

December 18, 1986

J O Barbour  
C B Cheezem  
R J Brackett  
T E Smith  
P F Guill (To Licensing File)  
P F Guill (To NRC Region 2)

Re: Errata to Inservice Inspection  
Report Unit 2 Oconee 1986  
Refueling Outage 8

Please correct the subject report as follows:

Section 3, Page No. 6, Item Number B05.050.012:

Drawing Numbers column

ISI-OCN2-006                      was ISI-OCN2-015

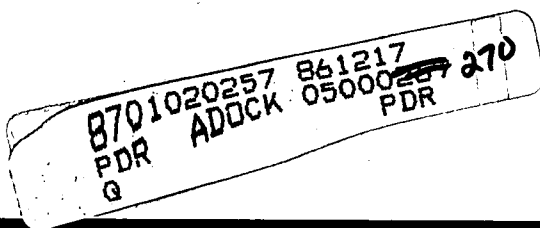
Material Type

IN/CS                              was IN/SS

*A J Hogge, Jr.*

A J Hogge, Jr  
QA Specialist  
Manuals & Reports

AJHjr/cec



**As required by the Provisions of the ASME Code Rules**

## 7. Components Inspected

[illegible]

**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 06-05-85 to 10-15-86 9. Inspection Interval from 04-01-84 to 04-01-94
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.
11. Abstract of Conditions Noted. See Attached Report
12. Abstract of Corrective Measures Recommended and Taken. See Attached Report

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 December 11 19 86 signed Duke Power By [Signature]  
Owner

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

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 NORTH CAROLINA and employed by THE NORTHERN FORM of HARTFORD Conn. have inspected the components described in this Owners' Data Report during the period 06-05-85 to 10-15-86 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 DECEMBER 12 19 86

Rayford L. Elgin  
Inspector's Signature

Commissions NC 828  
National Board, State, Province and No.

INSERVICE INSPECTION REPORT  
UNIT 2 OCONEE 1986 REFUELING  
OUTAGE 8

Location: Oconee County, South Carolina  
NRC Docket No. 50-270  
Commercial Service Date: September 9, 1974

Owner: Duke Power Company  
422 S. Church St.  
Charlotte, N. C. 28242

Revision 0

Prepared By: A. J. Hogg, Jr. Date 12-11-86  
Reviewed By: B. Che... Date 12-11-86  
Approved By: for Barlow Date 12/11/86

Copy No. 5

Assigned To P. F. Guitt (NRC REGION 2)

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Uncontrolled \_\_\_\_\_

CONTROLLED DISTRIBUTION

<u>Copy No.</u>	<u>Assigned To</u>
Original	J. O. Barbour
1	C. B. Cheezem
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5	P. F. Guill (to NRC Region 2)

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## 1.0 Summary of Inservice Inspection

This report describes the Inservice Inspection of Duke Power Company's Oconee Nuclear Station Unit 2 during the 1986 Refueling Outage (also referred to as Outage 8).

Included in this report are the final inservice inspection plan, the inspection results for each item, a summary for each category of examination, certification data for all personnel, material and equipment, and corrective action taken when unacceptable conditions were found. In addition, there is a section included for repairs and replacements required since June 5, 1985.

### 1.1 Class 1 Inspections

The Class 1 Inservice Inspection included examinations on the Reactor Vessel (National Board No. N-105), Pressurizer (National Board No. N-106), Letdown Cooler 2A, Primary Coolant, Pressurizer Surge and Core Flood System Piping. In addition, Reactor Coolant Pumps 2A1 and 2B2 flange surfaces, valves 2CF-13, 2CF-14 and 2LP-45 bolting and control rod drive bolts and nut rings were examined.

Visual examinations were performed on the Class 1 pressure boundary during inservice leakage tests. Also, visual examinations were performed on Class 1 component supports of the Reactor Coolant, High Pressure Injection and Low Pressure Injection Systems.

The Inconel 600 tubing in Steam Generators 2A and 2B was inspected by eddy current during Outage 8. The results of the inspections are shown in Section 5 of this report.

Reportable indications were found on the Class 1 inspections shown on the following pages. Inspection and evaluation data for each reportable indication found on Class 1 items is included in Section 5 of this report.

A detailed description of each inspection is found in the final ISI Plan in Section 3 of this report. Results of each examination are found in Section 4.

### 1.2 Class 2 Inspections

The Class 2 Inspections included examinations of the Steam Generator 2A Nozzle to Shell Weld, Core Flood Tank 2A Support Attachment Weld and Steam Generators 2A and 2B Feedwater Header Support and Restraint Attachment Welds. Also included were piping integrally welded attachments of the Main Steam, Main Feedwater, and Reactor Building Spray Systems. In addition, circumferential butt welds in the Main Steam, Auxiliary Feedwater, Low Pressure Injection, Core Flood, and Reactor Building Spray Systems were inspected.

Visual examinations were performed on the Class 2 pressure boundary during system functional tests. Also, visual examinations were per-

formed on Class 2 component supports of the Main Steam, Main Feedwater, High Pressure Injection, Low Pressure Injection, Reactor Building Spray, Component Cooling and Spent Fuel Cooling Systems. Also, visual examinations were performed on component supports of Steam Generators 2A and 2B Feedwater Headers.

A detailed description of each inspection is found in the final Inservice Inspection Plan in Section 3 of this report. Results of each examination are found in Section 4.

### 1.3 Augmented Inspections

Augmented inspections of Oconee 2 consisted of Reactor Coolant Pump Flywheel examinations, High Pressure Injection Nozzle and Makeup Nozzle Safe-end examinations, and Core Flood Tank 2A Dump Valve to Head and Core Flood Tank 2A Support Attachment Welds.

Results of each augmented examination are found in Section 7 of this report.

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCN UNIT 2

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
MASTER REFERENCE LISTING

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12/05/86

SELECTION CRITERIA FOR THIS REPORT IS AS FOLLOWS:

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PLANT CARD =	P	OCN 2					
INSPECTION CARD =	I		8		REP		0000000
TITLE CARD =	T	OCONEE 2 CLASS 1 REPORTABLE ITEMS	OUTAGE 8				
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PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
 QUALITY ASSURANCE DEPARTMENT  
 PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
 OCONEE 2 CLASS 1 REPORTABLE ITEMS OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ. NUMBER	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B08.010.000	REACTOR VESSEL	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	***** *****
B08.010.001	2RPV-HD-LUG-A	GM-1201-455	MT	NDE-25	CS	--.-0	5.625	-----	REACTOR CLOSURE HEAD LUG AT Y-AXIS
B08.020.000	***PRESSURIZER	INTEGRALLY WELDED*** ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	***** *****
B08.020.006	2PZR-WP82-ZM	ISI-6CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG Z-W AXIS
B08.020.008	2PZR-WP82-WX	ISI-6CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG W-X AXIS
B08.030.000	STEAM GEN.	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 6 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B08 \*\*\*

## 2.0 Status of Required Inspections

The completion status of inspections required by the 1980 ASME Code Section XI, including addenda through Winter 1980, is summarized in this section. The requirements are listed by the ASME Section XI examination category as defined in Table IWB-2500-1 for Class 1 inspections and in IWC-2500-1 for Class 2 inspections. Augmented inspections are also included.

### Class 1 Inspections

<u>Section XI Category</u>	<u>Description</u>	<u>Inspections Required</u>	<u>Inspections Completed</u>	<u>Percentage Completed</u>	<u>Deferral Allowed</u>
B-A	Pressure Retaining Welds in Reactor Vessel	8 Welds	.66 Weld	8.25%	Yes
B-B	Pressure Retaining Welds in Vessels Other Than Reactor Vessels	15 Welds	3 Welds	20%	No
B-D	Full Penetration Welds of Nozzles in Vessels	30 Welds	9 Welds	30%	Partial
B-E	Partial Penetration Welds in Vessels	31 Welds	6 Welds	18% Credited	No
B-F	Pressure Retaining Dissimilar Metal Welds	39 Welds	8 Welds	20.51%	No
B-G-1	Pressure Retaining Bolting Greater Than 2 Inch Diameter	553 Items	93	16.81%	Yes
B-G-2	Pressure Retaining Bolting 2 Inches and Less in Diameter	* 35 Connec- tions	9 Connec- tions	25.71%	Yes
B-H	Integral Attachments for Vessels	12 Welds	3 Welds	25%	No
B-J	Pressure Retaining Welds in Piping	88 Welds	15 Welds	17.04%	No

\* Total connections include CRDMs that are disassembled

Section XI Category	Description	Inspections Required	Inspections Completed	Percentage Completed	Deferral Allowed
B-K-1	Integral Attachments for Piping, Pumps and Valves	None	N/A	N/A	N/A
B-L-1	Pressure Retaining Welds in Pump Casings	1 Weld	0	0%	Yes
B-L-2	Pump Casings	1 Casing	0	0%	Yes
B-M-1	Pressure Retaining Welds in Valve Bodies	None	N/A	N/A	N/A
B-M-2	Valve Bodies > 4 Inches Nominal Pipe Size	2 Valves	1	34% Credited	Yes
B-N-1	Interior of Reactor Vessel	3	1	33.33%	No
B-N-2	Integrally Welded Core Support Structure and Interior Attach- ments to Reactor Vessel	None	N/A	N/A	N/A
B-N-3	Removal Core Support Structures	1 Item	0	0%	Yes
B-O	Pressure Retaining Welds in Control Rod Housing	3 Welds	1	33.33%	Yes
B-P	All Pressure Retaining Components	140	38	27.14%	Yes
B-Q	Steam Generator Tubing	(100% Station Technical Specifications Met)			N/A
F1.01	Class 1 Component Supports	84 Supports	19	22.62%	No

<u>Section XI Category</u>	<u>Description</u>	<u>Inspections Required</u>	<u>Inspections Completed</u>	<u>Percentage Completed</u>	<u>Deferral Allowed</u>
B-L-1	Pressure Retaining Welds in Pump Casings	1 Weld	0	0%	Yes
B-L-2	Pump Casings	1 Casing	0	0%	Yes
B-M-1	Pressure Retaining Welds in Valve Bodies	None	N/A	N/A	N/A
B-M-2	Valve Bodies > 4 Inches Nominal Pipe Size	2 Valves	1	34% Credited	Yes
B-N-1	Interior of Reactor Vessel	3	1	33.33%	No
B-N-2	Integrally Welded Core Support Structure and Interior Attach- ments to Reactor Vessel	None	N/A	N/A	N/A
B-N-3	Removal Core Support Structures	1 Item	0	0%	Yes
B-O	Pressure Retaining Welds in Control Rod Housing	3 Welds	1	33.33%	Yes
B-P	All Pressure Retaining Components	140	38	27.14%	Yes
B-Q	Steam Generator Tubing	(100% Station Technical Specifications Met)			N/A
F1.01	Class 1 Component Supports	84 Supports	19	22.62%	No

# Class 2 Inspections

<u>Section XI Category</u>	<u>Description</u>	<u>Inspections Required</u>	<u>Inspections Completed</u>	<u>Percentage Completed</u>	<u>Deferral Allowed</u>
C-A	Pressure Retaining Welds in Pressure Vessel	10 Welds	2 Welds	20%	No
C-B	Pressure Retaining Nozzle Welds in Vessels	5 Welds	3 Welds	34% Credited	No
C-C	Integral Attachments for Vessels, Piping, Pumps and Valves	60	11	18.33%	No
C-D	Pressure Retaining Bolting Exceeding 2 Inches in Diameter	None	N/A	N/A	N/A
C-F	Pressure Retaining Welds in Piping	267 Welds	70	26.22%	No
C-G	Pressure Retaining Welds in Pumps and Valves	None	N/A	N/A	N/A
C-H	All Pressure Retaining Components	87	16	18.39%	No
F1.02	Class 2 Component Supports	419 Supports	96	22.91%	No

## Augmented Inspections

<u>Description</u>	<u>Percentage Complete</u>
Reactor Coolant Pump Flywheel:	33.33%
(1) Volumetric inspection of bore and keyway in place	
(2) Surface inspection of flywheel when removed	
(3) Volumetric inspection of flywheel when removed	
High Pressure Injection and Makeup Nozzle Safe-ends	50%
Core Flood Tank 2A Dump Valve Flange to Head Weld	100%
Core Flood Tank 2A Support Attachment Weld	100%

### 3.0 Final Inservice Inspection Plan for Outage 8

The final ISI Plan presented in this section lists all examinations credited for Outage 8 at Oconee Unit 2. This includes ASME Section XI Classes 1, 2 and augmented inspections required by the plant technical specifications.

PROGRAM: RUND7179-QAISI02  
FILE: C007133  
PLANT: OCN UNIT 2

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
MASTER REFERENCE LISTING

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SELECTION CRITERIA FOR THIS REPORT IS AS FOLLOWS:

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PLANT CARD =	P	OCN 2						0000000
INSPECTION CARD =	I		8					
TITLE CARD =	T	OCONEE 2	INSERVICE	INSPECTION	LISTING	OUTAGE	8	
	1	2	3	4	5	6	7	
	123456789012345678901234567890123456789012345678901234567890							

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B01.000.000	REACTOR VESSEL	WELDS***** *****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.010.000	REACTOR VESSEL	SHELL WELDS***** *****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.011.000	REACTOR VESSEL	CIRCUMFERENTIAL***** SHELL WELDS*****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.012.000	REACTOR VESSEL	LONGITUDINAL***** SHELL WELDS*****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.020.000	REACTOR VESSEL	HEAD WELDS***** *****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.021.000	REACTOR VESSEL	HEAD WELDS***** CIRCUMFERENTIAL*****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.022.000	REACTOR VESSEL	HEAD WELDS***** MERIDIONAL*****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.030.000	REACTOR VESSEL	SHELL TO FLANGE WELD *****	***	*****	*****	--.-0	--.--0	*****	***** *****
B01.040.000	REACTOR VESSEL	HEAD TO FLANGE WELDS *****	***	*****	*****	--.-0	--.--0	*****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 9 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B01 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B02.000.000	***PRESSURIZER	AND STEAM GENERATOR VESSEL WELDS*****	***	*****	*****	--.-0	--.--0	*****	*****
B02.010.000	***PRESSURIZER	SHELL TO HEAD WELDS *****	***	*****	*****	--.-0	--.--0	*****	*****
B02.011.000	***PRESSURIZER	SHELL TO HEAD WELDS CIRCUMFERENTIAL*****	***	*****	*****	--.-0	--.--0	*****	*****
B02.011.006	2PZR-WP28	ISI-OCN2-002 -----	UT	ISI-130	CS	--.-0	4.750	40394	LOWER HEAD TO HEATER BUNDLE PC 4/40 TO 6 PTS.3-5 AND 6-8
B02.012.000	***PRESSURIZER	WELDS***** LONGITUDINAL*****	***	*****	*****	--.-0	--.--0	*****	*****
B02.040.000	*****STEAM	GENERATORS TUBESHEET TO HEAD WELDS*****	***	*****	*****	--.-0	--.--0	*****	*****
B02.050.000	HEAT EXCHANGER	SHELL OR HEAD WELDS* *****	***	*****	*****	--.-0	--.--0	*****	*****
B02.060.000	HEAT EXCHANGER	TUBESHEET TO SHELL** WELDS*****	***	*****	*****	--.-0	--.--0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 8 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B02 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
 QUALITY ASSURANCE DEPARTMENT  
 PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
 OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B03.090.000	REACTOR VESSEL	NOZZLE TO VESSEL**** WELDS*****	---	-----	----	--.0	---.0	----	***** *****
B03.100.000	REACTOR VESSEL	NOZZLE INSIDE***** RADIUS SECTION*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.110.000	***PRESSURIZER	NOZZLE TO VESSEL**** WELDS*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.120.000	***PRESSURIZER	NOZZLE INSIDE RADIUS SECTION*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.130.000	*****STEAM	GENERATOR NOZZLE TO VESSEL WELDS*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.140.000	*****STEAM	GENERATOR NOZZLE INSIDE RADIUS*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.150.000	HEAT EXCHANGER	NOZZLE TO VESSEL WELDS*****	***	*****	*****	--.0	---.0	*****	***** *****
B03.150.001	2-44773-4I-V1	OM-201-2933 -----	UT	ISI-120	SS	4.00	0.688	40411	LETDOWN COOLER A INLET NOZZLE TO CHANNEL PC 5 TO 3
B03.160.000	HEAT EXCHANGER	NOZZLE INSIDE RADIUS SECTION	---	-----	----	--.0	---.0	----	-----
B03.160.001	2-44773-4I-V1	OM-201-2933 -----	UT	ISI-120	SS	4.00	0.688	40411	LETDOWN COOLER A INLET NOZZLE TO CHANNEL PC 5 TO 3

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 10 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B03 \*\*\*

PROGRAM: RUMB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B04.010.000	REACTOR VESSEL	PARTIAL PENETRATION* WELDS*****	***	*****	*****	--,-0	--,-0	*****	*****
B04.012.000	*****PARTIAL	PENETRATION***** CRD NOZZLES*****	***	*****	*****	--,-0	--,-0	*****	*****
B04.013.000	*****PARTIAL	PENETRATION***** INSTRUMENTATION*****	***	*****	*****	--,-0	--,-0	*****	*****
B04.020.000	***PRESSURIZER	HEATER PENETRATION** WELDS*****	***	*****	*****	--,-0	--,-0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 4 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B04 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
 QUALITY ASSURANCE DEPARTMENT  
 PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
 OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B05.010.000	REACTOR VESSEL	NOZZLE TO SAFE END** BUTT WELDS*****	***	*****	*****	---.0	---.0	*****	NOMINAL PIPE SIZE > 4 INCH***** *****
B05.020.000	***PRESSURIZER	NOZZLE TO SAFE END** BUTT WELDS*****	***	*****	*****	---.0	---.0	*****	NOMINAL PIPE SIZE > 4 INCH***** *****
B05.020.001	2PZR-WP23	ISI-OCN2-002 -----	UT	ISI-120	CS/SS	10.90	1.300	40414	PRESSURIZER SURGE LINE NOZ SE UT FROM NOZZLE SIDE
B05.020.001A	2PZR-WP23	ISI-OCN2-002 -----	UT	ISI-120	CS/SS	10.90	1.300	40354	PRESSURIZER SURGE LINE NOZ SE UT FROM SAFE END SIDE
B05.020.001B	2PZR-WP23	ISI-OCN2-002 -----	PT	NDE-35	CS/SS	10.90	1.300	-----	PRESSURIZER SURGE LINE NOZ SE AT PRESSURIZER PC 8 TO 37
B05.030.000	*****STEAM	GENERATOR NOZZLE TO SAFE END BUTT WELDS*	***	*****	*****	---.0	---.0	*****	NOMINAL PIPE SIZE > 4 INCH***** *****
B05.050.000	CLASS 1 PIPING	DISSIMILAR METAL*** BUTT WELDS*****	***	*****	*****	---.0	---.0	*****	NOMINAL PIPE SIZE 4 IN. & OVER *****
B05.050.007	2PIB2-7	ISI-OCN2-010 -----	UT	ISI-120	CS/SS	33.50	3.000	40350	B2 SUCTION PUMP SAFE END TO PIPE UT FROM PIPE SIDE
B05.050.007A	2PIB2-7	ISI-OCN2-010 -----	UT	ISI-120	CS/SS	33.50	3.000	40397	B2 SUCTION PUMP SAFE END TO PIPE UT FROM SE SIDE
B05.050.007B	2PIB2-7	ISI-OCN2-010 -----	PT	NDE-35	CS/SS	33.50	3.000	-----	B2 SUCTION PUMP SAFE END TO PIPE PC 55 TO 56
B05.050.009	2PSL-10	ISI-OCN2-015 -----	UT	ISI-120	CS/SS	11.50	0.900	40414	B HOT LEG SURGE LINE NOZ.SE UT FROM THE NOZ. SIDE
B05.050.009A	2PSL-10	ISI-OCN2-015 -----	UT	ISI-120	CS/SS	11.50	0.900	40399	B HOT LEG SURGE LINE NOZ.SE UT FROM THE PIPE SIDE
B05.050.009B	2PSL-10	ISI-OCN2-015 -----	PT	NDE-35	CS/SS	11.50	0.900	-----	B HOT LEG SURGE LINE NOZ.SE PC. 25 TO PC.85
B05.050.012	2PHB-17	ISI-OCN2-006 -----	UT	ISI-120	IN/CS	11.50	0.900	40414	INSP. PERFORMED WITH 2PSL-10 B-HOT LEG NOZ. SE
B05.051.000	CLASS 1 PIPING	DISSIMILAR METAL BUTT WELDS	---	-----	-----	---.0	---.0	-----	NOMINAL PIPE SIZE < 4 INCHES -----
B05.051.009	2PIB2-11	ISI-OCN2-010 -----	PT	NDE-35	CS/SS	3.50	0.816	-----	B2 SUCTION DRAIN NOZZLE SAFE END PC 64 TO 65

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
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OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B05.051.010	2PIB2-12	ISI-OCN2-010 -----	PT	NDE-35	CS/SS	3.50 2.250	-----	B2 SUCTION RTE NOZ SE ON 2B2 SUCTION PC 58 TO 56

