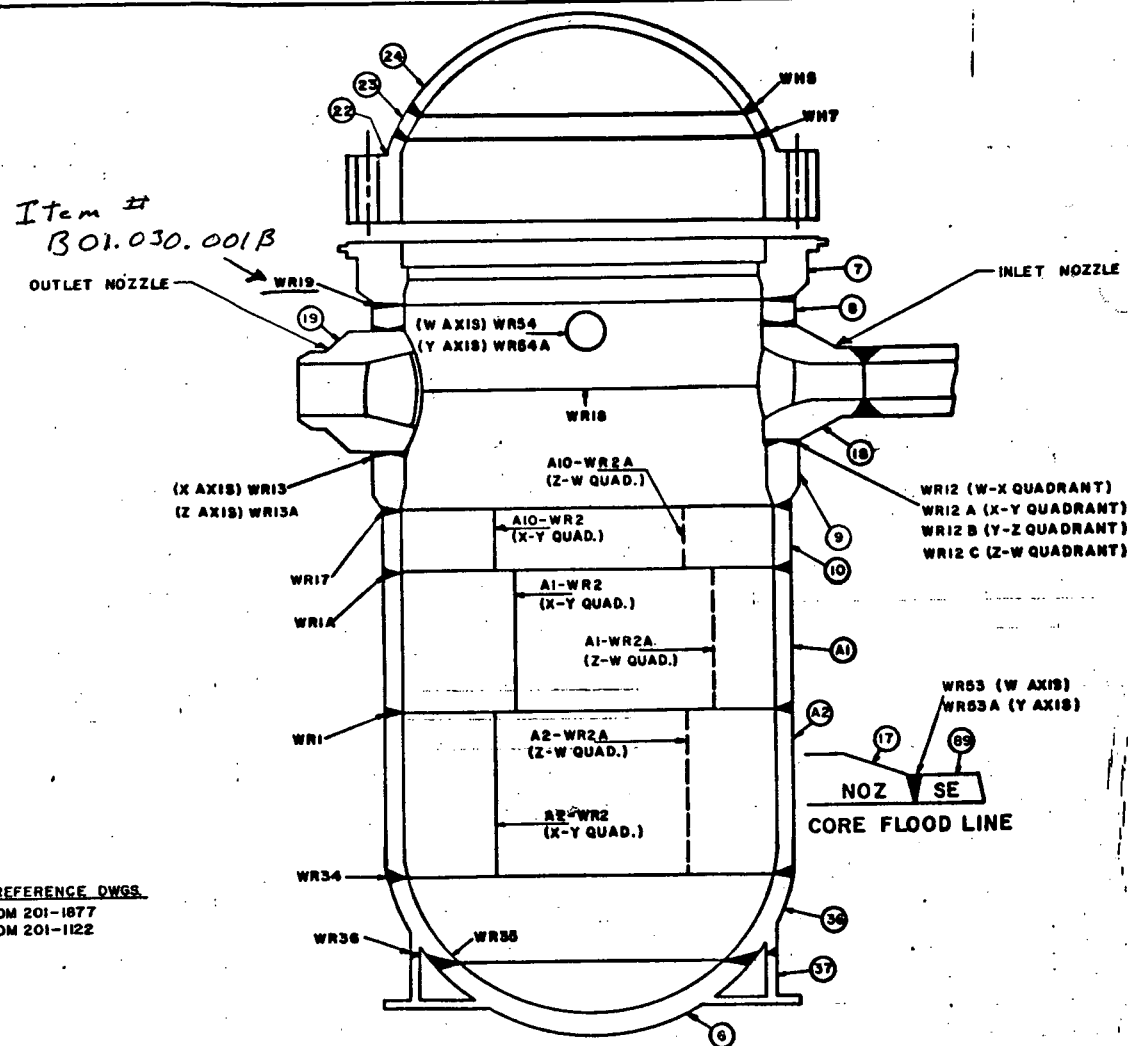
AREA INSPECTED

$$\text{AREA OF HOLE} \\ = \pi (3.5^2) \\ = 38.48 \text{ IN}^2$$

$$30 \text{ HOLES} = 38.48 \times 30 \\ = 1154.5 \text{ IN}^2$$



OCONEE FLANGE-TO-SHELL WELD

[illegible]

NOTES:

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

1	Add. Ref. Dwg.	AW5	AJH	10B	TITLE REACTOR VESSEL WELD OUTLINE
		1/25/81	7-23-81	7-23-81	
0	ORIGINAL	AW5	FMH	CRC	
		4/25/81	7/2-81	7/2-81	
NO.	REVISION	DRWN	RVWD	APPD	DWG NO.
		DATE	DATE	DATE	ISI-OCNI-001
					REV. 1

Station OCONEE NUCLEAR STATION Unit 1 Sheet 1 Of 2

Subject LIMITED EXAM DATA FOR THE RPV LIGAMENT AREA

Item # B06.040.001A By JSB Date 1-26-93
Checked By JSJ Date 1-26-93

SUMMATION

90% OR GREATER COVERAGE

YES ☐ NO ☒

ACTUAL COVERAGE 84.5%

INSPECTION AREA= 25.2 sq. in.

AREA NOT COVERED= 3.9 sq. in.