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 17 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B05 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B06.010.000	REACTOR VESSEL	CLOSURE HEAD NUTS*** *****	***	*****	*****	--.-0	--.--0	*****	*****
B06.020.000	REACTOR VESSEL	CLOSURE STUDS***** EXAMINED IN PLACE***	***	*****	*****	--.-0	--.--0	*****	WILL EXAMINE WHEN REMOVED***** SEE CATEGORY B06.030*****
B06.030.000	REACTOR VESSEL	CLOSURE STUDS***** *****	***	*****	*****	--.-0	--.--0	*****	WHEN REMOVED*****
B06.040.000	REACTOR VESSEL	THREADS IN FLANGE*** *****	***	*****	*****	--.-0	--.--0	*****	*****
B06.050.000	REACTOR VESSEL	CLOSURE WASHERS AND* BUSHINGS*****	***	*****	*****	--.-0	--.--0	*****	*****
B06.060.000	***PRESSURIZER	BOLTING***** *****	***	*****	*****	--.-0	--.--0	-----	*****
B06.070.000	***PRESSURIZER	FLANGE SURFACES***** *****	***	*****	*****	--.-0	--.--0	*****	*****
B06.080.000	***PRESSURIZER	NUTS, BUSHINGS, AND WASHERS*****	***	*****	*****	--.-0	--.--0	*****	*****
B06.180.000	*CLASS 1 PUMPS	BOLTS AND STUDS***** *****	***	*****	*****	--.-0	--.--0	*****	GREATER THAN 2 INCH*****
B06.190.000	*CLASS 1 PUMPS	FLANGE SURFACE***** *****	***	*****	*****	--.-0	--.--0	*****	WHEN CONNECTION DISASSEMBLED** *****
B06.190.001	2RCP-A1-FLANGE	OM-201D-34 -----	VT1	QCL-13	SS	--.-0	--.--0	-----	1" AREA SURROUNDING EACH STUD HOLE
B06.190.004	2RCP-B2-FLANGE	OM-201D-34 -----	VT1	QCL-13	SS	--.-0	--.--0	-----	1" AREA SURROUNDING EACH STUD HOLE
B06.200.000	*CLASS 1 PUMPS	NUTS, BUSHINGS, AND WASHERS*****	***	*****	*****	--.-0	--.--0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 13 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B06 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B07.020.000	***PRESSURIZER	BOLTS,STUDS,AND NUTS *****	***	*****	*****	--,-0	--,-0	*****	*****
B07.020.001	2PZR-UHB-STUDS	B&W 149775E -----	VT1	QCL-13	CS	2.00	17.000	-----	16 STUDS UPPER HEATER BUNDLE -----
B07.030.000	*****STEAM	GENERATOR***** BOLTS,STUDS,AND NUTS	***	*****	*****	--,-0	--,-0	*****	*****
B07.050.000	CLASS 1 PIPING	BOLTS,STUDS,AND NUTS *****	***	*****	*****	--,-0	--,-0	*****	*****
B07.060.000	*CLASS 1 PUMPS	BOLTS,STUDS,AND NUTS *****	***	*****	*****	--,-0	--,-0	*****	*****
B07.070.000	CLASS 1 VALVES	BOLTS,STUDS,AND NUTS *****	***	*****	*****	--,-0	--,-0	*****	*****
B07.070.003	2-53A-CF13	OM-245-001 -----	VT1	QCL-13	CS	--,-0	--,-0	-----	CORE FLOOD B -----
B07.070.004	2-53A-CF14	OM-245-001 -----	VT1	QCL-13	CS	--,-0	--,-0	-----	CORE FLOOD B -----
B07.070.016	2-53A-LP45	OM-246-024 -----	VT1	QCL-13	-----	1.50	--,-0	-----	AUX.PRESSURIZER SPRAY LINE, VLV. LP-45 BOLTING
B07.080.000	**CRD HOUSINGS	BOLTS,STUDS,AND NUTS *****	***	*****	*****	--,-0	--,-0	*****	INSPECT ONLY IF HOUSING IS**** DISASSEMBLED*****
B07.080.001	2RPV-CRD-BOLTS	----- -----	VT1	QCL-13	CS	--,-0	--,-0	-----	8 BOLTS PER HOUSING -----
B07.080.002	2RPV-CRD-RINGS	----- -----	VT1	QCL-13	CS	--,-0	--,-0	-----	1 PAIR PER HOUSING -----

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 12 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B07 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
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OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B08.010.000	REACTOR VESSEL	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	*****
B08.010.001	2RPV-HD-LUG-A	OM-1201-455	MT	NDE-25	CS	--.-0	5.625	-----	REACTOR CLOSURE HEAD LUG AT Y-AXIS
B08.010.002	2RPV-HD-LUG-B	OM-1201-455	MT	NDE-25	CS	--.-0	5.625	-----	REACTOR CLOSURE HEAD LUG BETWEEN W-X AXIS
B08.010.003	2RPV-HD-LUG-C	OM-1201-455	MT	NDE-25	CS	--.-0	5.625	-----	REACTOR CLOSURE HEAD LUG BETWEEN W-Z AXIS
B08.020.000	***PRESSURIZER	INTEGRALLY WELDED*** ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	*****
B08.020.001	2PZR-WP82-X	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG X-AXIS
B08.020.002	2PZR-WP82-XY	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG X-Y AXIS
B08.020.003	2PZR-WP82-Y	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG Y AXIS
B08.020.004	2PZR-WP82-YZ	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG Y-Z AXIS
B08.020.005	2PZR-WP82-Z	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG Z AXIS
B08.020.006	2PZR-WP82-ZW	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG Z-W AXIS
B08.020.007	2PZR-WP82-W	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG W AXIS
B08.020.008	2PZR-WP82-WX	ISI-0CN2-002	MT	NDE-25	CS	--.-0	3.500	-----	PZR SUPPORT LUG W-X AXIS
B08.030.000	STEAM GEN.	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 14 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B08 \*\*\*

PROGRAM: RUN#7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B09.010.000	CLASS 1 PIPING	NOMINAL PIPE SIZE*** 4 INCH AND GREATER**	***	*****	*****	---0	---0	*****	*****
B09.011.000	*****	CIRCUMFERENTIAL***** HELDS*****	***	*****	*****	---0	---0	*****	*****
B09.011.045	2PIB2-3	ISI-0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC 45 TO 63
B09.011.045A	2PIB2-3	ISI-0CN2-010	MT	NDE-25	CS	33.50	3.000	-----	B2 SUCTION CIRCLE SEAM PC 45 TO PC 63
B09.011.046	2PIB2-4	ISI-0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC 63 TO 62
B09.011.046A	2PIB2-4	ISI-0CN2-010	MT	NDE-25	CS	33.50	3.000	-----	B2 SUCTION CIRCLE SEAM PC 63 TO PC 62
B09.011.102	2PSL-8	ISI-0CN2-015	UT	ISI-120	SS	10.00	1.000	40399	PC 84 TO 84 SELECTION CRITERIA 4.2.2
B09.011.102A	2PSL-8	ISI-0CN2-015	PT	NDE-35	SS	10.00	1.000	-----	PC 84 TO 84 SELECTION CRITERIA 4.2.2
B09.011.103	2PSL-9	ISI-0CN2-015	UT	ISI-120	SS	10.00	1.000	40399	PC 80 TO 85 SELECTION CRITERIA 4.2.2
B09.011.103A	2PSL-9	ISI-0CN2-015	PT	NDE-35	SS	10.00	1.000	-----	PC 80 TO 85 SELECTION CRITERIA 4.2.2
B09.011.152	2-53A-8.2-50	SYS 53A ISO 8 P2	UT	ISI-120	SS	14.00	1.250	40389	CORE FLOOD A
B09.011.152A	2-53A-8.2-50	SYS 53A ISO 8 P2	PT	NDE-35	SS	14.00	1.250	-----	CORE FLOOD A
B09.011.153	2-53A-8.2-48	SYS 53A ISO 8 P2	UT	ISI-120	SS	14.00	1.250	40389	CORE FLOOD A
B09.011.153A	2-53A-8.2-48	SYS 53A ISO 8 P2	PT	NDE-35	SS	14.00	1.250	-----	CORE FLOOD A
B09.011.154	2-53A-8.2-43	SYS 53A ISO 8 P2	UT	ISI-120	SS	14.00	1.250	40389	CORE FLOOD A
B09.011.154A	2-53A-8.2-43	SYS 53A ISO 8 P2	PT	NDE-35	SS	14.00	1.250	-----	CORE FLOOD A

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B09.011.155	2-53A-8.2-60	SYS 53A ISO 8 P2	UT	ISI-120	SS	14.00	1.250	40389	CORE FLOOD A
B09.011.155A	2-53A-8.2-60	SYS 53A ISO 8 P2	PT	NDE-35	SS	14.00	1.250	----	CORE FLOOD A
B09.011.156	2-53A-8.1-01	SYS 53A ISO 8 P1	UT	ISI-120	SS	10.00	1.000	40399	CORE FLOOD A
B09.011.156A	2-53A-8.1-01	SYS 53A ISO 8 P1	PT	NDE-35	SS	10.00	1.000	----	CORE FLOOD A
B09.011.157	2-53A-8.1-05	SYS 53A ISO 8 P1	UT	ISI-120	SS	10.00	1.000	40399	CORE FLOOD A
B09.011.157A	2-53A-8.1-05	SYS 53A ISO 8 P1	PT	NDE-35	SS	10.00	1.000	----	CORE FLOOD A
B09.011.158	2-53A-8.1-12	SYS 53A ISO 8 P1	UT	ISI-120	SS	10.00	1.000	40399	CORE FLOOD A
B09.011.158A	2-53A-8.1-12	SYS 53A ISO 8 P1	PT	NDE-35	SS	10.00	1.000	----	CORE FLOOD A
B09.011.159	2-53A-8.1-15	SYS 53A ISO 8 P1	UT	ISI-120	SS	10.00	1.000	40399	CORE FLOOD A
B09.011.159A	2-53A-8.1-15	SYS 53A ISO 8 P1	PT	NDE-35	SS	10.00	1.000	----	CORE FLOOD A
B09.012.000	*****	LONGITUDINAL***** WELDS*****	***	*****	*****	---0	---0	*****	***** *****
B09.012.031	2PIB2-62LI	ISI-0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC62RT062L
B09.012.031A	2PIB2-62LI	ISI-0CN2-010	MT	NDE-25	CS	33.50	3.000	----	B2 SUCTION INSIDE LONG SEAM PC 62R TO 62L
B09.012.032	2PIB2-62L0	ISI-0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC 62L TO 62R
B09.012.032A	2PIB2-62L0	ISI 0CN2-010	MT	NDE-25	CS	33.50	3.000	----	B2 SUCTION OUTSIDE LONG SEAM PC 62L TO 62R
B09.012.033	2PIB2-45LI	ISI 0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC 45R TO 45L

PROGRAM: RUNB7179-QAISI02  
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 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B09.012.033A	2PIB2-45LI	ISI 0CN2-010	MT	NDE-25	CS	33.50	3.000	-----	B2 SUCTION INSIDE LONG SEAM PC 45R TO 45L
B09.012.034	2PIB2-45LO	ISI 0CN2-010	UT	ISI-182	CS	33.50	3.000	40350	REQUEST FOR RELIEF ONS-003 PC 45L TO 45R
B09.012.034A	2PIB2-45LO	ISI 0CN2-010	MT	NDE-25	CS	33.50	3.000	-----	B2 SUCTION OUTSIDE LONG SEAM PC 45L TO 45R
B09.020.000	CLASS 1 PIPING	NOMINAL PIPE SIZE*** < 4 INCH*****	***	*****	*****	--.-0	--.-0	*****	*****
B09.021.000	*****	CIRCUMFERENTIAL***** WELDS*****	***	*****	*****	--.-0	--.-0	*****	*****
B09.030.000	CLASS 1 PIPING	BRANCH PIPE***** CONNECTION WELDS****	***	*****	*****	--.-0	--.-0	*****	*****
B09.031.000	**NOMINAL PIPE	SIZE 4 INCHES AND GREATER	***	*****	*****	--.-0	--.-0	*****	*****
B09.032.000	**NOMINAL PIPE	SIZE LESS THAN 4 INCHES	***	*****	*****	--.-0	--.-0	*****	*****
B09.040.000	**SOCKET WELDS	*****	***	*****	*****	--.-0	--.-0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 41 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B09 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: CCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B10.010.000	CLASS 1 PIPING	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.-0	*****	***** ***** *****
B10.020.000	PUMPS	INTEGRALLY WELDED ATTACHMENTS	---	-----	-----	--.-0	--.-0	----	----- ----- -----

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 2 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B10 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B12.010.000	CLASS 1 PUMPS	CASING WELDS***** *****	***	*****	****	--,-0 --,-0	****	***** *****
B12.020.000	CLASS 1 PUMP	CASINGS***** *****	***	*****	****	--,-0 --,-0	****	***** *****
B12.040.000	CLASS 1 VALVE	BODIES EXCEEDING**** 4 INCH NPS*****	***	*****	****	--,-0 --,-0	****	INSPECT IF VALVE IS DISASSEMBLED

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 3 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B12 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B13.010.000	REACTOR VESSEL	VESSEL INTERIOR***** *****	***	*****	*****	--.-0	----	***** *****
B13.030.000	REACTOR VESSEL	CORE SUPPORT***** STRUCTURE*****	***	*****	*****	--.-0	----	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 2 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B13 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B14.010.000	REACTOR VESSEL	CRD HOUSING WELDS*** *****	***	*****	*****	--.-0	----	***** INSPECT THREE HOUSINGS WHEN REMOVED
B14.010.003	2RPV-CRD-60WH9	B&W 128720E14 OM-201-2186	PT	NDE-35	SS/IN	4.06	0.650	----- PERIPHERAL CRDM HOUSING BODY MK-67 TO MK-55
B14.010.006	2RPV-CRD-60W60	B&W 128720E14 DPS 706599-1056	PT	NDE-35	CS/SS	5.00	0.500	----- CRDM BASE TO MOTOR TUBE -----
B14.010.009	2RPV-CRD-60	B&W 128720E14 DPS 706599-1056	PT	NDE-35	CS/SS	4.30	0.400	----- CRDM MOTOR TUBE TO EXTENSION -----
B14.010.012	2RPV-CRD-60W61	B&W 128720E14 DPS 706599-1056	PT	NDE-35	SS	4.19	0.380	----- PERIPHERAL CRDM EXTENSION TO CAP

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 5 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B14 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B15.010.000	REACTOR VESSEL	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	--,-0	--,-0	*****	*****
B15.010.001	2RPV-LK TEST	ØFD-100A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	RPV SYS LEAK TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.011.000	REACTOR VESSEL	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	--,-0	--,-0	*****	*****
B15.020.000	***PRESSURIZER	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	--,-0	--,-0	*****	*****
B15.020.001	2PZR-LK TEST	ØFD-100A-2.2 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	PZR SYS LEAK TEST ALTEXAM QCL-15 VT2 MAY BE USED
B15.021.000	***PRESSURIZER	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	--,-0	--,-0	*****	*****
B15.030.000	*****STEAM	GENERATORS PRESSURE* RETAINING BOUNDARY**	***	*****	*****	--,-0	--,-0	*****	*****
B15.030.001	2SGA-LK TEST	ØFD-100A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	SGA SYS LEAK TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.030.002	2SGB-LK TEST	ØFD-100A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	SGB SYS LEAK TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.031.000	*****STEAM	GENERATORS PRESSURE* RETAINING BOUNDARY**	***	*****	*****	--,-0	--,-0	*****	*****
B15.040.001	2LDC2A-LK TEST	ØFD-101A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	LETDOWN COOLER 2A SYS LK TEST ALT EXAM QCL15 VT2 MAY BE USED
B15.040.002	2LDC2B-LK TEST	ØFD-101A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	LETDOWN COOLER 2B SYS LK TEST ALT EXAM QCL15 VT2 MAY BE USED
B15.050.000	CLASS 1 PIPING	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	--,-0	--,-0	*****	*****
B15.050.001	2-ØFD-100A-2.1	ØFD-100A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.001A	2-ØFD-100A-2.2	ØFD-100A-2.2 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.002	2-ØFD-101A-2.1	ØFD-101A-2.1 -----	VIS	ISI-350	-----	--,-0	--,-0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
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 OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B15.050.003	2-0FD-101A-2.4	0FD-101A-2.4	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.004	2-0FD-102A-2.1	0FD-102A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.005	2-0FD-102A-2.2	0FD-102A-2.2	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.006	2-0FD-102A-2.3	0FD-102A-2.3	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.007	2-0FD-110A-2.1	0FD-110A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.008	2-0FD-127B-2.2	0FD-127B-2.2	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.050.009	2-0FD-100A-2.3	0FD-100A-2.3	VIS	ISI-350	-----	---.0	---.0	-----	CLASS 1 SYS LEAKAGE TEST ALT EXAM QCL-15 VT2 MAY BE USED
B15.051.000	CLASS 1 PIPING	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	---.0	---.0	*****	***** *****
B15.060.000	*CLASS 1 PUMPS	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	---.0	---.0	*****	***** *****
B15.060.001	2-RCP-2A1	0FD-100A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	RCP 2A1 SYS LEAKAGE TEST ALT ALT EXAM QCL15 VT2 MAY BE USED
B15.060.002	2-RCP-2A2	0FD-100A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	RCP 2A2 SYS LEAKAGE TEST ALT ALT EXAM QCL15 VT2 MAY BE USED
B15.060.003	2-RCP-2B1	0FD-100A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	RCP 2B1 SYS LEAKAGE TEST ALT ALT EXAM QCL15 VT2 MAY BE USED
B15.060.004	2-RCP-2B2	0FD-100A-2.1	VIS	ISI-350	-----	---.0	---.0	-----	RCP 2B2 SYS LEAKAGE TEST ALT ALT EXAM QCL15 VT2 MAY BE USED
B15.061.000	*CLASS 1 PUMPS	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	---.0	---.0	*****	***** *****
B15.070.000	CLASS 1 VALVES	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	---.0	---.0	*****	COVERED IN B15.050.000 *****
B15.071.000	CLASS 1 VALVES	PRESSURE RETAINING** BOUNDARY*****	***	*****	*****	---.0	---.0	*****	COVERED IN B15.051.000 *****

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
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\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 32 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH B15 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C807133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
B16.011.001	2SGA-TUBES	-----	ET	ISI-418	INC0	0.62 0.040	49013	STEAM GEN. A TUBES
B16.011.002	2SGB-TUBES	-----	ET	ISI-418	INC0	0.62 0.040	49065	STEAM GEN. B TUBES
B16.020.000	*****STEAM	GENERATOR TUBING**** *****	***	*****	*****	--,-0 --,-0	*****	***** *****
B16.021.000	*****	*****STEAM GENERATOR TUBING****	***	*****	*****	--,-0 --,-0	*****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 4 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH B16 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C01.000.000	*****CLASS 2	PRESSURE RETAINING** WELDS IN VESSELS****	***	*****	*****	--.-0	--.-0	*****	*****
C01.010.000	*****SHELL	CIRCUMFERENTIAL***** WELDS*****	***	*****	*****	--.-0	--.-0	*****	*****
C01.010.003	2SGA-MG8-3	GM-1201-450 ISI-OCN2-003	UT	ISI-130	CS	--.-0	4.188	40394	GEN A NOZ BELT TO SHELL PC 3 TO 2
C01.020.000	*****HEAD	CIRCUMFERENTIAL***** WELDS*****	***	*****	*****	--.-0	--.-0	*****	*****
C01.030.000	*****CLASS 2	TUBESHEET TO SHELL WELDS*****	***	*****	*****	--.-0	--.-0	*****	*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 5 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH C01 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C02.000.000	*****PRESSURE	RETAINING NOZZLE**** WELDS IN VESSELS****	***	*****	****	--.-0 --.-0	****	***** *****
C02.010.000	*****NOZZLES	IN VESSELS***** *****	***	*****	****	--.-0 --.-0	****	1/2" NOMINAL THICKNESS AND**** LESS*****
C02.021.000	*****NOZZLE	TO SHELL OR HEAD**** WELDS*****	***	*****	****	--.-0 --.-0	****	***** *****
C02.022.000	*****NOZZLE	INSIDE RADIUS***** SECTION*****	***	*****	****	--.-0 --.-0	****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 4 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH C02 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C03.000.000	*****CLASS 2	INTEGRAL ATTACHMENTS *****	***	*****	*****	--.-0	--.--0	****	*****
C03.010.000	*****PRESSURE	VESSELS INTEGRALLY** WELDED ATTACHMENTS**	***	*****	*****	--.-0	--.--0	****	*****
C03.010.017	2-CFTA-WT18-X	B&M 148732E -----	MT	NDE-25	CS	--.-0	2.000	-----	CORE FLD TK SUPPORT ATTACH. X QUADRANT PC 18 TO 12
C03.010.027	2SGB-WG84-ZW	OM-201-1054 -----	MT	NDE-25	CS	--.-0	1.000	-----	SGB FDWTR.HDR.S/R ATTACH. Z-W QUAD.NEAR Z-AXIS
C03.010.031	2SGA-WG84-XY	OM-201-1054 -----	MT	NDE-25	CS	--.-0	1.000	-----	SGA FDWTR.HDR.S/R ATTACH. X-Y QUAD.NEAR X-AXIS
C03.040.000	CLASS 2 PIPING	INTEGRALLY WELDED ATTACHMENTS*****	***	*****	*****	--.-0	--.--0	****	*****
C03.040.001	2-01A-H5	0-1401B -----	MT	NDE-25	CS	--.-0	--.--0	-----	MAIN STEAM - SPRING 2-01A-0-1401B-H5
C03.040.031	2-03-H15A	0-1481A -----	MT	NDE-25	CS	--.-0	--.--0	-----	MAIN FDWTR - SPRING 2-03A-0-1481A-H15A
C03.040.071	2-54B-H4A	0-1477 -----	PT	NDE-35	SS	--.-0	--.--0	-----	REACTOR BLDG SPRAY-SPRING 2-54B-0-1477-H4A
C03.040.087	2-03-GEN.2A-7	OM-201-1054 -----	MT	NDE-25	CS	--.-0	1.000	-----	SGA FDWTR.HDR.S/R ATTACH. X-Y QUAD.NEAR X-AXIS
C03.040.095	2-03-GEN.2B-7	OM-201-1054 -----	MT	NDE-25	CS	--.-0	1.000	-----	SGA FDWTR.HDR.S/R ATTACH. Z-W QUAD.NEAR Z-AXIS

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 11 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH C03 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C04.000.000	*****PRESSURE	RETAINING BOLTING*** > 2 INCH IN DIAMETER	***	*****	*****	--,-0	--,-0	*****	***** *****
C04.010.000	*****	PRESSURE VESSELS**** BOLTS AND STUDS*****	***	*****	*****	--,-0	--,-0	*****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 2 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH C04 \*\*\*

PROGRAM: RUMB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C05.000.000	*****PRESSURE	RETAINING WELDS IN** PIPING*****	***	*****	*****	--.-0	---.-0	*****	***** *****
C05.010.000	CLASS 2 PIPING	1/2" AND LESS***** NOMINAL WALL THICK.*	***	*****	*****	--.-0	---.-0	*****	***** *****
C05.011.000	*****	CIRCUMFERENTIAL WELD *****	***	*****	*****	--.-0	---.-0	*****	***** *****
C05.011.012	2-53B-17.3-44	SYS 53B ISO 17 PT 3	PT	NDE-35	SS	14.00	0.250	-----	TERMINAL END
C05.011.013	2-53B-17.3-118	SYS 53B ISO 17 PT 3	PT	NDE-35	SS	14.00	0.250	-----	SELECTION CRITERIA 5.2
C05.011.014	2-53B-17.3-39	SYS 53B ISO 17 PT 3	PT	NDE-35	SS	14.00	0.250	-----	-----
C05.011.015	2-53B-17.3-37	SYS 53B ISO 17 PT 3	PT	NDE-35	SS	14.00	0.250	-----	SELECTION CRITERIA 5.2
C05.011.029	2-53B-18.3-65	SYS 53B ISO 18 PT 3	PT	NDE-35	SS	12.00	0.180	-----	TERMINAL END
C05.011.030	2-53B-18.3-63A	SYS 53B ISO 18 PT 3	PT	NDE-35	SS	14.00	0.250	-----	-----
C05.011.031	2-53B-18.3-60B	SYS 53B ISO 18 PT 3	PT	NDE-35	SS	14.00	0.250	-----	-----
C05.011.032	2-53B-18.3-55	SYS 53B ISO 18 PT 3	PT	NDE-35	SS	14.00	0.250	-----	-----
C05.011.046	2-53B-19.3-19	SYS 53B ISO 19 PT 3	PT	NDE-35	SS	10.00	0.250	-----	-----
C05.011.047	2-53B-19.3-1	SYS 53B ISO 19 PT 3	PT	NDE-35	SS	8.00	0.250	-----	TERMINAL END
C05.011.063	2-53B-26.1-31	SYS 53B ISO 26 PT 1	PT	NDE-35	SS	10.00	0.250	-----	-----
C05.011.064	2-53B-26.1-58	SYS 53B ISO 26 PT 1	PT	NDE-35	SS	8.00	0.250	-----	-----
C05.011.065	2-53B-26.1-35A	SYS 53B ISO 26 PT 1	PT	NDE-35	SS	10.00	0.250	-----	-----

PROGRAM: RUMB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C05.011.066	2-53B-26.2-41B	SYS 53B ISO 26 PT 2	PT	NDE-35	SS	10.00	0.250	-----	TERMINAL END
C05.011.112	2-53B-17.2-81	SYS-53B ISO-17.2	PT	NDE-35	SS	14.00	0.250	-----	
C05.011.113	2-53B-18.1-47	SYS-53B ISO-18.1	PT	NDE-35	SS	14.00	0.250	-----	
C05.011.202	2-53A-8.2-40	SYS 53A ISO 8 P2	PT	NDE-35	SS	14.00	0.375	-----	TERMINAL END
C05.011.204	2-CFTA-WJ217	B&M 142825E	PT	NDE-35	CS/SS	14.00	0.375	-----	CORE FLOOD TANK 2A OUTLET NOZZLE TO SAFE END PC 6 TO 9
C05.011.335	2-54A-8.3-52	SYS 54B ISO 8.3	PT	NDE-35	SS	8.00	0.250	-----	
C05.011.336	2-54A-8.3-47	SYS 54B ISO 8.3	PT	NDE-35	SS	8.00	0.250	-----	
C05.011.337	2-54A-8.3-55	SYS 54B ISO 8.3	PT	NDE-35	SS	8.00	0.250	-----	
C05.011.340	2-54A-8.3-71	SYS 54B ISO 8.3	PT	NDE-35	SS	8.00	0.250	-----	
C05.011.341	2-54A-8.3-75	SYS 54B ISO 8.3	PT	NDE-35	SS	8.00	0.250	-----	
C05.011.561	2-03A-24-WG106	SYS 01A ISO 24 OM 1201-1475	MT	NDE-25	CS	6.67	0.432	-----	
C05.011.562	2-03A-25-WG106	SYS 01A ISO 25 OM 1201-1475	MT	NDE-25	CS	6.67	0.432	-----	
C05.011.570	2-01A-15-07	SYS 01A ISO 15	MT	NDE-25	CS	6.00	0.432	-----	SELECTION CRITERIA 5.2
C05.012.000	*****	LONGITUDINAL WELD*** *****	***	*****	*****	---,0	---,0	*****	*****
C05.020.000	CLASS 2 PIPING	> 1/2" NOMINAL***** THICKNESS*****	***	*****	*****	---,0	---,0	*****	*****
C05.021.000	*****	CIRCUMFERENTIAL***** WELDS*****	***	*****	*****	---,0	---,0	*****	*****

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C05.021.108	2-01A-MS10A-A	SYS 01A ISO 5 PT 1 GRINN SUB ASSY MS10A	RT	NDE-12	CS	36.00	1.164	----	-----
C05.021.108A	2-01A-MS10A-A	SYS 01A ISO 5 PT 1 GRINN SUB ASSY MS10A	MT	NDE-25	CS	36.00	1.164	----	-----
C05.021.109	2-01A-4.1-21	SYS 01A ISO 4 PT 1	RT	NDE-12	CS	36.00	1.164	----	-----
C05.021.109A	2-01A-4.1-21	SYS 01A ISO 4 PT 1	MT	NDE-25	CS	36.00	1.164	----	-----
C05.021.110	2-01A-MS21A-A	SYS 01A ISO 4.3 GRINN SUB ASSY MS21A	RT	NDE-12	CS	24.00	0.969	----	-----
C05.021.110A	2-01A-MS21A-A	SYS 01A ISO 4.3 GRINN SUB ASSY MS21A	MT	NDE-25	CS	24.00	0.969	----	-----
C05.021.111	2-01A-4.3-13	SYS 01A ISO 4 PT 3	RT	NDE-12	CS	24.00	0.969	----	-----
C05.021.111A	2-01A-4.3-13	SYS 01A ISO 4 PT 3	MT	NDE-25	CS	24.00	0.969	----	-----
C05.021.123	2-01A-MS7B-B	SYS 01A ISO 5 PT 4 GRINN SUB ASSY MS7B	RT	NDE-12	CS	26.00	0.875	----	-----
C05.021.123A	2-01A-MS7B-B	SYS 01A ISO 5 PT 4 GRINN SUB ASSY MS7B	MT	NDE-25	CS	26.00	0.875	----	-----
C05.031.000	CLASS 2 PIPING	BRANCH CONNECTION WELDS*****	***	*****	*****	--.0	--.0	*****	*****
C05.031.252	2-53B-17.3-119	SYS 53B ISO 17 PT 3	PT	NDE-35	SS	8.00	0.250	----	SELECTION CRITERIA 5.2

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 44 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH C05 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C07.010.000	*****PRESSURE	VESSELS***** *****	***	*****	*****	---.0	---.0	*****	PRESSURE RETAINING COMPONENTS* *****
C07.010.001	2LPCA	0FD-102A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	LP COOL A SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.010.002	2LPCB	0FD-102A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	LP COOL B SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.011.000	*****PRESSURE	VESSELS***** *****	***	*****	*****	---.0	---.0	*****	PRESSURE RETAINING COMPONENTS* *****
C07.020.000	*****PIPING	***** *****	***	*****	*****	---.0	---.0	*****	PRESSURE RETAINING COMPONENTS* *****
C07.020.001	2-0FD-102A-2.1	0FD-102A-2.1 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYSLEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.002	2-0FD-102A-2.2	0FD-102A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYSLEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.004	2-0FD-103A-2.1	0FD-103A-2.1 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYS LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.005	2-0FD-101A-2.2	0FD-101A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYS LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.006	2-0FD-101A-2.4	0FD-101A-2.4 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYS LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.007	2-0FD-101A-2.3	0FD-101A-2.3 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYS LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.020.008	2-0FD-101A-2.5	0FD-101A-2.5 -----	VT2	QCL-15	-----	---.0	---.0	-----	CL B SYS LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
C07.021.000	*****PIPING	***** *****	***	*****	*****	---.0	---.0	*****	PRESSURE RETAINING COMPONENTS* *****
C07.030.000	*****PUMPS	***** *****	***	*****	*****	---.0	---.0	*****	PRESSURE RETAINING COMPONENTS* SYSTEM PRESSURE TEST*****
C07.030.001	2-LPI-PUMP-2A	0FD-102A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	LPI PUMP 2A SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.030.002	2-LPI-PUMP-2B	0FD-102A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	LPI PUMP 2B SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
 QUALITY ASSURANCE DEPARTMENT  
 PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
 OCONEE 2 INSERVICE INSPECTION LISTING OUTAGE 8

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
C07.030.003	2-LPI-PUMP-2C	0FD-102A-2.2	VT2	QCL-15	----	---.0	----	LPI PUMP 2C SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.030.004	2-HPI-PUMP-2C	0FD-101A-2.3	VT2	QCL-15	----	---.0	----	HPI PUMP 2C SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.030.006	2-RBS-PUMP-2A	0FD-103A-2.1	VT2	QCL-15	----	---.0	----	RBS PUMP 2A SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.030.007	2-RBS-PUMP-2B	0FD-103A-2.1	VT2	QCL-15	----	---.0	----	RBS PUMP 2B SYS LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.030.008	2-SSF-2P-1	0FD-101A-2.5	VT2	QCL-15	----	---.0	----	SSF-SP-1 PUMP LEAK TEST ALT EXAM ISI-350 MAY BE USED
C07.031.000	*****PUMPS	*****	***	*****	----	---.0	*****	PRESSURE RETAINING COMPONENTS* SYSTEM HYDRO TEST*****
C07.040.000	*****VALVES	*****	***	*****	----	---.0	*****	PRESSURE RETAINING COMPONENTS* *****
C07.041.000	*****VALVES	*****	***	*****	----	---.0	*****	PRESSURE RETAINING COMPONENTS* COVERED IN C07.021.000

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 24 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH C07 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
D01.010.000	*****PRESSURE	RETAINING COMPONENTS *****	***	*****	*****	--,-0	--,-0	*****	EXAMINATION CATEGORY D-A***** *****
D01.011.000	*****SYSTEM	INSERVICE TEST***** *****	***	*****	*****	--,-0	--,-0	*****	***** *****
D01.011.001	2-0FD-100A-2.1	0FD-100A-2.1 -----	VT2	QCL-15	-----	--,-0	--,-0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D01.011.005	2-0FD-101A-2.4	0FD-101A-2.4 -----	VT2	QCL-15	-----	--,-0	--,-0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D01.011.008	2-0FD-109A-1.1	0FD-109A-1.1 -----	VT2	QCL-15	-----	--,-0	--,-0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D01.011.009	2-0FD-110A-2.1	0FD-110A-2.1 -----	VT2	QCL-15	-----	--,-0	--,-0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D01.012.000	*****SYSTEM	HYDROSTATIC TEST***** *****	***	*****	*****	--,-0	--,-0	*****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 7 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH D01 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
D02.010.000	*****PRESSURE	RETAINING COMPONENTS *****	***	*****	*****	---.0	---.0	*****	EXAMINATION CATEGORY D-B***** *****
D02.011.000	*****SYSTEM	FUNCTIONAL***** TEST*****	***	*****	*****	---.0	---.0	*****	***** *****
D02.011.001A	2-0FD-110A-2.3	0FD-110A-2.3 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT. EXAM ISI-350 VT MAY BE USED
D02.011.002	2-0FD-116B-2.1	0FD-116B-2.1 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAKAGE TEST -----
D02.011.007	2-0FD-121D-2.1	0FD-121D-2.1 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D02.011.008	2-0FD-121D-1.2	0FD-121D-1.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D02.011.009	2-0FD-122A-2.4	0FD-122A-2.4 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D02.011.015	2-0FD-133A-2.2	0FD-133A-2.2 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT EXAM ISI-350 VT MAY BE USED
D02.011.016	2-0FD-133A-2.1	0FD-133A-2.1 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT. EXAM ISI-350 VT MAY BE USED
D02.011.017	2-0FD-133A-2.3	0FD-133A-2.3 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT. EXAM ISI-350 VT MAY BE USED
D02.011.018	2-0FD-133A-2.5	0FD-133A-2.5 -----	VT2	QCL-15	-----	---.0	---.0	-----	CLASS 3 SYSTEM LEAK TEST ALT. EXAM ISI-350 VT MAY BE USED
D02.012.000	*****SYSTEM	HYDROSTATIC***** TEST*****	***	*****	*****	---.0	---.0	*****	***** *****
D02.020.000	*****INTEGRAL	ATTACHMENTS***** *****	***	*****	*****	---.0	---.0	*****	*****COMPONENTS SUPPORTS AND RESTRAINTS*****
D02.020.001	2-01A-R20	0-1403D -----	VT3	QCL-14	-----	---.0	---.0	-----	STM SUPPLY EFWP - S/R'S 2-01A-4-0-1403D-R20
D02.020.002	2-01A-R23	0-1403D -----	VT3	QCL-14	-----	---.0	---.0	-----	STM SUPPLY EFWP - S/R'S 2-01A-4-0-1403D-R23
D02.020.013	2-03-H60	0-551 -----	VT3	QCL-14	-----	---.0	---.0	-----	MAIN FWTR - S/R'S 2-03-0-551-H60

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
D02.020.020	2-03A-1215	0-1401A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1401A-GC-1215
D02.020.021	2-03A-SR46	0-1401A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1401A-SR46
D02.020.030	2-03A-DE015	0-1401B	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1401B-DE015
D02.020.031	2-03A-SR9	0-1401B	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1401B-SR9
D02.020.041	2-03A-SR38	0-1400B	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1400B-SR38
D02.020.048	2-03A-H14	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-H14
D02.020.049	2-03A-SR12	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-SR12
D02.020.050	2-03A-H13	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-H13
D02.020.051	2-03A-SR11	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-SR11
D02.020.052	2-03A-H12	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-H12
D02.020.059	2-03A-SR8	0-1439B	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1439B-SR8
D02.020.060	2-03A-SR26	0-1400A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1400A-SR26
D02.020.061	2-03A-H28	0-1400A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1400A-H28
D02.020.062	2-03A-SR27	0-1400A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1400A-SR27
D02.020.067	2-03A-SR5	0-1444	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1444-SR5
D02.020.068	2-03A-H5	0-1437A	VT3	QCL-14	----	---.0	----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-H5

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
D02.020.069	2-03A-H3	0-1437A	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-H3
D02.020.070	2-03A-SR4	0-1437A	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR - S/R'S 2-03A-1-0-1437A-SR4
D02.020.082	2-03A-H38	0-1400B	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR - S/R'S 2-03A-1-0-1400B-H38
D02.020.086	2-03A-SR55	0-1400A	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR - S/R'S 2-03A-1-0-1400A-SR55
D02.020.088	2-03A-H95	0-1400A	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR - S/R'S 2-03A-1-0-1400A-H95
D02.020.120	2-14B-SR6	0-438C	VT3	QCL-14	-----	---.0	---.0	-----	AUX SERV. WATER COMPONENT-S/R'S 2-14B-0-438C-SR6
D02.020.124	2-03A-H24	0-1400B	VT3	QCL-14	---	---.0	---.0	-----	EMER. FDWTR. - RIGID 2-03A-1-0-1400B-H24
D02.020.125	2-03A-H23	0-1400A	VT3	QCL-14	---	---.0	---.0	-----	EMER. FDWTR. - RIGID 2-03A-1-0-1400A-H23
D02.020.132	2-03A-SR34(A)	0-1400B	VT3	QCL-14	---	---.0	---.0	-----	EMER. FDWTR. - RIGID 2-03A-1-0-1400B-SR34
D02.030.000	*****INTEGRAL	ATTACHMENTS*****	***	*****	*****	---.0	---.0	*****	MECHANICAL AND HYDRUALIC SNUBBERS*****
D02.040.000	*****INTEGRAL	ATTACHMENTS*****	***	*****	*****	---.0	---.0	*****	SPRING TYPE SUPPORTS*****
D02.040.002	2-03A-H18	0-1444	VT3	QCL-14	-----	---.0	---.0	-----	EMER. FDWTR. - SPRING 2-03A-1-0-1444-H18
D02.040.010	2-07A-H56	0-1400A	VT3	QCL-14	-----	---.0	---.0	-----	CONDENSATE SYSTEM - SPRING 2-07A-6-0-1400A-H56
D02.060.000	*****INTEGRAL	ATTACHMENTS*****	***	*****	*****	---.0	---.0	*****	SHOCK ABSORBERS*****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 46 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH D02 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
D03.010.000	*****PRESSURE	RETAINING COMPONENTS *****	***	*****	*****	--,-0	--,-0	****	EXAMINATION CATEGORY D-C***** *****
D03.011.000	*****SYSTEM	INSERVICE TEST***** *****	***	*****	*****	--,-0	--,-0	****	***** *****
D03.011.001	2-OFD-104A-1.1	OFD-104A-1.1 -----	VT2	QCL-15	-----	--,-0	--,-0	-----	CLASS 3 SYSTEM LEAK TEST ALT. EXAM ISI-350 VT MAY BE USED
D03.012.000	*****SYSTEM	HYDROSTATIC TEST**** *****	***	*****	*****	--,-0	--,-0	****	***** *****

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 4 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH D03 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
E01.001.001	2RCP-2A1	-----	UT	ISI-117	CS	72.00	9.500	-----	RC PUMP 2A1 FLYWHEEL
E01.001.002	2RCP-2A2	-----	UT	ISI-117	CS	72.00	9.500	-----	RC PUMP 2A2 FLYWHEEL
E01.001.003	2RCP-2B1	-----	UT	ISI-117	CS	72.00	9.500	-----	RC PUMP 2B1 FLYWHEEL
E01.001.004	2RCP-2B2	-----	UT	ISI-117	CS	72.00	9.500	-----	RC PUMP 2B2 FLYWHEEL

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 4 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH E01 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
E04.001.000	**HPI SAFE END	EXAMINATIONS***** *****	***	*****	*****	--.0	---.0	****	***** *****
E04.001.001	2PDA1-47	ISI-0CN2-011 -----	UT	ISI-120	SS	3.50	0.750	40343	A1 DISCHARGE MAKE UP NOZZLE SAFE END PC 47
E04.001.001A	2PDA1-47	ISI-0CN2-011 -----	RT	NDE-12	SS	3.50	0.750	-----	A1 DISCHARGE MAKE UP NOZZLE SAFE END PC 47
E04.001.002	2PDA2-47	ISI-0CN2-012 -----	UT	ISI-120	SS	3.50	0.750	40343	A2 DISCHARGE MAKE UP NOZZLE SAFE END PC 47
E04.001.002A	2PDA2-47	ISI-0CN2-012 -----	RT	NDE-12	SS	3.50	0.750	-----	A2 DISCHARGE MAKE UP NOZZLE SAFE END PC 47
E04.001.003	2PDB1-47	ISI-0CN2-013 -----	RT	NDE-12	SS	3.50	0.750	-----	B1 DISCHARGE HPI NOZZLE SAFE END PC 47
E04.001.004	2PDB2-47	ISI-0CN2-014 -----	UT	ISI-120	SS	3.50	0.750	40343	B2 DISCHARGE HPI NOZZLE SAFE END PC 47
E04.001.004A	2PDB2-47	ISI-0CN2-014 -----	RT	NDE-12	SS	3.50	0.750	-----	B2 DISCHARGE HPI NOZZLE SAFE END PC 47

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 8 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH E04 \*\*\*

PROGRAM: RUNB7179-QAISI02  
FILE: C007133  
PLANT: OCONEE UNIT 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. PROCEDURE REQ. NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
E05.001.001	2-CFTA-VLV-HD	B&W 148732E -----	UT	NES **	CS	18.18 2.562	40410	CFTA D VLV.FLG.TO HD.,PC.28 TO 10,**NES-83A0288**NES-83A3167
E05.001.003	2-CFTA-WT18-W	B&W 148732E -----	MT	NDE-25	CS	---.0 2.000	-----	CORE FLD TK SUPPORT ATTACH. M QUADRANT PC 18 TO 12

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
\*\*\* THERE WERE 2 RECORDS SELECTED \*\*\*  
\*\*\* WHOSE ITEM NUMBERS BEGIN WITH E05 \*\*\*

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: OCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
F1.01.000	*****CLASS 1	SUPPORTS***** *****	***	*****	*****	--.0	--.0	*****	***** *****
F1.01.021	2-50-H1A	0-1479A -----	VT	QCL-14	-----	10.00	--.0	-----	PRESSURIZER SURGE-H.S.S. SUPP. 2-50-0-1479A-H1A
F1.01.022	2-50-H2A	0-1479A -----	VT	QCL-14	-----	10.00	--.0	-----	PRESSURIZER SURGE-H.S.S. SUPP. 2-50-0-1479A-H2A
F1.01.023	2-50-H3A	0-1479A -----	VT	QCL-14	-----	10.00	--.0	-----	PRESSURIZER SURGE-H.S.S. SUPP. 2-50-0-1479A-H3A
F1.01.024	2-57-H0801	0-1481A -----	VT	QCL-14	-----	3.00	--.0	-----	PRESS. RELIEF VLV - SNUBBER 2-57-0-1481A-RJP-H0801
F1.01.025	2-57-H0802	0-1481A -----	VT	QCL-14	-----	3.00	--.0	-----	PRESS. RELIEF VLV - SPRING 2-57-0-1481A-CEW-H0802
F1.01.026	2-50-H6	0-1481A -----	VT	QCL-14	-----	2.50	--.0	-----	PRESS. SPRAY - SPRING 2-50-0-1481A-H6
F1.01.027	2-50-H1	0-1481A -----	VT	QCL-14	-----	2.50	--.0	-----	PRESS. SPRAY - SNUBBER 2-50-0-1481A-H1
F1.01.028	2-50-H3	0-1481A -----	VT	QCL-14	-----	2.50	--.0	-----	PRESS. SPRAY - SNUBBER 2-50-0-1481A-H3
F1.01.029	2-50-H4	0-1481A -----	VT	QCL-14	-----	2.50	--.0	-----	PRESS. SPRAY - SNUBBER 2-50-0-1481A-H4
F1.01.055	2-51A-H14A	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - Y RIGID 2-51A-0-1479A-H14A
F1.01.056	2-51A-H15A	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - Y RIGID 2-51A-0-1479A-H15A
F1.01.057	2-51A-H16A	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - Y RIGID 2-51A-0-1479A-H16A
F1.01.072	2-51A-H1A	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - SPRING 2-51A-0-1479A-H1A
F1.01.073	2-51A-H12B	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - Y RIGID 2-51A-0-1479A-H12B
F1.01.074	2-51A-H11B	0-1479A -----	VT	QCL-14	-----	2.50	--.0	-----	HPI - Y RIGID 2-51A-0-1479A-H11B