$\frac{3.9}{25.2} \times 100 = 15.5\%$

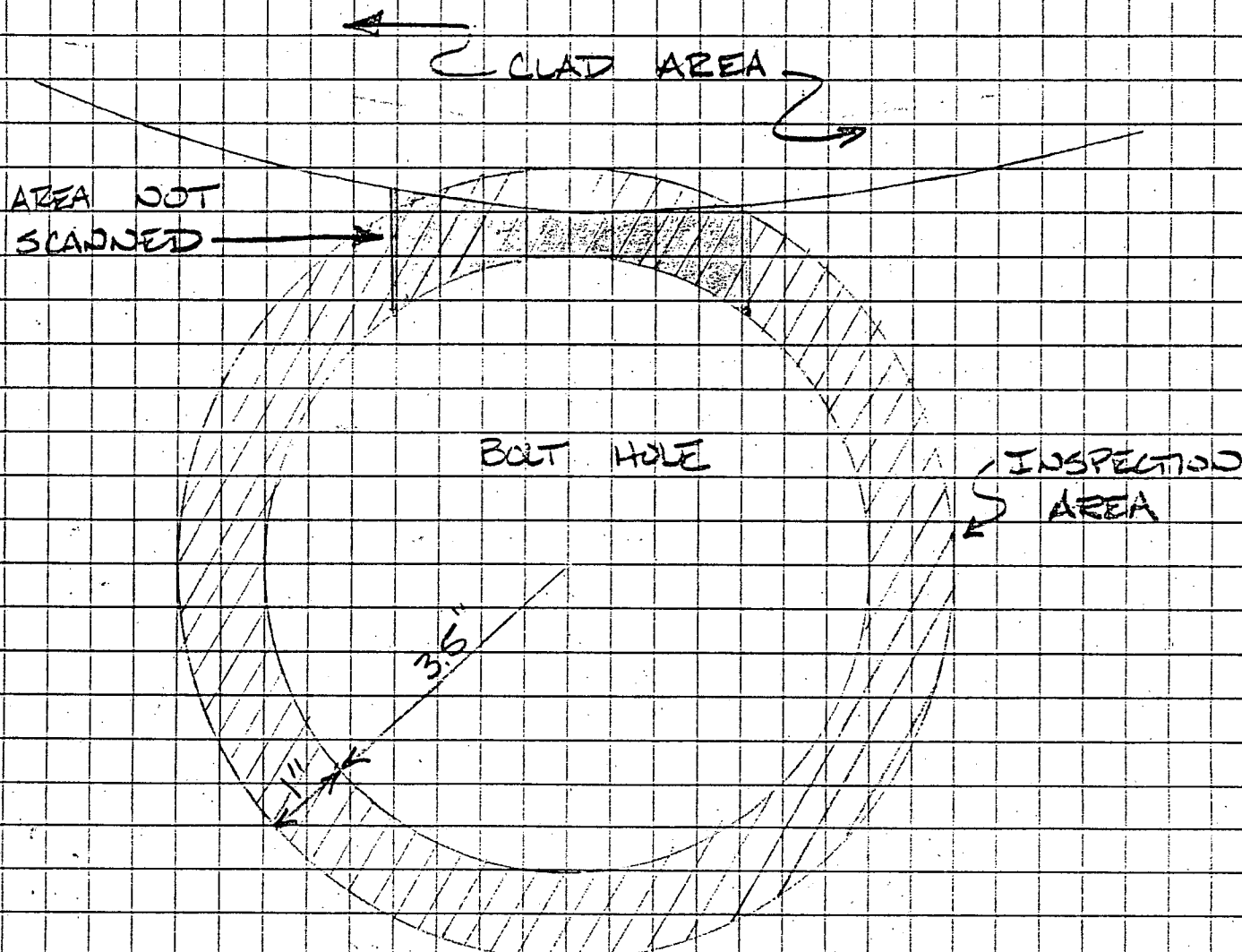
ONLY 0° SCAN REQUIRED

DW
3/1/93

2 of 2

Station OLONEE Unit 1 Rev. _____ File No. _____ Sheet 3 Of 3
 Subject 1 RPV - LIGAMENTS
 ITEM # B06.040.001A By [Signature] Date 12/14/92
 Prob No. _____ Checked By [Signature] Date 12-15-92

ATTACHMENT TO
B06.040.001A



$$\begin{aligned} \text{INSPECTION AREA} &= \pi(4.5^2) - \pi(3.5^2) \\ &= 63.6 - 38.4 \\ &= 25.2 \text{ in}^2 \end{aligned}$$

$$\% \text{ AREA NOT INSP.} = \frac{3.9}{25.2} = 15.5\%$$

$$\text{AREA INSP.} = 100 - 15.5$$

$$= 84.5\%$$

$$\text{AREA NOT INSP.} = 2.1 + 1.6 + 1.2 = 3.9 \text{ in}^2$$

$$.5 \times 4.2 = 2.1 \text{ in}^2$$

$$A = \frac{1}{2}(2) \times .6 = .6$$

$$.6 \times 2 = 1.2$$

$$A = \frac{1}{2}(2) \times .3 = .3$$

$$.3 \times 2 = .6$$

SUBJECT: ULTRASONIC EXAMINATION OF REACTOR VESSEL
FLANGE TO SHELL WELD FROM FLANGE
TOP SURFACE

Procedure No.
ISI-187, Rev. 0
PQ NO.: PQ-187-1

Figure 1. Flange Layout

- NOTE: (1) Measurements shall be recorded from the radial lines at the indication distance from surface 2. The stud hole numbers shall be used for position reference.
- (2) Clad and unclad area to be scanned with straight beam. Unclad area to be scanned with angel beam to characterize straight beam indications recorded under clad.