PROGRAM: RUNB7179-QAISI02  
 FILE: C007133  
 PLANT: CCONEE UNIT 2  
 KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	DRAWING NUMBERS	INSP. REQ.	PROCEDURE NUMBER	MATERIAL TYPE	DIAM. SIZE	THICKNESS (LENGTH)	CALIB. BLOCK	***** COMMENTS *****
F1.01.077	2-51A-H9B	0-1479A	VT	QCL-14	-----	2.50	---0	-----	HPI - Y RIGID 2-51A-0-1479A-H9B
F1.01.118	2-53A-H27C	0-1481A	VT	QCL-14	-----	1.50	---0	-----	PRESS. SPRAY - X RIGID 2-53A-0-1481A-H27C
F1.01.120	2-53A-H28C	0-1481A	VT	QCL-14	-----	1.50	---0	-----	PRESS. SPRAY - Y RIGID 2-53A-0-1481A-H28C
F1.01.124	2-53A-H8B	0-1479A	VT	QCL-14	-----	10.00	---0	-----	LPI - SPRING 2-53A-0-1479A-H8B
F1.02.000	*****CLASS 2	SUPPORTS***** *****	***	*****	*****	---0	---0	*****	***** *****
F1.02.001	2-01A-H1	0-1441	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - SPRING 2-01A-0-1441-H1
F1.02.002	2-01A-H2	0-1441	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - RIGID 2-01A-0-1441-H2
F1.02.003	2-01A-H3	0-1441	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - HYD. SWAY SUPP. 2-01A-0-1441-H3
F1.02.005	2-01A-H5	0-1401B	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - SPRING 2-01A-0-1401B-H5
F1.02.011	2-01A-H11	0-1441	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - SPRING 2-01A-0-1441-H11
F1.02.016	2-01A-H16	0-1441	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - RIGID 2-01A-0-1441-H16
F1.02.018	2-01A-H18	0-1401B	VT	QCL-14	-----	8.00	---0	-----	MAIN STEAM - VAR. SPRING 2-01A-0-1401B-H18
F1.02.019	2-01A-H19	0-1401B	VT	QCL-14	-----	36.50	---0	-----	MAIN STEAM - SPRING 2-01A-1-4-0-1401B-H19
F1.02.041	2-01A-DE060	0-1441	VT	QCL-14	-----	35.00	---0	-----	MAIN STEAM - MECH. SHOCK SUPP. 2-01A-0-1441-DE060
F1.02.103	2-03-H4B	0-1479A	VT	QCL-14	-----	14.00	---0	-----	MAIN FDWTR - SPRING 2-03-0-1479A-H4B
F1.02.106	2-03-H7B	0-1480A	VT	QCL-14	-----	20.00	---0	-----	MAIN FDWTR - SPRING 2-03-0-1480B-H7B

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F1.02.111	2-03-H12A	0-1481A	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-1481A-H12A
F1.02.114	2-03-H15A	0-1481A	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-1481A-H15A
F1.02.118	2-03-H2A	0-1479A	VT	QCL-14	-----	14.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-1479A-H2A
F1.02.120	2-03-H4A	0-1479A	VT	QCL-14	-----	14.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-1479A-H4A
F1.02.122	2-03-H6A	0-1480A	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - X RIGID 2-03-0-1480A-H6A
F1.02.123	2-03-H7A	0-1480A	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - SNUBBER 2-03-0-1480A-H7A
F1.02.124	2-03-H8A	0-1480A	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-1480A-H8A
F1.02.206	2-53B-R5	0-436E	VT	QCL-14	-----	10.00	---.---0	-----	HPI - RIGID 2-53B-7-0-436E-R5
F1.02.207	2-53B-H10	0-436E	VT	QCL-14	-----	6.00	---.---0	-----	HPI - RIGID 2-53B-2-0-436E-H10
F1.02.208	2-51A-SR59	0-435B	VT	QCL-14	-----	6.00	---.---0	-----	HPI - RIGID 2-51A-6-0-435B-SR59
F1.02.225	2-54A-R43	0-435B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-54A-1-0-435B-R43
F1.02.226	2-54A-R2-7	0-435B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - ANCHOR 2-54A-EMCH-R2-7
F1.02.227	2-54A-DE15	0-435B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-54A-435B-DE15
F1.02.228	2-54A-DE14	0-435B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-54A-435B-DE14
F1.02.229	2-53B-H52	0-435B	VT	QCL-14	-----	---.---0	---.---0	-----	DECAY HEAT - SPRING 2-53B-435B-EMCH-H52
F1.02.230	2-53B-DE020	0-435B	VT	QCL-14	-----	14.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-435B-DE020

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F1.02.232	2-53B-R67	0-435B	VT	QCL-14	----	14.00	---.---0	----	DECAY HEAT - RIGID 2-53B-2-0-435B-R67
F1.02.240	2-53B-DE009	0-435B	VT	QCL-14	----	12.00	---.---0	----	DECAY HEAT - RIGID 2-53B-435B-DE009
F1.02.244	2-54A-R42	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-54A-1-0-435B-R42
F1.02.245	2-54A-DE01	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-54A-435B-DE01
F1.02.246	2-54A-R2-2	0-435B	VT	QCL-14	----	---.---0	---.---0	----	DECAY HEAT - SPRING 2-54A-435B-EMOH-R2-2
F1.02.251	2-53B-H71	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - SPRING 2-53B-5-0-435B-H71
F1.02.256	2-53B-DE019	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-53B-0-435B-DE019
F1.02.257	2-53B-DE016	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-53B-0-435B-DE016
F1.02.262	2-53B-DE010	0-435B	VT	QCL-14	----	12.00	---.---0	----	DECAY HEAT - RIGID 2-53B-0-435B-DE010
F1.02.265	2-53B-H8	0-1436A	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-53B-5-0-1436A-H8
F1.02.266	2-53B-H14	0-1436A	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-53B-5-0-1436A-H14
F1.02.270	2-53B-H18	0-435B	VT	QCL-14	----	14.00	---.---0	----	DECAY HEAT - ANCHOR 2-53B-4-0-435B-H18
F1.02.271	2-53B-DE017	0-435B	VT	QCL-14	----	14.00	---.---0	----	DECAY HEAT - RIGID 2-53B-435B-DE017
F1.02.275	2-53B-H6(A)	0-435B	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - RIGID 2-53B-10-0-435B-H6
F1.02.279	2-53B-H8	0-1436A	VT	QCL-14	----	10.00	---.---0	----	DECAY HEAT - SPRING 2-53B-10-0-1436A-H8
F1.02.280	2-53B-H63	0-1436A	VT	QCL-14	----	8.00	---.---0	----	DECAY HEAT - SPRING 2-53B-4-0-1436A-H63

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F1.02.283	2-53B-R34	0-1439A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-0-1439A-R34
F1.02.285	2-53B-R10	0-1439A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-5-0-1439A-R10
F1.02.290	2-53B-127	0-1439B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - SWAY STRUT 2-53B-2-0-1439B-127
F1.02.291	2-53B-R6	0-1439B	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-2-0-1439B-R6
F1.02.335	2-53B-H26	0-1439C	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-0-1439C-H26
F1.02.340	2-53B-R12	0-444	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-5-0-444-R12
F1.02.341	2-53B-H60	0-439A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-0-439A-H60
F1.02.342	2-53B-R11	0-1444	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-5-0-1444-R11
F1.02.343	2-53B-H16	0-1436A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - SPRING 2-53B-5-0-1436A-H16
F1.02.345	2-53B-H13	0-1436A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - RIGID 2-53B-5-0-1436A-H13
F1.02.347	2-53A-H3B	0-1478A	VT	QCL-14	-----	10.00	---.---0	-----	DECAY HEAT - Y RIGID 2-53A-0-1478A-H3B
F1.02.362	2-54B-H13B	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H13B
F1.02.363	2-54B-H12B	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H12B
F1.02.364	2-54B-H11B	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-H11B
F1.02.366	2-54B-H9B	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY-HYD. SUPP. 2-54B-0-1477-H9B
F1.02.386	2-54B-H2493	0-1477	VT	QCL-14	-----	6.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-GPD-H2493

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F1.02.387	2-54B-H2494	0-1477	VT	QCL-14	-----	6.00	---.---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-GPD-H2494
F1.02.388	2-54B-H2495	0-1477	VT	QCL-14	-----	6.00	---.---0	-----	REACTOR BLDG. SPRAY-LAT. RIGID 2-54B-0-1477-GPD-H2495
F1.02.389	2-54B-H2496	0-1477	VT	QCL-14	-----	6.00	---.---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-GPD-H2496
F1.02.390	2-54B-H2497	0-1477	VT	QCL-14	-----	6.00	---.---0	-----	REACTOR BLDG. SPRAY-LAT. RIGID 2-54B-0-1477-GPD-H2497
F1.02.391	2-54B-H15A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-H15A
F1.02.392	2-54B-H14A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H14A
F1.02.393	2-54B-H13A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H13A
F1.02.397	2-54B-H9A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY-HYD. SUPP. 2-54B-0-1477-H9A
F1.02.398	2-54B-H8A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H8A
F1.02.402	2-54B-H4A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54B-0-1477-H4A
F1.02.403	2-54B-H3A	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-H3A
F1.02.405	2-54B-H1901	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-GPD-H1901
F1.02.406	2-54B-H1902	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-GPD-H1902
F1.02.408	2-54B-H1904	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-GPD-H1904
F1.02.410	2-54B-H1906	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - X RIGID 2-54B-0-1477-GPD-H1906
F1.02.411	2-54B-H1907	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-GPD-H1907

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F1.02.412	2-54B-H1908	0-1477	VT	QCL-14	-----	6.00	---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-GPD-H1908
F1.02.425	2-54B-H1973	0-1477	VT	QCL-14	-----	6.00	---0	-----	REACTOR BLDG. SPRAY-LAT. RIGID 2-54B-0-1477-GPD-H1973
F1.02.426	2-54B-H1974	0-1477	VT	QCL-14	-----	6.00	---0	-----	REACTOR BLDG. SPRAY - Y RIGID 2-54B-0-1477-GPD-H1974
F1.02.428	2-54A-R101	0-435B	VT	QCL-14	-----	8.00	---0	-----	RB SPRAY - SHOCK SWAY SUPPORT 2-54A-3-0-435B-R101
F1.02.429	2-54A-H50	0-435B	VT	QCL-14	-----	---0	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-435B-H50
F1.02.434	2-54A-H1	0-1444	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1444-H1
F1.02.435	2-54A-H3	0-1436A	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY-RIGID 2-54A-3-0-1436A-H3
F1.02.437	2-54A-R3	0-1444	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1444-R3
F1.02.439	2-54A-H27	0-435B	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54A-3-0-435B-H27
F1.02.440	2-54A-R2	0-435B	VT	QCL-14	-----	---0	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-435B-R2
F1.02.467	2-54A-R43	0-1439B	VT	QCL-14	-----	10.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1439B-R43
F1.02.470	2-54A-H19	0-1439B	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54A-3-0-1439B-H19
F1.02.471	2-54A-R1	0-1444	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1444-R1
F1.02.472	2-54A-H17	0-1439B	VT	QCL-14	-----	10.00	---0	-----	REACTOR BLDG. SPRAY - SPRING 2-54A-3-0-1439B-H17
F1.02.476	2-54A-DE018	0-1439C	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1439C-DE018
F1.02.479	2-54A-H25A	0-1439A	VT	QCL-14	-----	8.00	---0	-----	REACTOR BLDG. SPRAY - RIGID 2-54A-3-0-1439A-H25A

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F1.02.483	2-54B-H15B	0-1477	VT	QCL-14	-----	8.00	---.---0	-----	REACTOR BLDG. SPRAY-Y RIGID 2-54B-0-1477-H15B
F1.02.501	2-55-DE001	0-1439C	VT	QCL-14	-----	8.00	---.---0	-----	COMPONENT COOLING - RIGID 2-55-1-0-1439C-DE001
F1.02.536	2-56-DE001	0-1439E	VT	QCL-14	-----	10.00	---.---0	-----	SPENT FUEL - RIGID 2-56-1439E-DE001
F1.02.557	2-03-GEN.2A-7	GM-201-1054	VT	QCL-14	CS	14.00	---.---0	-----	SGA FDWTR.HDR.Y-RIGID X-Y QUAD.NEAR X-AXIS
F1.02.565	2-03-GEN.2B-7	GM-201-1054	VT	QCL-14	CS	14.00	---.---0	-----	SGB FDWTR.HDR.Y-RIGID Z-W QUAD.NEAR Z-AXIS
F1.03.000	CLASS 3	SUPPORTS	---	-----	-----	---.0	---.---0	-----	-----
F1.03.003	2-01A-R17	0-1403B	VT	QCL-14	-----	6.00	---.---0	-----	STM SUPPLY EFMP TURBINE-H.S.S 2-01A-4-0-1403D-R17
F1.03.016	2-01A-R20	0-1403D	VT	QCL-14	-----	6.00	---.---0	-----	STM SUPPLY EFMP TURB. - RIGID 2-01A-4-0-1403D-R20
F1.03.017	2-01A-DE034	0-1403D	VT	QCL-14	-----	8.00	---.---0	-----	STM SUPPLY EFMP TURB. - RIGID 2-01A-1403D-DE034
F1.03.018	2-01A-R23	0-1403D	VT	QCL-14	-----	6.00	---.---0	-----	STM SUPPLY EFMP TURB. - RIGID 2-01A-4-0-1403D-R23
F1.03.019	2-01A-H6	0-1403D	VT	QCL-14	-----	6.00	---.---0	-----	STM SUPPLY EFMP TURB. - SPRING 2-01A-4-0-1403D-H6
F1.03.020	2-01A-R22	0-1403D	VT	QCL-14	-----	6.00	---.---0	-----	SS EFMP TURB. - S&S SUPPORT 2-01A-4-0-1403D-R22
F1.03.021	2-01A-DE071	0-1403D	VT	QCL-14	-----	6.00	---.---0	-----	SS EFMP TURB. - SMAY STRUT 2-01A-4-0-1403D-DE071
F1.03.052	2-03-H52	0-1439B	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - RIGID 2-03-0-1439B-H52
F1.03.055	2-03-H50	0-551	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - SPRING 2-03-0-551-H50
F1.03.061	2-03-H60	0-551	VT	QCL-14	-----	24.00	---.---0	-----	MAIN FDWTR - RIGID 2-03-0-551-H60

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F1.03.101	2-03A-SR13	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1401B-SR13
F1.03.102	2-03A-0801	0-1401	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1401-JG-0801
F1.03.103	2-03A-H38	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - SPRING 2-03A-1-0-1401A-H38
F1.03.104	2-03A-DE034	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - MECH SUPP. 2-03A-1401A-DE034
F1.03.105	2-03A-1215	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1401A-GC-1215
F1.03.106	2-03A-SR46	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1401A-SR46
F1.03.107	2-03A-H58	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - SPRING 2-03A-1-0-1401A-H58
F1.03.108	2-03A-H31	0-1439B	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - SPRING 2-03A-1-0-1439B-H31
F1.03.120	2-03A-H23	0-1439A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1439A-H23
F1.03.121	2-03A-R60	0-1439A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1439A-R60
F1.03.122	2-03A-H21	0-1439A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - SPRING 2-03A-1-0-1439A-H21
F1.03.123	2-03A-SR53	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1400A-SR53
F1.03.124	2-03A-H34	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR. - SPRING 2-03A-1-0-1400A-H34
F1.03.125	2-03A-H35A	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR. - SPRING 2-03A-1-0-1400A-H35A
F1.03.137	2-03A-SR29	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1-0-1401A-SR29
F1.03.138	2-03A-0803	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1401A-GC-0803

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F1.03.139	2-03A-0804	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER FDWTR - RIGID 2-03A-1401A-GC-0804
F1.03.161	2-03A-DE015	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE015
F1.03.162	2-03A-DE014	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE014
F1.03.163	2-03A-SR9	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1401B-SR9
F1.03.164	2-03A-DE012	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE012
F1.03.165	2-03A-SR10	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1401B-SR10
F1.03.166	2-03A-DE011	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE011
F1.03.169	2-03A-DE009	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE009
F1.03.170	2-03A-DE001	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401B-DE001
F1.03.171	2-03A-DE035	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1401B-DE035
F1.03.200	2-03A-H15	0-1439B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1439B-H15
F1.03.201	2-03A-H41	0-1400B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400B-H41
F1.03.202	2-03A-SR38	0-1400B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400B-SR38
F1.03.203	2-03A-H51	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - SPRING 2-03A-1-0-1401B-H51
F1.03.218	2-03A-H14	0-1437A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H14
F1.03.219	2-03A-SR12	0-1437A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1437A-SR12

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F1.03.220	2-03A-H13	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H13
F1.03.221	2-03A-SR11	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-SR11
F1.03.222	2-03A-H12	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H12
F1.03.232	2-03A-SR8	0-1439B	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1439B-SR8
F1.03.233	2-03A-H7	0-1439B	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1439B-H7
F1.03.234	2-03A-SR26	0-1400A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1400A-SR26
F1.03.235	2-03A-H28	0-1400A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H28
F1.03.236	2-03A-SR27	0-1400A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1400A-SR27
F1.03.245	2-03A-H18	0-1444	VT	QCL-14	6.00	---	---	EMER. FDWTR - SPRING 2-03A-1-0-1444-H18
F1.03.246	2-03A-SR5	0-1444	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1444-SR5
F1.03.247	2-03A-H5	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H5
F1.03.248	2-03A-H4	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H4
F1.03.249	2-03A-H3	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-H3
F1.03.250	2-03A-SR4	0-1437A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1437A-SR4
F1.03.273	2-03A-H38	0-1400B	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1400B-H38
F1.03.274	2-03A-SR33	0-1400A	VT	QCL-14	6.00	---	---	EMER. FDWTR - RIGID 2-03A-1-0-1400A-SR33

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F1.03.275	2-03A-SR32	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-SR32
F1.03.276	2-03A-SR104	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - HYD. SUPP. 2-03A-1-0-1400A-SR104
F1.03.277	2-03A-H71	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H71
F1.03.278	2-03A-H70	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H70
F1.03.279	2-03A-H72	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H72
F1.03.280	2-03A-H73	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H73
F1.03.288	2-03A-H76	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H76
F1.03.289	2-03A-H77	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H77
F1.03.290	2-03A-H108	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H108
F1.03.291	2-03A-H78	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - SWAY STRUT 2-03A-1-0-1400A-H78
F1.03.292	2-03A-H79	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H79
F1.03.293	2-03A-H107	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - SWAY STRUT 2-03A-1-0-1400A-H107
F1.03.306	2-03A-SR55	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-SR55
F1.03.307	2-03A-H100	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H100
F1.03.308	2-03A-H121	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - MECH SUPPORT 2-03A-1-0-1400A-H121
F1.03.309	2-03A-H91	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H91

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F1.03.310	2-03A-H92	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - RIGID 2-03A-1-0-1400A-H92
F1.03.311	2-03A-SR15	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - RIGID 2-03A-1-0-1400A-SR15
F1.03.312	2-03A-H32	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - SPRING 2-03A-1-0-1400A-H32
F1.03.313	2-03A-SR52	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - RIGID 2-03A-1-0-1400A-SR52
F1.03.314	2-03A-H95	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - RIGID 2-03A-1-0-1400A-H95
F1.03.315	2-03A-H94	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	EMER FDMTR - RIGID 2-03A-1-0-1400A-H94
F1.03.379	2-07A-H63	0-1400A	VT	QCL-14	-----	24.00	---.---0	-----	CONDENSATE SYSTEM - SWAY STRUT 2-07A-6-0-1400A-H63
F1.03.380	2-07A-H72	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H72
F1.03.381	2-07A-H62	0-1400A	VT	QCL-14	-----	24.00	---.---0	-----	CONDENSATE SYSTEM - MECH. 2-07A-6-0-1400A-H62
F1.03.382	2-07A-H73	0-1400A	VT	QCL-14	-----	6.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H73
F1.03.383	2-07A-H77	0-1400A	VT	QCL-14	-----	20.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H77
F1.03.384	2-07A-H75	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H75
F1.03.385	2-07A-H17	0-1400A	VT	QCL-14	-----	20.00	---.---0	-----	CONDENSATE SYSTEM - SPRING 2-07A-0-1400A-H17
F1.03.395	2-07A-H50	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H50
F1.03.396	2-07A-H51	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H51
F1.03.397	2-07A-H52	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H52

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F1.03.398	2-07A-H53	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H53
F1.03.399	2-07A-H54	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - SWAY STRUT 2-07A-6-0-1400A-H54
F1.03.400	2-07A-H55	0-1400A	VT	QCL-14	-----	8.00	---.---0	-----	CONDENSATE SYSTEM - SPRING 2-07A-6-0-1400A-H55
F1.03.401	2-07A-H56	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - SPRING 2-07A-6-0-1400A-H56
F1.03.402	2-07A-H57	0-1400A	VT	QCL-14	-----	8.00	---.---0	-----	CONDENSATE SYSTEM - SPRING 2-07A-6-0-1400A-H57
F1.03.403	2-07A-H58	0-1400A	VT	QCL-14	-----	12.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-6-0-1400A-H58
F1.03.404	2-07A-DE012	0-1400A	VT	QCL-14	-----	8.00	---.---0	-----	CONDENSATE SYSTEM - RIGID 2-07A-1400A-DE012
F1.03.452	2-08-H2	0-1400A	VT	QCL-14	-----	10.00	---.---0	-----	EFMP TURBINE EXHAUST - SPRING 2-08-1-0-1400A-H2
F1.03.454	2-08-H3	0-1401A	VT	QCL-14	-----	10.00	---.---0	-----	EFMP TURBINE EXHAUST - SPRING 2-08-1-0-1401A-H3
F1.03.475	2-14B-H5188	0-437B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-437B-H5188
F1.03.476	2-14B-H5187	0-437B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - SWAY STRUT 2-14B-437B-H5187
F1.03.477	2-14B-2001	0-437B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-437B-RMC-2001
F1.03.478	2-14B-1601	0-437B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-437B-J8-1601
F1.03.479	2-14B-DE110	0-438B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-438B-DE110
F1.03.480	2-14B-SR5	0-438B	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-0-438B-SR5
F1.03.481	2-14B-DE108	0-438C	VT	QCL-14	-----	6.00	---.---0	-----	AUX SERVICE WATER - RIGID 2-14B-438C-DE108

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F1.03.482	2-14B-DE107	0-438C	VT	QCL-14	-----	6.00	---0	-----	AUX SERVICE WATER - RIGID 2-14B-438C-DE107
F1.03.483	2-14B-SR6	0-438C	VT	QCL-14	-----	6.00	---0	-----	AUX SERVICE WATER - RIGID 2-14B-0-438C-SR6
F1.03.484	2-14B-DE106	0-438C	VT	QCL-14	-----	6.00	---0	-----	AUX SERVICE WATER - SWAY STRUT 2-14B-438C-DE106
F1.03.517	2-03A-1104	0-1401A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1401A-JG-1104
F1.03.535	2-03A-H99	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - SWAY STRUT 2-03A-1-0-1400A-H99
F1.03.536	2-03A-H105	0-1400A	VT	QCL-14	-----	2.00	---0	-----	EMER. FDWTR - MECH. SHOCK 2-03A-1-0-1400A-H105
F1.03.537	2-03A-H5181	0-1439C	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - SWAY STRUT 2-03A-1439C-H5181
F1.03.543	2-03A-H22	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H22
F1.03.553	2-03A-H24	0-1400B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400B-H24
F1.03.554	2-03A-H23	0-1400A	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400A-H23
F1.03.560	2-03A-SR34(A)	0-1400B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR - RIGID 2-03A-1-0-1400B-SR34
F1.03.565	2-03A-DE026	0-1401B	VT	QCL-14	-----	6.00	---0	-----	EMER. FDWTR. RIGID 2-03A-1401B-DE026

\*\*\*\*\* FOR UNIT 2 \*\*\*\*\*  
 \*\*\* THERE WERE 236 RECORDS SELECTED \*\*\*  
 \*\*\* WHOSE ITEM NUMBERS BEGIN WITH F1. \*\*\*

\*\*\* THERE WERE 573 TOTAL RECORDS \*\*\*  
 \*\*\* SELECTED FOR UNIT 2 \*\*\*  
 \*\*\*\*\*

#### 4.0 Results of Inspections Performed During Outage 8

The results of each inspection shown in the final ISI Plan (Section 3 of this report) are included in this section. The completion date and status for each inspection are shown. All inspections revealing reportable indications are described in further detail in Section 5, 6 or 7 as applicable.

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**SELECTION CRITERIA FOR THIS REPORT IS AS FOLLOWS:**

[illegible]

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
B02.011.006	2PZR-WP28	08/27/86	REC	L	1	IMB-3122.4(B) NO GROWTH,ACCEPT
B03.150.001	2-44773-4I-V1	09/08/86	CLR	L	1	BASELINE OUT.7
B03.160.001	2-44773-4I-V1	09/08/86	CLR	L	1	BASELINE OUT.7
B05.020.001	2PZR-WP23	08/26/86	CLR	L	1	
B05.020.001A	2PZR-WP23	08/26/86	CLR		1	
B05.020.001B	2PZR-WP23	08/26/86	CLR		1	
B05.050.007	2PIB2-7	08/22/86	CLR	L	1	
B05.050.007A	2PIB2-7	08/22/86	CLR		1	
B05.050.007B	2PIB2-7	08/22/86	CLR		1	
B05.050.009	2PSL-10	09/03/86	CLR	L	1	
B05.050.009A	2PSL-10	09/03/86	REC	L	1	GEOMETRIC REFLECTOR
B05.050.009B	2PSL-10	08/27/86	CLR		1	
B05.050.012	2PHB-17	09/03/86	CLR	L	1	
B05.051.009	2PIB2-11	08/25/86	CLR		1	
B05.051.010	2PIB2-12	08/22/86	CLR		1	
B06.190.001	2RCP-A1-FLANGE	08/30/86	CLR		1	
B06.190.004	2RCP-B2-FLANGE	09/13/86	CLR		1	
B07.020.001	2PZR-UHB-STUDS	09/05/86	CLR		1	
B07.070.003	2-53A-CF13	09/11/86	CLR		1	
B07.070.004	2-53A-CF14	09/05/86	CLR		1	
B07.070.016	2-53A-LP45	09/29/86	CLR		1	
B07.080.001	2RPV-CRD-BOLTS	09/11/86	REC		1	CRD #1 AND #60
B07.080.002	2RPV-CRD-RINGS	09/11/86	REC		1	CRD#1 AND #60 , NCI 0-1922
B08.010.001	2RPV-HD-LUG-A	09/06/86	REP		1	REF.NCI 0-1918

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B08.010.002	2RPV-HD-LUG-B	09/06/86	CLR		1	
B08.010.003	2RPV-HD-LUG-C	09/06/86	CLR		1	
B08.020.001	2PZR-WP82-X	08/26/86	CLR	L	1	INB-3122.4(B)
B08.020.002	2PZR-WP82-XY	09/06/86	CLR	L	1	ADDED PER INB-2430
B08.020.003	2PZR-WP82-Y	09/09/86	CLR	L	1	ADDED PER INB-2430
B08.020.004	2PZR-WP82-YZ	09/06/86	CLR	L	1	ADDED PER INB-2430
B08.020.005	2PZR-WP82-Z	08/26/86	CLR	L	1	INB-3122.4(B)
B08.020.006	2PZR-WP82-ZN	09/06/86	REP	L	2	REF.NCI 0-1905 INB-3122.4(B)
B08.020.007	2PZR-WP82-M	09/04/86	CLR	L	1	INB-3122.4(B)
B08.020.008	2PZR-WP82-MX	09/06/86	REP	L	2	REF.NCI 0-1916 INB-3122.4(B)
B09.011.045	2PIB2-3	08/25/86	CLR	L	1	
B09.011.045A	2PIB2-3	08/25/86	CLR		1	
B09.011.046	2PIB2-4	08/25/86	CLR		1	
B09.011.046A	2PIB2-4	08/25/86	CLR		1	
B09.011.102	2PSL-8	09/02/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.102A	2PSL-8	08/27/86	CLR		1	
B09.011.103	2PSL-9	09/02/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.103A	2PSL-9	08/27/86	CLR		1	
B09.011.152	2-53A-8.2-50	09/02/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.152A	2-53A-8.2-50	08/27/86	CLR		1	
B09.011.153	2-53A-8.2-48	09/02/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.153A	2-53A-8.2-48	08/27/86	CLR		1	
B09.011.154	2-53A-8.2-43	08/29/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.154A	2-53A-8.2-43	08/27/86	CLR		1	

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
B09.011.155	2-53A-8.2-60	08/29/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.155A	2-53A-8.2-60	08/27/86	CLR		1	
B09.011.156	2-53A-8.1-01	08/29/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.156A	2-53A-8.1-01	08/27/86	CLR		1	
B09.011.157	2-53A-8.1-05	08/29/86	CLR		1	
B09.011.157A	2-53A-8.1-05	08/27/86	CLR		1	
B09.011.158	2-53A-8.1-12	08/29/86	CLR		1	GEOMETRIC REFLECTOR
B09.011.158A	2-53A-8.1-12	08/27/86	CLR		1	
B09.011.159	2-53A-8.1-15	09/03/86	CLR	L	1	
B09.011.159A	2-53A-8.1-15	08/27/86	CLR		1	
B09.012.031	2PIB2-62LI	08/25/86	CLR	L	1	
B09.012.031A	2PIB2-62LI	08/25/86	CLR		1	
B09.012.032	2PIB2-62L0	08/25/86	CLR	L	1	
B09.012.032A	2PIB2-62L0	08/25/86	CLR		1	
B09.012.033	2PIB2-45LI	08/25/86	CLR		1	
B09.012.033A	2PIB2-45LI	08/25/86	CLR		1	
B09.012.034	2PIB2-45L0	08/25/86	CLR	L	1	
B09.012.034A	2PIB2-45L0	08/25/86	CLR		1	
B14.010.003	2RPV-CRD-60MH9	09/09/86	CLR		1	
B14.010.008	2RPV-CRD-60M60	09/06/86	CLR		1	
B14.010.009	2RPV-CRD-60	09/06/86	CLR		1	
B14.010.012	2RPV-CRD-60M61	09/06/86	CLR		1	
B15.010.001	2RPV-LK TEST	10/15/86	CLR		1	
B15.020.001	2PZR-LK TEST	10/15/86	CLR		1	

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B15.030.001	2SGA-LK TEST	10/15/86	CLR		1	
B15.030.002	2SGB-LK TEST	10/15/86	CLR		1	
B15.040.001	2LDC2A+LK TEST	10/15/86	CLR		1	
B15.040.002	2LDC2B+LK TEST	10/15/86	CLR		1	
B15.050.001	2-OFD-100A-2.1	10/15/86	CLR		1	
B15.050.001A	2-OFD-100A-2.2	10/15/86	CLR		1	
B15.050.002	2-OFD-101A-2.1	10/15/86	REC		1	
B15.050.003	2-OFD-101A-2.4	10/15/86	CLR		1	
B15.050.004	2-OFD-102A-2.1	10/15/86	REC		1	
B15.050.005	2-OFD-102A-2.2	10/15/86	CLR		1	
B15.050.006	2-OFD-102A-2.3	10/15/86	CLR		1	
B15.050.007	2-OFD-110A-2.1	10/15/86	CLR		1	
B15.050.008	2-OFD-127B-2.2	10/15/86	CLR		1	
B15.050.009	2-OFD-100A-2.3	10/15/86	CLR		1	
B15.060.001	2-RCP-2A1	10/15/86	CLR		1	
B15.060.002	2-RCP-2A2	10/15/86	CLR		1	
B15.060.003	2-RCP-2B1	10/15/86	CLR		1	
B15.060.004	2-RCP-2B2	10/15/86	CLR		1	
B16.011.001	2SGA-TUBES	08/22/86	REC		1	
B16.011.002	2SGB-TUBES	08/22/86	REC		1	
C01.010.003	2SGA-WG8-3	09/08/86	CLR	L	1	
C03.010.017	2-CFTA-WT18-X	09/08/86	CLR		1	
C03.010.027	2SGB-WG84-ZW	09/05/86	CLR	L	1	
C03.010.031	2SGA-WG84-XY	09/05/86	CLR	L	1	

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C03.040.001	2-01A-H5	09/10/86	CLR	L	1	
C03.040.031	2-03-H15A	09/09/86	CLR		1	
C03.040.071	2-54B-H4A	09/12/86	CLR		1	
C03.040.087	2-03-GEN.2A-7	09/05/86	CLR		1	
C03.040.095	2-03-GEN.2B-7	09/05/86	CLR		1	
C05.011.012	2-53B-17.3-44	07/30/86	CLR		1	
C05.011.013	2-53B-17.3-118	07/30/86	CLR		1	
C05.011.014	2-53B-17.3-39	07/30/86	CLR		1	
C05.011.015	2-53B-17.3-37	07/30/86	CLR		1	
C05.011.029	2-53B-18.3-65	07/30/86	CLR		1	
C05.011.030	2-53B-18.3-63A	07/30/86	CLR		1	
C05.011.031	2-53B-18.3-60B	07/30/86	CLR		1	
C05.011.032	2-53B-18.3-55	07/30/86	CLR		1	
C05.011.046	2-53B-19.3-19	08/08/86	CLR		1	
C05.011.047	2-53B-19.3-1	07/30/86	CLR		1	
C05.011.063	2-53B-26.1-31	07/30/86	CLR		1	
C05.011.064	2-53B-26.1-58	07/30/86	CLR		1	
C05.011.065	2-53B-26.1-35A	07/30/86	CLR		1	
C05.011.066	2-53B-26.2-41B	07/30/86	CLR		1	
C05.011.112	2-53B-17.2-81	07/30/86	CLR		1	
C05.011.113	2-53B-18.1-47	07/30/86	CLR		1	
C05.011.202	2-53A-8.2-40	08/27/86	CLR		1	
C05.011.204	2-CFTA-WJ217	09/06/86	CLR		1	
C05.011.335	2-54A-8.3-52	09/11/86	CLR		1	

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C05.011.336	2-54A-8.3-47	09/11/86	CLR		1	
C05.011.337	2-54A-8.3-55	09/10/86	CLR		1	
C05.011.340	2-54A-8.3-71	09/11/86	CLR		1	
C05.011.341	2-54A-8.3-75	09/11/86	CLR		1	
C05.011.561	2-03A-24-WG106	08/29/86	CLR		1	
C05.011.562	2-03A-25-WG106	08/29/86	CLR		1	
C05.011.570	2-01A-15-07	09/03/86	CLR		1	
C05.021.108	2-01A-MS10A-A	09/10/86	CLR		1	
C05.021.108A	2-01A-MS10A-A	09/10/86	CLR		1	
C05.021.109	2-01A-4.1-21	09/02/86	CLR		1	
C05.021.109A	2-01A-4.1-21	09/02/86	CLR		1	
C05.021.110	2-01A-MS21A-A	09/03/86	CLR		1	
C05.021.110A	2-01A-MS21A-A	09/03/86	CLR		1	
C05.021.111	2-01A-4.3-13	09/03/86	CLR		1	
C05.021.111A	2-01A-4.3-13	09/03/86	CLR		1	
C05.021.123	2-01A-MS7B-B	08/29/86	CLR		1	
C05.021.123A	2-01A-MS7B-B	08/26/86	CLR		1	
C05.031.252	2-53B-17.3-119	07/28/86	CLR		1	
C07.010.001	2LPCA	08/18/86	CLR		1	
C07.010.002	2LPCB	08/18/86	CLR		1	
C07.020.001	2-0FD-102A-2.1	08/17/86	REC		1	
C07.020.002	2-0FD-102A-2.2	08/17/86	REC		1	
C07.020.004	2-0FD-103A-2.1	08/08/86	CLR		1	
C07.020.005	2-0FD-101A-2.2	08/18/86	CLR		1	

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C07.020.006	2-0FD-101A-2.4	07/17/86	CLR		1	
C07.020.007	2-0FD-101A-2.3	07/07/86	CLR		1	
C07.020.008	2-0FD-101A-2.5	10/04/86	CLR		1	
C07.030.001	2-LPI-PUMP-2A	08/18/86	REC		1	
C07.030.002	2-LPI-PUMP-2B	08/18/86	REC		1	
C07.030.003	2-LPI-PUMP-2C	08/17/86	REC		1	
C07.030.004	2-HPI-PUMP-2C	07/17/86	CLR		1	
C07.030.006	2-RBS-PUMP-2A	08/08/86	CLR		1	
C07.030.007	2-RBS-PUMP-2B	08/08/86	CLR		1	
C07.030.008	2-SSF-2P-1	10/04/86	CLR		1	
D01.011.001	2-0FD-100A-2.1	07/31/85	CLR		1	
D01.011.005	2-0FD-101A-2.4	07/07/86	CLR		1	
D01.011.008	2-0FD-109A-1.1	07/12/85	CLR		1	
D01.011.009	2-0FD-110A-2.1	07/12/85	CLR		1	
D02.011.001A	2-0FD-110A-2.3	07/15/86	CLR		1	
D02.011.002	2-0FD-116B-2.1	08/12/86	CLR		1	
D02.011.007	2-0FD-121D-2.1	10/11/86	CLR		1	
D02.011.008	2-0FD-121D-1.2	07/21/86	CLR		1	
D02.011.009	2-0FD-122A-2.4	10/11/86	CLR		1	
D02.011.015	2-0FD-133A-2.2	07/21/86	CLR		1	
D02.011.016	2-0FD-133A-2.1	07/21/86	CLR		1	
D02.011.017	2-0FD-133A-2.3	07/21/86	CLR		1	
D02.011.018	2-0FD-133A-2.5	07/21/86	CLR		1	
D02.020.001	2-01A-R20	09/22/86	CLR		1	

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D02.020.002	2-01A-R23	09/25/86	CLR		1	
D02.020.013	2-03-H60	08/01/86	CLR		1	
D02.020.020	2-03A-1215	09/22/86	CLR		1	
D02.020.021	2-03A-SR46	07/10/86	CLR		1	
D02.020.030	2-03A-DE015	07/02/86	REC		1	
D02.020.031	2-03A-SR9	07/02/86	CLR		1	
D02.020.041	2-03A-SR38	08/21/86	CLR		1	
D02.020.048	2-03A-H14	09/18/86	CLR		1	
D02.020.049	2-03A-SR12	09/10/86	CLR		1	
D02.020.050	2-03A-H13	09/10/86	CLR		1	
D02.020.051	2-03A-SR11	09/10/86	CLR		1	
D02.020.052	2-03A-H12	09/10/86	CLR		1	
D02.020.059	2-03A-SR8	09/08/86	CLR		1	
D02.020.060	2-03A-SR26	07/01/86	CLR		1	
D02.020.061	2-03A-H28	07/07/86	CLR		1	
D02.020.062	2-03A-SR27	07/01/86	CLR		1	
D02.020.067	2-03A-SR5	07/31/86	CLR		1	
D02.020.068	2-03A-H5	07/16/86	CLR		1	
D02.020.069	2-03A-H3	07/25/86	CLR		1	
D02.020.070	2-03A-SR4	07/25/86	CLR		1	
D02.020.082	2-03A-H38	08/21/86	CLR		1	
D02.020.086	2-03A-SR55	09/08/86	CLR		1	
D02.020.088	2-03A-H95	07/08/86	CLR		1	
D02.020.120	2-14B-SR6	07/14/86	CLR		1	

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PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
OCONEE 2 INSERVICE INSPECTION RESULTS OUTAGE 8

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
D02.020.124	2-03A-H24	07/09/86	CLR		1	
D02.020.125	2-03A-H23	07/08/86	CLR		1	
D02.020.132	2-03A-SR34(A)	07/03/86	CLR		1	
D02.040.002	2-03A-H18	07/31/86	CLR		1	
D02.040.010	2-07A-H56	06/30/86	REC		1	
D03.011.001	2-0FD-104A-1.1	09/05/86	CLR		1	
E01.001.001	2RCP-2A1	09/24/86	CLR		1	
E01.001.002	2RCP-2A2	09/24/86	CLR		1	
E01.001.003	2RCP-2B1	10/04/86	CLR		1	
E01.001.004	2RCP-2B2	10/04/86	CLR		1	
E04.001.001	2PDA1-47	09/04/86	CLR		1	
E04.001.001A	2PDA1-47	08/27/86	CLR		1	
E04.001.002	2PDA2-47	09/04/86	CLR		1	
E04.001.002A	2PDA2-47	08/27/86	CLR		1	
E04.001.003	2PDB1-47	08/26/86	CLR		1	
E04.001.004	2PDB2-47	09/04/86	CLR		1	
E04.001.004A	2PDB2-47	08/27/86	CLR		1	
E05.001.001	2-CFTA-VLV-HD	09/30/86	REC		1	INC-2420(B), NO GROWTH, ACCEPT
E05.001.003	2-CFTA-WT18-W	09/08/86	CLR		1	
F1.01.021	2-50-H1A	09/02/86	CLR		1	
F1.01.022	2-50-H2A	09/02/86	REC		1	
F1.01.023	2-50-H3A	09/02/86	REC		1	
F1.01.024	2-57-H0801	08/27/86	CLR		1	
F1.01.025	2-57-H0802	08/27/86	REC		1	

PROGRAM: RUND7179-QAISI04  
FILE: 0007133  
PLANT: CCONEE 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
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CCONEE 2 INSERVICE INSPECTION RESULTS OUTAGE 8

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.01.026	2-50-H6	08/27/86	CLR		1	
F1.01.027	2-50-H1	09/10/86	REC		1	
F1.01.028	2-50-H3	08/27/86	CLR		1	
F1.01.029	2-50-H4	08/27/86	CLR		1	
F1.01.055	2-51A-H14A	08/26/86	REC		1	
F1.01.056	2-51A-H15A	08/26/86	CLR		1	
F1.01.057	2-51A-H16A	08/26/86	CLR		1	
F1.01.072	2-51A-H1A	09/10/86	CLR		1	
F1.01.073	2-51A-H12B	08/26/86	CLR		1	
F1.01.074	2-51A-H11B	08/26/86	CLR		1	
F1.01.077	2-51A-H9B	08/26/86	CLR		1	
F1.01.118	2-53A-H27C	08/27/86	CLR		1	
F1.01.120	2-53A-H28C	08/27/86	CLR		1	
F1.01.124	2-53A-H8B	09/10/86	CLR		1	
F1.02.001	2-01A-H1	09/17/86	REC		1	
F1.02.002	2-01A-H2	08/28/86	REC		1	
F1.02.003	2-01A-H3	08/28/86	REC		1	
F1.02.005	2-01A-H5	09/15/86	REC		1	
F1.02.011	2-01A-H11	09/18/86	REC		1	
F1.02.016	2-01A-H16	08/28/86	REC		1	
F1.02.018	2-01A-H18	07/18/86	REC		1	
F1.02.019	2-01A-H19	09/25/86	REC		1	
F1.02.041	2-01A-DE060	08/28/86	REC		1	
F1.02.103	2-03-H4B	09/10/86	REC		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: CCONEE 2  
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DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.02.106	2-03-H7B	09/10/86	REC		1	
F1.02.111	2-03-H12A	09/17/86	REC		1	
F1.02.114	2-03-H15A	09/17/86	REC		1	
F1.02.118	2-03-H2A	09/10/86	CLR		1	
F1.02.120	2-03-H4A	09/02/86	REC		1	
F1.02.122	2-03-H6A	09/10/86	CLR		1	
F1.02.123	2-03-H7A	09/11/86	CLR		1	
F1.02.124	2-03-H8A	09/10/86	REC		1	
F1.02.206	2-53B-R5	09/25/86	CLR		1	
F1.02.207	2-53B-H10	09/22/86	CLR		0	
F1.02.208	2-51A-SR59	09/22/86	REC		0	
F1.02.225	2-54A-R43	07/10/86	CLR		1	
F1.02.226	2-54A-R2-7	07/08/86	REC		1	
F1.02.227	2-54A-DE15	07/08/86	REC		1	
F1.02.228	2-54A-DE14	07/08/86	REC		1	
F1.02.229	2-53B-H52	07/08/86	CLR		1	
F1.02.230	2-53B-DE020	07/08/86	CLR		1	
F1.02.232	2-53B-R67	07/28/86	REC		1	
F1.02.240	2-53B-DE009	07/01/86	REC		1	
F1.02.244	2-54A-R42	07/18/86	CLR		1	
F1.02.245	2-54A-DE01	07/28/86	REC		1	
F1.02.246	2-54A-R2-2	07/09/86	REC		1	
F1.02.251	2-53B-H71	07/08/86	REC		1	
F1.02.256	2-53B-DE019	06/26/86	REC		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.02.257	2-53B-DE016	06/26/86	REC		1	
F1.02.262	2-53B-DE010	06/27/86	CLR		1	
F1.02.265	2-53B-H8	07/17/86	REC		1	
F1.02.266	2-53B-H14	07/29/86	CLR		1	
F1.02.270	2-53B-H18	07/02/86	REC		1	
F1.02.271	2-53B-DE017	06/30/86	REC		1	
F1.02.275	2-53B-H6(A)	08/08/86	CLR		1	
F1.02.279	2-53B-H8	07/29/86	REC		1	
F1.02.280	2-53B-H63	07/29/86	REC		1	
F1.02.283	2-53B-R34	07/29/86	CLR		1	
F1.02.285	2-53B-R10	09/18/86	CLR		1	
F1.02.290	2-53B-127	07/17/86	CLR		1	
F1.02.291	2-53B-R6	07/16/86	CLR		1	
F1.02.335	2-53B-H26	07/16/86	CLR		1	
F1.02.340	2-53B-R12	07/16/86	CLR		1	
F1.02.341	2-53B-H60	07/18/86	CLR		1	
F1.02.342	2-53B-R11	09/18/86	CLR		1	
F1.02.343	2-53B-H16	07/29/86	REC		1	
F1.02.345	2-53B-H13	07/29/86	CLR		1	
F1.02.347	2-53A-H3B	09/17/86	REC		1	
F1.02.362	2-54B-H13B	08/26/86	CLR		1	
F1.02.363	2-54B-H12B	08/26/86	REC		1	
F1.02.364	2-54B-H11B	08/27/86	CLR		1	
F1.02.366	2-54B-H9B	08/27/86	CLR		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.02.386	2-54B-H2493	09/12/86	CLR		1	
F1.02.387	2-54B-H2494	09/12/86	CLR		1	
F1.02.388	2-54B-H2495	09/12/86	CLR		1	
F1.02.389	2-54B-H2496	09/12/86	CLR		1	
F1.02.390	2-54B-H2497	09/12/86	CLR		1	
F1.02.391	2-54B-H15A	08/27/86	CLR		1	
F1.02.392	2-54B-H14A	08/27/86	CLR		1	
F1.02.393	2-54B-H13A	08/27/86	REC		1	
F1.02.397	2-54B-H9A	09/11/86	REC		1	
F1.02.398	2-54B-H8A	09/11/86	REC		1	
F1.02.402	2-54B-H4A	09/12/86	REC		1	
F1.02.403	2-54B-H3A	09/12/86	CLR		1	
F1.02.405	2-54B-H1901	09/12/86	CLR		1	
F1.02.406	2-54B-H1902	09/12/86	CLR		1	
F1.02.408	2-54B-H1904	09/12/86	CLR		1	
F1.02.410	2-54B-H1906	09/12/86	CLR		1	
F1.02.411	2-54B-H1907	09/12/86	CLR		1	
F1.02.412	2-54B-H1908	09/12/86	CLR		1	
F1.02.425	2-54B-H1973	09/12/86	CLR		1	
F1.02.426	2-54B-H1974	09/12/86	REC		1	
F1.02.428	2-54A-R101	07/18/86	CLR		1	
F1.02.429	2-54A-H50	07/10/86	CLR		1	
F1.02.434	2-54A-H1	07/18/86	CLR		1	
F1.02.435	2-54A-H3	07/18/86	REC		1	

PROGRAM: RUN7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
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DUKE POWER COMPANY  
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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.02.437	2-54A-R3	07/31/86	REC		1	
F1.02.439	2-54A-H27	08/08/86	REC		1	
F1.02.440	2-54A-R2	08/08/86	REC		1	
F1.02.467	2-54A-R43	09/17/86	REC		1	
F1.02.470	2-54A-H19	07/31/86	CLR		1	
F1.02.471	2-54A-R1	09/18/86	REC		1	
F1.02.472	2-54A-H17	07/16/86	CLR		1	
F1.02.476	2-54A-DE018	09/18/86	CLR		1	
F1.02.479	2-54A-H25A	09/18/86	CLR		1	
F1.02.483	2-54B-H15B	08/27/86	REC		1	
F1.02.501	2-55-DE001	09/17/86	CLR		1	
F1.02.536	2-56-DE001	09/17/86	REC		1	
F1.02.557	2-03-GEN.2A-7	09/05/86	CLR		1	
F1.02.565	2-03-GEN.2B-7	09/05/86	CLR		1	
F1.03.003	2-01A-R17	09/22/86	CLR		1	
F1.03.016	2-01A-R20	09/22/86	CLR		1	
F1.03.017	2-01A-DE034	09/10/86	CLR		1	
F1.03.018	2-01A-R23	09/25/86	REC		1	
F1.03.019	2-01A-H6	09/09/86	REC		1	
F1.03.020	2-01A-R22	09/22/86	CLR		1	
F1.03.021	2-01A-DE071	09/22/86	CLR		1	
F1.03.052	2-03-H52	09/18/86	CLR		1	
F1.03.055	2-03-H50	09/25/86	REC		1	
F1.03.061	2-03-H60	08/01/86	REC		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.03.101	2-03A-SR13	09/05/86	CLR		1	
F1.03.102	2-03A-0801	07/02/86	CLR		1	
F1.03.103	2-03A-H38	07/10/86	REC		1	
F1.03.104	2-03A-DE034	07/10/86	REC		1	
F1.03.105	2-03A-1215	09/22/86	CLR		1	
F1.03.106	2-03A-SR46	07/10/86	CLR		1	
F1.03.107	2-03A-H58	09/11/86	CLR		1	
F1.03.108	2-03A-H31	09/11/86	CLR		1	
F1.03.120	2-03A-H23	09/17/86	CLR		1	
F1.03.121	2-03A-R60	07/14/86	CLR		1	
F1.03.122	2-03A-H21	07/16/86	CLR		1	
F1.03.123	2-03A-SR53	07/03/86	REC		1	
F1.03.124	2-03A-H34	06/26/86	REC		1	
F1.03.125	2-03A-H35A	06/26/86	REC		1	
F1.03.137	2-03A-SR29	07/09/86	REC		1	
F1.03.138	2-03A-0803	06/30/86	REC		1	
F1.03.139	2-03A-0804	06/30/86	REC		1	
F1.03.161	2-03A-DE015	07/02/86	REC		1	
F1.03.162	2-03A-DE014	09/25/86	CLR		1	
F1.03.163	2-03A-SR9	07/02/86	REC		1	
F1.03.164	2-03A-DE012	09/05/86	CLR		1	
F1.03.165	2-03A-SR10	09/18/86	REC		1	
F1.03.166	2-03A-DE011	09/05/86	CLR		1	
F1.03.169	2-03A-DE009	07/03/86	REC		1	

PROGRAM: RUN07179-QAISI04  
FILE: C007153  
PLANT: OCONEE 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.03.170	2-03A-DE001	07/03/86	REC		1	
F1.03.171	2-03A-DE035	08/21/86	CLR		1	
F1.03.200	2-03A-H15	07/14/86	REC		1	
F1.03.201	2-03A-H41	07/17/86	REC		1	
F1.03.202	2-03A-SR38	08/21/86	CLR		1	
F1.03.203	2-03A-H51	09/11/86	REC		1	
F1.03.218	2-03A-H14	09/18/86	REC		1	
F1.03.219	2-03A-SR12	09/10/86	REC		1	
F1.03.220	2-03A-H13	09/10/86	REC		1	
F1.03.221	2-03A-SR11	09/10/86	CLR		1	
F1.03.222	2-03A-H12	09/10/86	CLR		1	
F1.03.232	2-03A-SR8	09/18/86	REC		1	
F1.03.233	2-03A-H7	07/17/86	REC		1	
F1.03.234	2-03A-SR26	07/01/86	REC		1	
F1.03.235	2-03A-H28	07/07/86	REC		1	
F1.03.236	2-03A-SR27	07/01/86	REC		1	
F1.03.245	2-03A-H18	07/31/86	CLR		1	
F1.03.246	2-03A-SR5	07/31/86	REC		1	
F1.03.247	2-03A-H5	07/16/86	REC		1	
F1.03.248	2-03A-H4	09/11/86	REC		1	
F1.03.249	2-03A-H3	07/25/86	REC		1	
F1.03.250	2-03A-SR4	07/25/86	REC		1	
F1.03.273	2-03A-H38	08/21/86	CLR		1	
F1.03.274	2-03A-SR33	07/08/86	REC		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
KEY: ITEM NUMBER

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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.03.275	2-03A-SR32	07/01/86	REC		1	
F1.03.276	2-03A-SR104	07/09/86	REC		1	
F1.03.277	2-03A-H71	07/09/86	CLR		1	
F1.03.278	2-03A-H70	07/01/86	CLR		1	
F1.03.279	2-03A-H72	07/07/86	REC		1	
F1.03.280	2-03A-H73	07/10/86	REC		1	
F1.03.288	2-03A-H76	06/27/86	REC		1	
F1.03.289	2-03A-H77	07/01/86	CLR		1	
F1.03.290	2-03A-H108	07/09/86	REC		1	
F1.03.291	2-03A-H78	07/08/86	REC		1	
F1.03.292	2-03A-H79	06/30/86	CLR		1	
F1.03.293	2-03A-H107	07/08/86	REC		1	
F1.03.306	2-03A-SR55	09/08/86	REC		1	
F1.03.307	2-03A-H100	06/30/86	CLR		1	
F1.03.308	2-03A-H121	07/03/86	CLR		1	
F1.03.309	2-03A-H91	06/26/86	CLR		1	
F1.03.310	2-03A-H92	07/07/86	REC		1	
F1.03.311	2-03A-SR15	09/08/86	REC		1	
F1.03.312	2-03A-H32	06/26/86	REC		1	
F1.03.313	2-03A-SR52	09/08/86	CLR		1	
F1.03.314	2-03A-H95	07/08/86	REC		1	
F1.03.315	2-03A-H94	06/30/86	CLR		1	
F1.03.379	2-07A-H63	07/17/86	CLR		1	
F1.03.380	2-07A-H72	06/27/86	CLR		1	

PROGRAM: RUND7179-QAISI04  
FILE: C007133  
PLANT: OCONEE 2  
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ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.03.381	2-07A-H62	06/27/86	REC		1	
F1.03.382	2-07A-H73	07/07/86	REC		1	
F1.03.383	2-07A-H77	07/03/86	REC		1	
F1.03.384	2-07A-H75	07/03/86	CLR		1	
F1.03.385	2-07A-H17	06/30/86	REC		1	
F1.03.395	2-07A-H50	07/03/86	REC		1	
F1.03.396	2-07A-H51	06/30/86	REC		1	
F1.03.397	2-07A-H52	07/07/86	CLR		1	
F1.03.398	2-07A-H53	07/03/86	REC		1	
F1.03.399	2-07A-H54	07/08/86	REC		1	
F1.03.400	2-07A-H55	07/07/86	CLR		1	
F1.03.401	2-07A-H56	06/30/86	REC		1	
F1.03.402	2-07A-H57	07/08/86	REC		1	
F1.03.403	2-07A-H58	07/08/86	CLR		1	
F1.03.404	2-07A-DE012	07/03/86	CLR		1	
F1.03.452	2-08-H2	09/05/86	REC		1	
F1.03.454	2-08-H3	07/08/86	REC		1	
F1.03.475	2-14B-H5188	07/25/86	REC		1	
F1.03.476	2-14B-H5187	07/25/86	CLR		1	
F1.03.477	2-14B-2001	07/25/86	CLR		1	
F1.03.478	2-14B-1601	07/25/86	CLR		1	
F1.03.479	2-14B-DE110	07/15/86	CLR		1	
F1.03.480	2-14B-SR5	07/15/86	CLR		1	
F1.03.481	2-14B-DE108	07/15/86	CLR		1	

PROGRAM: RUND7179-QAISI04  
FILE: C807133  
PLANT: OCONEE 2  
KEY: ITEM NUMBER

DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
PRE-SERVICE AND IN-SERVICE INSPECTION SYSTEM  
OCONEE 2 INSERVICE INSPECTION RESULTS OUTAGE 8

PAGE 20  
12/09/86

ITEM NUMBER	ID NUMBER	INSPECTION DATE	INSPECTION STATUS	INSPECTION LIMITED	TIMES TESTED	*----- COMMENTS -----*
F1.03.482	2-14B-DE107	07/14/86	CLR		1	
F1.03.483	2-14B-SR6	07/14/86	CLR		1	
F1.03.484	2-14B-DE106	07/14/86	CLR		1	
F1.03.517	2-03A-1104	06/30/86	CLR		1	
F1.03.535	2-03A-H99	07/03/86	REC		1	
F1.03.536	2-03A-H105	07/08/86	CLR		1	
F1.03.537	2-03A-H5181	09/17/86	REC		1	
F1.03.543	2-03A-H22	06/27/86	REC		1	
F1.03.553	2-03A-H24	07/09/86	REC		1	
F1.03.554	2-03A-H23	07/08/86	REC		1	
F1.03.560	2-03A-SR34(A)	07/03/86	CLR		1	
F1.03.565	2-03A-DE026	06/26/86	CLR		1	

\*\*\* THERE WERE 444 TOTAL RECORDS \*\*\*  
\*\*\* SELECTED FOR UNIT 2 \*\*\*  
\*\*\*\*\*

## 5.0 Class 1 Inspection Results

Examinations were performed during Outage 8 on the Reactor Vessel, Pressurizer, Letdown Cooler 2A, Primary Coolant, Pressurizer Surge and Core Flood System Piping.

### 5.1 Reactor Vessel

Reactor Closure Head Lugs located at Y-axis, between W-X axis and between W-Z axis received a magnetic particle examination. Reportable indications were found on the base metal of lifting lug located at Y-axis (Item Number B08.010.001). An Engineering Evaluation was performed and results indicated lifting lug was acceptable for continued service. (Refer to Engineering Evaluation Letter, S. B. Hager to M. S. Tuckman, Oconee Nuclear Station, dated September 16, 1986, included in Section 10 of this report.) The inspection data sheet is included in this section of the report. No other reportable indications were found.

Control Rod Drive Number 60, Housing Body Weld, Base to Motor Tube, and Motor Tube to Extension received dye penetrant examinations. No reportable indications were found.

Control Rod Drive Housings Numbers 1 and 60, Bolts and Nut Rings received a visual examination. No reportable indications were found.

### 5.2 Pressurizer

Reportable indications in the Pressurizer Lower Head to Heater Bundle Weld (Item Number B02.011.006) detected during Outage 6 were re-examined by ultrasonics during Outage 8 per ASME Section XI, Paragraph IWB-3122.4 (B). Indications were found and compared to reported indications detected during Outage 6. (Refer to Babcock and Wilcox Fracture Mechanics Analysis Report 32-1148321-00 and Babcock and Wilcox Reference Document I.D. Number 57-1124564-00 included in Section 10 of this report.) Evaluation indicated no weld indication growth since Outage 6, and therefore, declared acceptable.

Reportable indications detected during Outage 6 on five (5) Pressurizer Support Lugs, located at X-axis, at Z-axis, between Z-W axis, at W-axis and between W-X axis were re-examined during Outage 8 by magnetic particle inspection. Reportable indications were found on support lug welds located between Z-W axis and W-X axis (Item Numbers B08.020.006 and B08.020.008, respectively). Indications were determined acceptable after grinding and re-inspection by magnetic particle examinations, as indicated on Nonconforming Item Reports 0-1905 and 0-1916. Three (3) additional support lugs, located at Y-axis, between X-Y axis, and between Y-Z axis received a magnetic particle inspection, as required by ASME Section XI, Paragraph IWB-2430. No reportable indications were found. Outage 8 inspection data sheets for support lugs reportable indications are included in this section of the report. Nonconforming Item Reports 0-1905 and 0-1916 are included in Section 9 of this report. No other reportable indications were found.

Pressurizer Surge Line Nozzle Safe-end Butt Weld received ultrasonic and dye penetrant examinations. No reportable indications were found.

### 5.3 Letdown Coolers

Letdown Cooler 2A Inlet Nozzle to Channel Head Weld and Inlet Nozzle inside radius received an ultrasonic examination. No reportable indications were found.

### 5.4 Piping

Dissimilar Metal Butt Welds:

Two (2) welds, nominal pipe size four inches and greater, received ultrasonic and dye penetrant examination. No reportable indications were found.

Two (2) welds, nominal pipe size less than four inches, received a dye penetrant examination. No reportable indications were found.

Similar Metal Butt Welds:

Twelve (12), circumferential welds nominal pipe size four inches and greater, received a volumetric and surface examination. Four (4) longitudinal welds received a volumetric and surface examination. No reportable indications were found.

Piping Supports:

Nineteen (19) hangers were examined by visual methods. No reportable indications were found.

### 5.5 Pumps

Reactor Coolant Pumps 2A1 and 2B2 Flange Surfaces received visual examinations. No reportable indications were found.

### 5.6 Valves

Bolting on three (3) valves received a visual examination. No reportable indications were found.

### 5.7 Steam Generator Tubing

The tubing in both steam generators were inspected by eddy current using the standard bobbin-coil technique.

#### OSTG-2A

2219 tubes were examined using the standard bobbin-coil technique. Two (2) tubes contained wall-loss indications of 20% to 40% through wall. Twenty-eight (28) tubes exhibited indications with a low signal-to-noise ratio or less than 20% through wall.

No tubes were plugged.

OSTG-2B

2396 tubes were examined using the standard bobbin-coil technique. Six (6) tubes contained wall-loss indications of 20% to 40% through wall. One hundred twenty (120) tubes exhibited indications with a low signal-to-noise ratio or less than 20% through wall.

No tubes were plugged.

Indications equal to or greater than 20% through wall are shown in this section of the report.

5.8 Inservice Leakage Tests

The Class 1 Pressure Boundary was subjected to an inservice leakage test as required by ASME Section XI, Article IWB-5000. No reportable indications were found.

5.9 Class 1 Repairs and Replacements

Repairs and replacements for work performed from June 5, 1985 to October 15, 1986 are itemized in Section XI of this report.

OTSG-2A

TUBES WITH INDICATIONS 20% - 100% TW

<u>TUBE</u>	<u>LOCATION</u>	<u>% TW</u>	<u>TYPE</u>
108-118	14th TSP	35	WEAR
137-16	UTSF - 2.6"	34	OD INDICATION

OTSG-2B

TUBES WITH INDICATIONS 20% - 100% TW

<u>TUBE</u>	<u>LOCATION</u>	<u>% TW</u>	<u>TYPE</u>
47-51	12th TSP	34	OD INDICATION
	12th TSP	30	OD INDICATION
73-44	1st TSP + 1.2"	25	ID INDICATION
75-32	UTSF + 16.7"	25	OD INDICATION
77-3	15th TSP	30	WEAR
77-7	15th TSP	38	WEAR
77-17	12th TSP - 0.6"	26	OD INDICATION
	15th TSP	38	WEAR

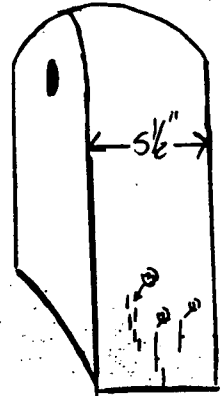
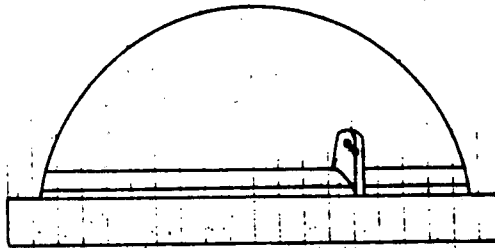
## DUKE POWER COMPANY

PROJECT OconeMAGNETIC PARTICLE/LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTIONWeld No. 2RPV-HD-LUG-A Item No. B08.010.001 Unit No. 2Pipe Diameter 0 Remarks: \_\_\_\_\_Wall Section Thickness 5.625Date 9-6-86  
NDE Proc. 25 Rev. 8

NDE Inspectors/Level

DLR I II//////

SKETCH OF ITEM INSPECTED



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents
<u>1</u>	<u>LINEAR</u>	<u>1 1/2"</u>	<u>1/32"</u>		<u>✓</u>	<u>NDE-25</u>
<u>2</u>	<u>LINEAR</u>	<u>1 1/8"</u>	<u>1/32"</u>		<u>✓</u>	<u>NDE-25</u>
<u>3</u>	<u>LINEAR</u>	<u>1 5/8"</u>	<u>1/32"</u>		<u>✓</u>	<u>NDE-25</u>

MT Unit Serial OCQA-043MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular☐ Direct Contact Amp \_\_\_\_\_☐ Central Conductor Amp \_\_\_\_\_☒ Yoke☐ Prod☐ Longitudinal Amp Turns \_\_\_\_\_☐ Wet Particle Batch No. \_\_\_\_\_Dry Particle Batch No. 843067

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ NonfluorescentComments: Indication (1) is 2 3/8" From edge 1" From bottom of lug.Indication (2) starts at edge of weld. Indication (3) is app. 1/2" FromIndication (1). SEE SECTIONS 9-12 OF NCI 0-1978ANI Review R & E, J. H. H. H. Date 9-25-86 Final QA Review J. R. Hunt Date 9-25-86

DUKE POWER COMPANY

PG 1 OF 2

PROJECT OconeeMAGNETIC PARTICLE/LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTIONWeld No. 2PZR-WP82-ZW Item No. B08.020.006 Unit No. 2Pipe Diameter 0 Remarks: \_\_\_\_\_Wall Section Thickness 3.500Date 8-26-86  
NDE Proc. 25 Rev. 8

NDE Inspectors/Level

DLR / IIJWS / I

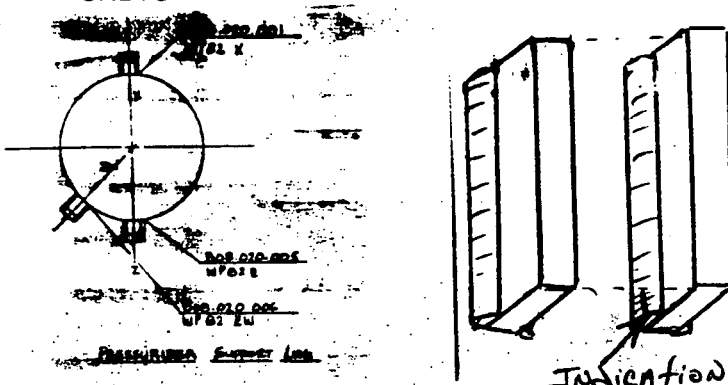
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## SKETCH OF ITEM INSPECTED



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents
<u>1</u>	<u>LINEAR</u>	<u>1.0"</u>	<u>1/16"</u>		<u>✓</u>	

MT Unit Serial OCQA-43MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular☐ Direct Contact Amp \_\_\_\_\_☐ Central Conductor Amp \_\_\_\_\_☒ Yoke☐ Prod☐ Longitudinal Amp Turns \_\_\_\_\_☐ Wet Particle Batch No. \_\_\_\_\_Dry Particle Batch No. 85K005 84K005

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ NonfluorescentComments: Drawing shows top plate removed only for  
ease of showing indications.Bottom portion of legs inaccessible

ANI Review

A. F. ElginDate 9-9-86

Final QA Review

J. R. HuntDate 9-8-86

DUKE POWER COMPANY  
PROJECT OCONEE

PG 2 OF 2

MAGNETIC PARTICLE/LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTION

Weld No. 2P2R-WP82-ZW Item No. B08-020-006 Unit No. 2

Pipe Diameter Ø Remarks: \_\_\_\_\_

Wall Section Thickness 3.500

Date 9-6-86

NDE Proc. 25 Rev. 8

NDE Inspectors/Level

DCR 1 II

WY 1 I

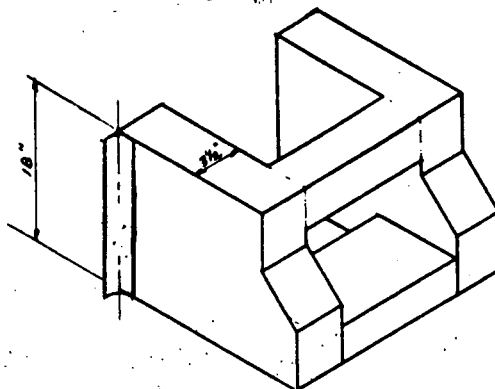
RFB 1 I

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SKETCH OF ITEM INSPECTED



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents

MT Unit Serial CCQA-043

MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular

☐ Direct Contact Amp \_\_\_\_\_

☐ Central Conductor Amp \_\_\_\_\_

☒ Yoke

☐ Prod

☐ Longitudinal Amp Turns \_\_\_\_\_

☐ Wet Particle Batch No. \_\_\_\_\_

Dry Particle Batch No. 84B067

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ Nonfluorescent

Comments: INDICATION CLEARED BY GRINDING NO  
RECORDABLE INDICATIONS FOUND U.T. OK DCR 9-6-86

ANI Review

R F Elgin ANI/ANI

Date 9-9-86

Final QA Review

J R Hunt

Date 9-8-86

DUKE POWER COMPANY  
PROJECT Oconee

PG 1 OF 2

MAGNETIC PARTICLE/LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTION

Weld No. 2PZR-WP82-WX Item No. B08.020.008 Unit No. 2

Pipe Diameter 0 Remarks: \_\_\_\_\_

Wall Section Thickness 3.500

Date 9-4-86  
NDE Proc. 25 Rev. B

NDE Inspectors/Level

ADG I II

JW Sitzer I

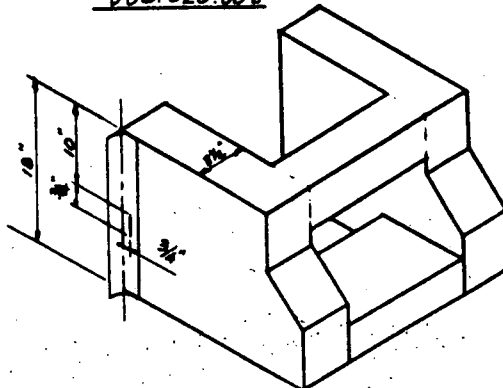
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B08.020.008

SKETCH OF ITEM INSPECTED



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents
<u>1</u>	<u>LINEAR</u>	<u>.750</u>	<u>.0312</u>		<u>✓</u>	<u>NDE 25-Rev. B</u>

MT Unit Serial OCQA-043

MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular

☐ Direct Contact Amp \_\_\_\_\_

☐ Central Conductor Amp \_\_\_\_\_

☒ Yoke

☐ Prod

☐ Longitudinal Amp Turns \_\_\_\_\_

☐ Wet Particle Batch No. \_\_\_\_\_

Dry Particle Batch No. B5K005

Serial No. Light Meter ADG 2906

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number \_\_\_\_\_

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ Nonfluorescent

Comments: NO Reportable Indications found.

BOTTOM PORTABLE PORTION OF LOGS INACCESSIBLE-ADG 9-4-86

ANI Review PT Elgin AND/AND

Date 9-9-86

Final QA Review STR Hunt

Date 9-9-86

PG 2 OF 2

Final QA Review H. R. Hunt Date 9-8-82

## 6.0 Class 2 Inspection Results

Inspections were performed on the Class 2 portion of Steam Generators 2A and 2B, Core Flood Tank 2A and piping systems.

### 6.1 Steam Generators

Steam Generator 2A Nozzle Belt to Shell Weld received a volumetric examination. No reportable indications were found.

Steam Generator 2A Feedwater Header Attachment Weld located in Z-W quadrant near Z-axis and Steam Generator 2B Feedwater Attachment Weld located in X-Y quadrant near X-axis received a magnetic particle examination. No reportable indications were found.

Core Flood Tank 2A Support Attachment X-axis received a magnetic particle examination. No reportable indications were found.

### 6.2 Piping

Twenty-six (26) circumferential welds one-half inch and less nominal wall thickness received a dye penetrant examination. No reportable indications were found.

Five (5) circumferential welds greater than one-half inch nominal wall thickness received a radiographic and magnetic particle inspection. No reportable indications were found.

One (1) branch connection circumferential weld received a dye penetrant examination. No reportable indication were found.

### 6.3 Class 2 Component Supports

Ninety-six (96) hangers were examined by visual methods. No reportable indications were found.

### 6.4 System or Component Functional Test

A Class 2 Functional Test was performed as required by ASME Section XI, Article IWC-5000. No reportable indications were found.

### 6.5 Class 2 Repairs and Replacements

Repairs and replacements for work performed from June 5, 1985 to October 15, 1986 are itemized in Section 11 of this report.

## 7.0 Augmented Inspection Results

Augmented inspections were performed on Reactor Coolant Pump Flywheels, High Pressure Injection and Makeup Nozzle Safe-ends, Core Flood Tank 2A Dump Valve Flange to Head Weld, and Core Flood Tank 2A Support Attachment Weld.

### 7.1 Reactor Coolant Pump Flywheels

Reactor Coolant Pumps 2A1, 2A2, 2B1 and 2B2 Flywheels received an ultrasonic examination in place. No reportable indications were found.

### 7.2 High Pressure Injection and Makeup Nozzle Safe-ends

2A1 and 2A2 Makeup Nozzle Safe-ends received an ultrasonic and radiographic inspection. No reportable indications were found.

2B1 High Pressure Injection Nozzle Safe-end received a radiographic inspection. No reportable indications were found.

2B2 High Pressure Injection Nozzle Safe-end received an ultrasonic and radiographic inspection. No reportable indications were found.

### 7.3 Core Flood Tank 2A Dump Valve Flange to Head

Reportable indications in Core Flood Tank 2A Dump Valve Flange to Head Weld (Item Number E05.001.001) detected during Outage 6 were re-examined by ultrasonics during Outage 8 per ASME Section XI, Paragraph IWC-2420 (b). Indications were found during Outage 8 and were compared to reported indications detected during Outage 6. (Refer to evaluation letter, S. B. Hager to G. W. Hallman, dated October 31, 1986, Duke Power Company, Design Engineering Inservice Inspection Evaluations calculation OSC-2287, and Nuclear Energy Service's letter by Zane Dargaty to Mr. C. B. Cheezem, Duke Power Company, dated October 2, 1986, included in Section 10 of this report.) Evaluation indicated no weld indication growth since Outage 6 and, therefore, declared acceptable for the remainder of plant life.

### 7.4 Core Flood Tank 2A Support Attachment

Reportable indications on Core Flood Tank 2A Support Attachment W-axis found during Outage 6 were re-examined by magnetic particle inspection during Outage 8 as required by ASME Section XI, Paragraph IWC-2420 (b). No reportable conditions were found.

## 8.0 Personnel, Equipment, and Material Certification

All personnel who performed or evaluated results of inservice inspections during Outage 8 at Oconee 2 were certified in accordance with the requirements of the 1980 ASME Section XI with addenda through Winter 1980. The appropriate certification record for each Duke Power Company inspector is on file at Oconee Nuclear Station. The certification records for the Babcock and Wilcox inspectors are on file at the Babcock and Wilcox offices in Lynchburg, Virginia.

Records of periodic calibration of Babcock and Wilcox inspection equipment is on file at the Babcock and Wilcox offices in Lynchburg, Virginia. Records of periodic calibration of Duke inspection equipment is on file at Oconee Nuclear Station or in the Corporate Offices in Charlotte, North Carolina.

## 9.0 Nonconforming Item Reports

A copy of each nonconforming item report related to the inservice inspection during Outage 8 at Oconee 2 is included in this section. All were resolved and found acceptable by Duke Power's Quality Assurance Department before returning Unit 2 to service. The following nonconforming item reports were issued:

<u>NCIR No.</u>	<u>Description</u>	<u>Date Issued</u>
0-1905	Reportable Indication Pressurizer Support Lug	08-27-86
0-1916	Reportable Indication Pressurizer Support Lug	09-04-86
0-1918	Reportable Indication Reactor Vessel Head Lug	09-08-86

QA DCPM  
Procedure No. QCK-1ENCLOSURE 5.1  
DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
OPERATIONS DIVISION  
NONCONFORMING ITEM REPORT

Page 1 of 2

QA Condition 21Department Responsible for Resolution NPD

PL 8-27-86

Serial No. 0-1905To CRAIGHARTINCRAIG HARTINFrom R. J. BRACKETT8-27-86

Date

Please Complete Section 9 and Return to QA by 9-26-86 10-8-86

## 1. Description of Nonconformance (Requirements not met, how and when discovered, etc.)

While doing a M-T. ON ITEM # BOE-020.006  
(Lug on ZPZR) IT WAS DISCOVERED A REPORTABLE  
INDICATION APP. 1" LONG IN THE CENTER OF THE  
WELD COMING OUT OF THE JOE.

\* See ATTACHED

NDE ZSA FORM.

\* RESOLVE PRIOR TO STARTUP.

Operability Review Required ☐ Yes ☒ NoBy P. Z. Blum Date 8/27/862. Documents Violated NDE-ZS3. Location of Nonconformance REA Bldg. UNIT 2 (B-CAD.)4. Work Stoppage Notification (Form QCK-2A) Written ☐ Yes ☒ No; Serial No. \_\_\_\_\_5. QA Nonconformance Item Tag No. NA6. Method Used To Identify Nonconformance QCK-1A FORM7. Originated By D. L. RobinsonDate 8-27-868. Approved By P. Z. BlumDate 8/27/86

Distribution:

TREND CODE: HNPT

	Compliance Eng.	Tech. Serv. QA	NCI Originator	B. Cheezem	E. R. Baldwin	R. J. Brackett	R. Elgin
Page 1	X <u>PL 8-27-86</u>		X	X	Y	X	X
Page 2							

## DUKE POWER COMPANY

PROJECT OconeeMAGNETIC PARTICLE / LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTION

Weld No. 2PZR-WP82-ZW Item No. B08.020.006 Unit No. 2  
 Pipe Diameter 0 Remarks: \_\_\_\_\_  
 Wall Section Thickness 3.500

Date 8-26-86  
 NDE Proc. 25 Rev. 8

NDE Inspectors/Level

DLR / IIJWS / I

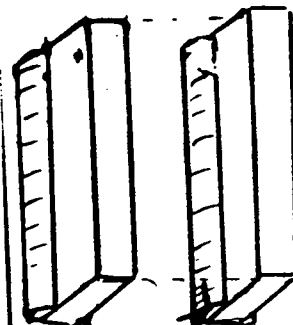
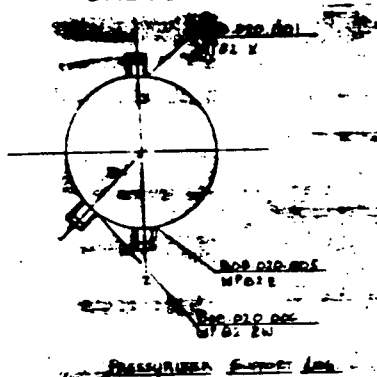
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## SKETCH OF ITEM INSPECTED



INDICATION

Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents
<u>1</u>	<u>LINEAR</u>	<u>1.0"</u>	<u>1/16"</u>		<u>✓</u>	

MT Unit Serial OCQA-43MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular☐ Direct Contact Amp \_\_\_\_\_☐ Central Conductor Amp \_\_\_\_\_☒ Yoke☐ Prod☐ Longitudinal Amp Turns \_\_\_\_\_☐ Wet Particle Batch No. \_\_\_\_\_Dry Particle Batch No. 85K005 84K005

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number \_\_\_\_\_

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ NonfluorescentComments: Drawing shows top plate removed only for  
ease of showing indications.

Bottom portion of lugs inaccessible  
 ANI Review \_\_\_\_\_ Date \_\_\_\_\_ Final QA Review \_\_\_\_\_ Date \_\_\_\_\_

## NONCONFORMING ITEM REPORT

NCL Serial No.

0-1905

CIPR-202) Applicable (Design Eng. Only)  
Potentially Reportable To NRC☐ Yes  
☒ No☐ Yes  
☒ No

Determined By

Bailly Camp

Date 9/11/86

## 9. Proposed Resolution of Deficiency (include the date action is to be completed)

Additional surface preparation by grinding should be done to remove scale and weld reinspected, to be completed by 9-7-86. If rejectable indications is still present Section XI repair procedures will be initiated to include grinding, welding and PWHT by 9-10-86.

Other Approved

Date

Approved

CA

Date

Approved

Date

## 10. Action (As per Section 9) Completed

Additional surface preparation was performed grinding was limited to less than 1/16 inch

Approved

C.R. Henson 9-16-86

Date

## 11. Inspection/Surveillance Requirements

Item shall be re-inspected using magnetic particle procedure NDE 25

Assigned To

QC - NDE

Date

9-16-86

## 12. Inspection/Surveillance Results

Re-inspection revealed no reportable indications NDE 25A attached

Completed By

RPB

Date

9-6-86

CA Approval

C.R. Henson 9-16-86

Date

## 13. 10CFR50 Appendix B, Criterion XVI Evaluation

N/A

Approved

Date

## 14. Corrective Action Completed (As per Section 13)

N/A

Approved

Date

## 15. CA Verification of Corrective Action as Stated in Section 14

N/A

Completed By

Date

Remarks

Verbal approval for section 9 by Daniel A. Henson and WR Hunt 9-6-86

Final Approval

C.R. Henson

Date

9-16-86

QA

**DUKE POWER COMPANY**  
**PROJECT Oconee**

**MAGNETIC PARTICLE / LIQUID PENETRANT EXAMINATION REPORT**  
**FOR PRESERVICE AND INSERVICE INSPECTION**

Weld No. 2P2R-1WP82-Z1W Item No. BCE-C2C-C06 Unit No. 2

Pipe Diameter Ø Remarks: \_\_\_\_\_

Wall Section Thickness 3.500

Date 9-6-86

NDE Proc. 25 Rev. 8

**NDE Inspectors/Level**

DLR / I II

yws / I I

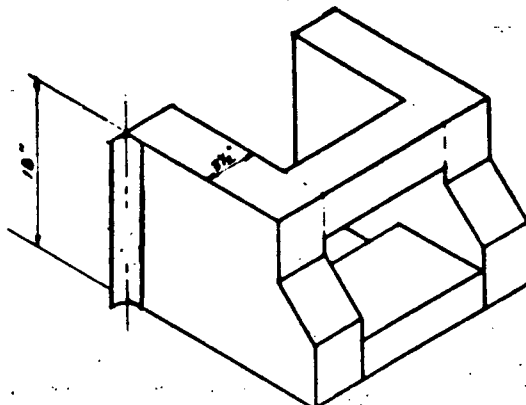
RFB / I I

/

/

/

**SKETCH OF ITEM INSPECTED**



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents

MT Unit Serial OCQA-043

MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular

☐ Direct Contact Amp \_\_\_\_\_

☐ Central Conductor Amp \_\_\_\_\_

☒ Yoke

☐ Prod

☐ Longitudinal Amp Turns \_\_\_\_\_

Particle Batch No. \_\_\_\_\_

Dry Particle Batch No. 84B067

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number \_\_\_\_\_

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ Nonfluorescent

Comments: INDICATION CLEARED BY GRINDING NO  
RECORDABLE INDICATIONS FOUND U.T. OK DLR 9-6-86

ANI Review

R. Y. Elam ANI/ANI

Date

9-9-86

Final QA Review

HRH

Date 9-9-86

QA OCPM  
Procedure No. OCK-1ENCLOSURE 5.1  
DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT

Page 1 of 2

OPERATIONS DIVISION  
NONCONFORMING ITEM REPORTQA Condition 1 2 <sup>CRH 9-8-86</sup>Department Responsible for Resolution NPD / RA 9-8-86 Serial No. 0-1916To Craig Harlin From R.J. BRACKETT 9-4-86  
Charles Baldwin 9-8-86 Senior QA Engineer DatePlease Complete Section 9 and Return to QA by 10-8-86

## 1. Description of Nonconformance (Requirements not met, how and when discovered, etc.)

While doing an M.T. on ITEM # B08-020.008  
(LUG ON ZPZ) IT WAS DISCOVERED A REPORTABLE  
TWO INCH APP 3/4" LONG on THE SIDE OF  
THE WELD. RUNNING PARALLEL WITH THE WELD.

# SEE ATTACHED

NDE 25A FORM

Section 12 MUST be completed <sup>45</sup> PRIOR TO START-UP UNIT 2 RO #8Operability Review Required ☐ Yes ☒ No By Larry Howe Date 9/4/862. Documents Violated NDE 253. Location of Nonconformance REA. Bldg. UNIT 2 (BCAU)4. Work Stoppage Notification (Form OCK-2A) Written ☐ Yes ☒ No: Serial No. \_\_\_\_\_5. QA Nonconformance Item Tag No. N/A6. Method Used To Identify Nonconformance OCK-1A FORM7. Originated By Alan D. Hault Date 9-4-868. Approved By Larry Howe Date 9-5-86Distribution: H2PH

	Compliance Engr.	Tech. Serv. QA	NCI Originator	Best Checkman	Ray Elgin	Dave Whitaker	R.J. Brackett
Page 1	X (2)		X	X	X	X	X
Page 2							

## DUKE POWER COMPANY

PROJECT OconeeMAGNETIC PARTICLE/LIQUID PENETRANT EXAMINATION REPORT  
FOR PRESERVICE AND INSERVICE INSPECTIONWeld No. 2PZR-WP82-WX Item No. B0B.020.008 Unit No. 2Pipe Diameter 0 Remarks: \_\_\_\_\_Wall Section Thickness 3.500Date 9-4-86NDE Proc. 25 Rev. B

NDE Inspectors/Level

ADG / IIJW Sign / I

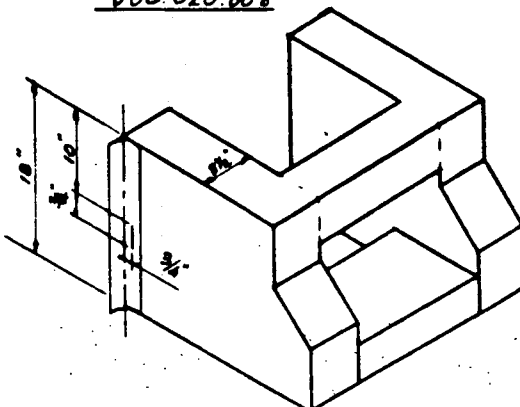
/

/

/

B0B.020.008

SKETCH OF ITEM INSPECTED



Indication Number	Type of Indication	Length/Diameter	Width	Acceptable	Reportable	Reference Documents
<u>1</u>	<u>LINEAR</u>	<u>.750</u>	<u>.0312</u>		<u>✓</u>	<u>NDE 25-Rev. B</u>

MT Unit Serial OCQA-043MT Method ☐ Fluorescent ☒ Nonfluorescent

MT Prepared Bath Batch No.: \_\_\_\_\_

MT Technique Used:

☐ Circular☐ Direct Contact Amp \_\_\_\_\_☐ Central Conductor Amp \_\_\_\_\_☒ Yoke☐ Prod☐ Longitudinal Amp Turns \_\_\_\_\_

Wet Particle Batch No. \_\_\_\_\_

Dry Particle Batch No. B5K005

Serial No. Light Meter \_\_\_\_\_

Serial No. Black Light \_\_\_\_\_

Black Light Intensity Verified

Time \_\_\_\_\_ Date \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_

PT Batch Number

Cleaner \_\_\_\_\_

Penetrant \_\_\_\_\_

Remover \_\_\_\_\_

Developer \_\_\_\_\_

☐ Fluorescent ☐ Nonfluorescent

Comments: \_\_\_\_\_

QA QCPM  
Procedure No. QCK-1

ENCLOSURE 5.1

Page 2 of 2

## NONCONFORMING ITEM REPORT

CIPR-202) Applicable (Design Eng. Only)  
Potentially Reportable To NRC☐ Yes  
☒ No☐ No

Determined By

Basil W. Canoy Date 9/11/86

Serial No. 0-1916

## 9. Proposed Resolution of Deficiency (include the date action is to be completed)

Further surface preparation by grinding should be performed and the weld reinspected. The depth of grinding at the indication should not exceed  $1/16$ " and should be blended in to be completed by 9-7-86. If rejectable indication is still present Section XI repair procedures will be initiated to include grinding, welding and PWHT by 9-10-86.

Other Approved

Date

Approved

QA

Date

Approved BK Andrews

Date 9/12/86

CR Hansen 9/16/86

## 10. Action (As per Section 9) Completed

Surface was ground as prescribed above. Depth did not exceed  $1/16$ "

Approved

CR Hansen 9/16/86

Date

## 11. Inspection/Surveillance Requirements

Re inspect item using magnetic particle procedure NDE 25

Assigned To

QC NDE

Date

9/16/86

## 12. Inspection/Surveillance Results

Item was re-inspected and no reportable indications were detected. NDE 25A attached

Completed By

RPG

9-6-86

Date

QA Approval

CR Hansen 9/16/86

Date

## 13. 10CFR50 Appendix B, Criterion XVI Evaluation

N/A

Approved

Date

## 14. Corrective Action Completed (As per Section 13)

N/A

Approved

Date

## 15. QA Verification of Corrective Action as Stated in Section 14

N/A

Completed By

Date

Remarks

Final approval for section 9 by David Whitbread  
WR Hunt 9-5-86

Final Approval

CR Hansen 9/16/86

QA

Date



QA GCK-1  
Procedure No. GCK-1

ENCLOSURE B.1  
DUKE POWER COMPANY  
QUALITY ASSURANCE DEPARTMENT  
OPERATIONS DIVISION  
NONCONFORMING ITEM REPORT

Page 1 of 2

QA Condition 1

Department Responsible for Resolution NPD / QA 9-8-86 Serial No. 0-1918

To CRAIG HARLIN From R.S. BRACKETT Date 9-8-86  
Charles Baldwin CR 9-8-86 Senior QA Engineer

Please Complete Section 9 and Return to QA by 10-8-86

1. Description of Nonconformance (Requirements not met, how and when discovered, etc.)

While doing A M.T. ON ITEM # BOB.QV.001  
(Lug ON REAC. Vess. Head) IT WAS DISCOVERED REPORTABLE  
INDICATIONS ON THE BASE METAL

\* Resolve PRIOR TO START UP

\* See ATTACHED NDE 25A

Operability Review Required ☐ Yes ☒ No

By C.R. Hanson Date 9-8-86

2. Documents Violated NDE-25

3. Location of Nonconformance REA. Bldg. UNIT 2 (REA. Vess. Head)

4. Work Stoppage Notification (Form GCK-2A) Written ☐ Yes ☒ No; Serial No. \_\_\_\_\_

5. QA Nonconformance Item Tag No. NA

6. Method Used To Identify Nonconformance GCK-1A

7. Originated By D.L. Robinson Date 9-6-86

8. Approved By C.R. Hanson Date 9-8-86

Distribution: TRND Code HNP1

Compliance Eng.	Tech. Serv. QA	MCI Originator	QA 9-8-86	R-Elgin
Page 1	X(2)	X	B Chazum	X
Page 2		X	R. Robinson	X
		X	R. F. Brattin	X
		X	David Whitaker	X

RECEIVED

QA QCPM  
Procedure No. OCK-1

SEP 16 RECD

ENCLOSURE 5.1

Page 2 of 2

## NONCONFORMING ITEM REPORT

NCI Serial No. 0-1918CIPR-2021 Applicable (Design Eng. Only) ☒ Yes ☐ No  
Potentially Reportable To NRC ☒ Yes ☐ NoDetermined By Paul Emory Date 9-11-86

## 9. Proposed Resolution of Deficiency (include the date action is to be completed)

AN ENGINEERING EVALUATION WILL BE PERFORMED  
BY DESIGN ENGINEERING-CIVIL TO ACCEPT THE  
LUG AS IS ON THE BASIS THAT THE LAMINATIONS  
RUN PARALLEL TO THE STRESS. TO BE COMPLETED  
BY 9-19-86 Paul Emory 9-11-86

Other Approved

Date

Approved C.R. HensonDate 9-18-86Approved BK MullinsDate 9/15/86

QA

Date

10. Action (As per Section 9) Completed An evaluation was performed by Design  
Engineering - Civil. Results are attached (W.H. Taylor letter of 9-16-86)  
AC Approved BK Mullins Date 9/19/86

## 11. Inspection/Surveillance Requirements

Verify that engineering evaluation  
has been performed by design and a copy  
is attached to this nci.

Assigned To QA Tech Support - TSTDate 9/18/86

## 12. Inspection/Surveillance Results

Design engineering justification  
attached

Completed By C.R. Henson

Date

CA Approval W.H. TaylorDate 9/13/86

## 13. 10CFR50 Appendix B, Criterion XVI Evaluation

N/A

Approved

Date

## 14. Corrective Action Completed (As per Section 13)

N/A

Approved

Date

## 15. QA Verification of Corrective Action as Stated in Section 14

N/A

Completed By

Date

Remarks Isolated incidentCRHFinal Approval C.R. Henson

QA

Date 9-23-86

## 10.0 Reference Documents

The following reference documents apply to the inservice inspection performed during Outage 8 at Oconee 2:

Babcock and Wilcox Evaluation Report 86-001, dated September 2, 1986.

Babcock and Wilcox Fracture Mechanics Analysis Report Number 32-1148321-00.

Babcock and Wilcox Evaluation Document, I.D. Number 57-1124564-00.

Letter, S. B. Hager to M. S. Tuckman, dated September 16, 1986, Oconee Nuclear Station Unit 2, Reactor Vessel Head Lifting Lug.

Letter, S. B. Hager to G. W. Hallman, dated October 31, 1986, Oconee Nuclear Station, Core Flood Tank ISI, 1986.

Oconee Nuclear Station Inservice Inspection Evaluation, Calculation OSC-2287, dated October 30, 1986.

Nuclear Energy Service's letter from Zane Dargaty to Mr. C. B. Cheezem, dated October 2, 1986.

BABCOCK & WILCOX  
NUCLEAR POWER GENERATION DIVISION  
VOLUMETRIC EXAMINATION EVALUATION REPORT

BWNP-20525-1(11-81)

EVALUATION NUMBER

86-001

METHOD: UT

RT

FILE NO. OR REFERENCE

WELD NO. OR IDENTIFICATION: PZR LOWER HEAD TO HEATER Bundle PC 4/40 To 6

APPLICABLE CODE YEAR AND ADDENDA: ASME SEC. XI 1980 Thru Win '80 Addenda

DATE OF INITIAL EXAMINATION: 27 Aug '86

RE-EXAMINATION:

REPORTABLE INDICATION NUMBER(S): 200, 201, 202, 203

COMMENTS:

ORIGINATOR: Howard Stoppelmann LEVEL: II DATE: 2 Sept 86

PRELIMINARY DISPOSITION

ACCEPTANCE STANDARD: ASME Sect XI 1980 thru Win '80

COMMENTS: All indications compared previous data per ER # 85605, Ref # 0442-A.065, and B&W Doc ID 57-114564-00, & FRACTURE ANALYSIS # 32-1148321-00. Indications 200 thru 203 indicate no growth, therefore they are considered acceptable in accordance with the above mentioned Fracture Analysis Report. Accept Indications 600 thru 602 indicate no growth, therefore they are considered acceptable in accordance with the above mentioned Fracture Analysis Report.

☒ ACCEPTABLE INDICATION NUMBER(S) 200-201-202-203-600-601-602

☐ REJECTABLE INDICATION NUMBER(S)

LEVEL III: George R. Stromer LIII UT DATE: 12 Sept 1986

FRACTURE MECHANICS ANALYSIS

☐ YES

☒ NO

DOCUMENT NUMBER

FINAL DISPOSITION

COMMENTS: As noted above

☒ ACCEPTABLE INDICATION NUMBER(S) 200-201-202-203-600-601-602

☐ REJECTABLE INDICATION NUMBER(S)

LEVEL III: George R. Stromer LIII UT DATE: 12 Sept 1986

FIGURE NO.

802.011.006

*Approved by  
HSA  
9-15-86*

# VOLUMETRIC TEST DATA

BABCOCK & WILCOX COMPANY  
UTILITY POWER GENERATION DIVISION

BWNP-20502-4(11-82)

CUSTOMER: DUKE POWER CO./OCONEE UNIT #2										CONTRACT NO: 702-2034-22-02										COMPONENT: PRESSURIZER																																																	
DESCRIPTION: LOWER HEAD TO HEATER BUNDLE R 4/40 TO 6 PTS 3-5 AND 6-8																																																																					
ID#: 2 PZR - WP28										PROCEDURE: ISI-130 REV. 23										MATERIAL: C/S										THICKNESS: 4.75 IN.										TEST SURFACE: O.D.																													
NO. POSITIONS: 4										DISTANCE: 12"										#1 REFERENCE: 19										CAL. SHEET: 862-022										CAL. SHEET: 862-023										CAL. SHEET: 862-024																			
BEAM DIRECTION: LONG 6 SHEAR										LIMITED EXAM <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES (IF SO WHY)										ANGLE: 0°										ANGLE: 45°										ANGLE: 60°																													
EXAMINER: R.J. PAINE Brian W. Wynn										ID#: P480/W4928										LEVEL: II / II										TIME START: 1325 HR.										TIME START: 1401 HR.										TIME START: 1339 HR.																			
EXAMINER: L. LIBERATORE										ID#: L 4930										LEVEL: I										TIME STOP: 1338 HR.										TIME STOP: 1429 HR.										TIME STOP: 1351 HR.																			
NOTES:															PART TEMP: 93 °F															PART TEMP: 93 °F															PART TEMP: 93 °F																								
															DATE: 8-27-86															DATE: 8-27-86															DATE: 8-27-86																								
															CAL. BLOCK: 40394															WELD INFORMATION & 0° THICKNESS																																							
															DWG. # 1.51-OCNA-002															SURFACE-#2										HTH-FLUSH										SURFACE-#1																			
															FCA(S)															HEAD										WD- 3.8"										SHELL																			
1ST SCAN										THERMOMETER ID# 32597										60° REQUIRED										✓										BM- 5.8"										MIN- 5.75"										BM- 6.85"									
2ND SCAN										N/A										60° NOT REQUIRED																				HAZ- 5.8"										MAX- 5.85"										HAZ- 6.85"									
IND. NO.	A	B	POSITION OR PART ITEM	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	MAX AMP % DAC	L.A.M.	LGTH (IN.)	WDTH	20%	50% OR HMA	100%	CRYSTAL	DISTANCE (INCHES)				THROUGH WALL DIMENSION				DAMPS	REMARKS																																												
																FROM				MINIMUM		MAXIMUM																																															
																POSITION IN.		POSITION IN.		POSITION IN.		POSITION IN.																																															
																1	2	1	2	1	2	1	2																																														
																	A	B	I	2	DEPTH	A	B	DEPTH	A	B																																											
			3-5	0°			NO																																																														
			6-8	0°			NO																																																														
200			3-4	45°	1	2	SPF	251	7.3					.8			2.65										NO	MAX. AMP																																									
																	2.15											100% E.P.																																									
																	2.95											100% E.P.																																									
201			3-4	45°	1	2	SPF	251	7.3					.8			3.0									NO	MAX. AMP																																										
																	2.95											100% E.P.																																									
																	3.75											100% E.P.																																									
REVIEWED BY: Howard Stappelmann										LEVEL: II										DATE REVIEWED: 4 Sept '86										FIGURE NO: B02.011.006																																							
ANGLE-										0 DEG.										45 DEG.										60 DEG.										OTHER										ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES																			
IND. NOS.										1 TO 199										200 TO 399										400 TO 599										600 TO 799										IF YES, STATE NUMBER: 86-001																			

258/100/100  
H518  
9-15-86

BA K &amp; WILCOX

## VOLUMETRIC TEST DATA FORM 101

**BWNP-20531-3 (10-84)**

[illegible]

**BABCOCK & WILCOX COMPANY**  
**UTILITY POWER GENERATION DIVISION**

BWNP-20502-4(11-82)

[illegible]

RF<sup>o</sup> with unit  
H 5B  
9-15-88

**BABCOCK & WILCOX**

NUCLEAR POWER GENERATION DIVISION

**NOTES:**

<input type="checkbox"/> NO SCAN <input checked="" type="checkbox"/> LIMITED SCAN,	SURFACE <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2,	BEAM DIRECTION <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> B,
BETWEEN POINTS <u>3</u> AND <u>5</u> , <u>0.0</u> INCHES FROM POINT <u>3</u> TO <u>0.0</u> INCHES FROM POINT <u>5</u> , <u>1.9</u> INCHES FROM WELD C.		
FOR ANGLES: <input type="checkbox"/> 0° <input checked="" type="checkbox"/> 45° <input type="checkbox"/> 60° OTHER _____ DUE TO: <u>WELD H.A.Z. CONFIGURATION</u>		

<input type="checkbox"/> NO SCAN <input checked="" type="checkbox"/> LIMITED SCAN,	SURFACE <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2,	BEAM DIRECTION <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> B,
BETWEEN POINTS <u>6</u> AND <u>8</u> , <u>0.0</u> INCHES FROM POINT <u>6</u> TO <u>0.0</u> INCHES FROM POINT <u>8</u> , <u>1.9</u> INCHES FROM WELD C.		
FOR ANGLES: <input type="checkbox"/> 0° <input checked="" type="checkbox"/> 45° <input type="checkbox"/> 60° OTHER _____ DUE TO: <u>WELD H.A.Z. CONFIGURATION</u>		

<input type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN,	SURFACE <input type="checkbox"/> 1 <input type="checkbox"/> 2,	BEAM DIRECTION <input type="checkbox"/> 1 <input type="checkbox"/> A <input type="checkbox"/> 2 <input type="checkbox"/> B,
_____ DEGREES, _____ INCHES FROM WELD CENTERLINE.		
FOR ANGLES: <input type="checkbox"/> 0° <input type="checkbox"/> 45° <input type="checkbox"/> 60° OTHER _____ DUE TO: _____		

<input type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN,	SURFACE <input type="checkbox"/> 1 <input type="checkbox"/> 2,	BEAM DIRECTION <input type="checkbox"/> 1 <input type="checkbox"/> A <input type="checkbox"/> 2 <input type="checkbox"/> B,
_____ DEGREES, _____ INCHES FROM WELD CENTERLINE.		
FOR ANGLES: <input type="checkbox"/> 0° <input type="checkbox"/> 45° <input type="checkbox"/> 60° OTHER _____ DUE TO: _____		

REVIEWED BY: Howard Stoppelman LEVEL II DATE 4 Sept '86

CONTRACT NO. 702-2034-22-02

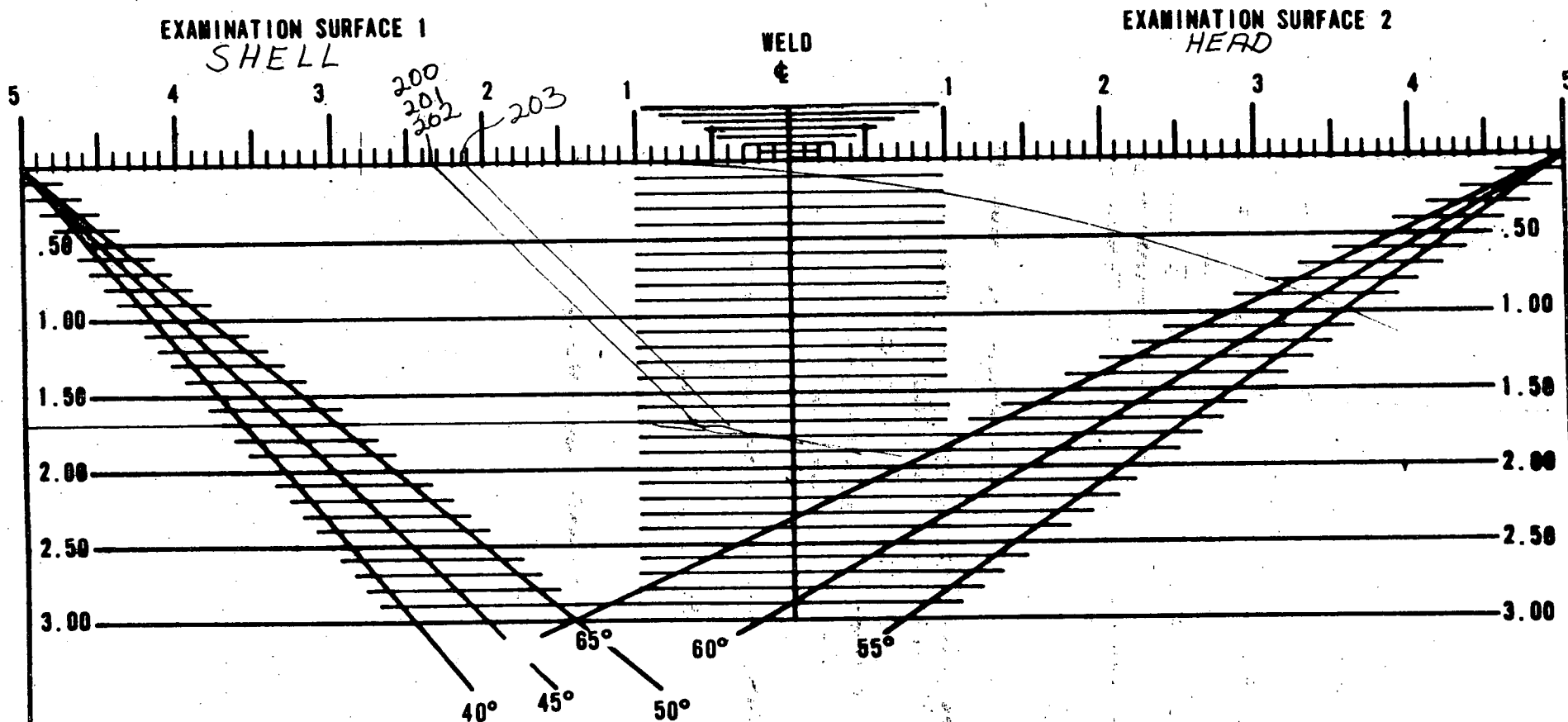
FIGURE NO. B02.011.006

PAGE 4 OF 5

REPLACE 7  
H32-4-15-86

INDICATION PLOT SHEET

BWNP 20 1-1(5-83)



COMMENTS:

SCALE 1"



GEOMETRIC



REPORTABLE

CUSTOMER: DUKE POWER OCONEE II

PROJECT NO: 702-2034-22-02

WELD NO: 2PZR-WP28

ANALYST:

SNT LEVEL:

DATE:

FIGURE NO: B02.011.006

RECEIVED  
4-1-84

## VOLUMETRIC TEST DATA

BABCOCK & WILCOX COMPANY  
UTILITY POWER GENERATION DIVISION

BNWP-20502-4(11-82)

CUSTOMER: DUKE POWER CO./OCONEE UNIT #2				CONTRACT NO: 702-2034-22-02				COMPONENT: PRESSURIZER									
DESCRIPTION: LOWER HEAD TO HEATER BUNDLE PC 4/40 TO 6 PTS. 3-5 AND 6-8																	
ID#: 2 PZR - WP28			PROCEDURE: ISI-130 REV. 23			MATERIAL: C5			THICKNESS: 4.75 IN.		TEST SURFACE: O.D.						
NO. POSITIONS: 4		DISTANCE: 12.0"		#1 REFERENCE: 19		CAL. SHEET: 862-053			CAL. SHEET: 862-054		CAL. SHEET:						
BEAM DIRECTION 0 LONG 4 SHEAR				LIMITED EXAM <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES (IF SO WHY)				ANGLE: 45°		ANGLE: 35°		ANGLE: N					
EXAMINER: R.J. PAINE				ID#: P1680		LEVEL: II		TIME START: 1113 HR.		TIME START: 1200 HR.		TIME START: A HR.					
EXAMINER: L. LIBERATORE				ID#: L 4930		LEVEL: 872 I		TIME STOP: 1137 HR.		TIME STOP: 1215 HR.		TIME STOP: HR.					
NOTES:						PART TEMP: 86 °F			PART TEMP: 86 °F			PART TEMP: °F					
						DATE: SEPT 5 /86			DATE: SEPT 5 /86			DATE:					
						CAL. BLOCK: 40394			WELD INFORMATION & 0° THICKNESS								
						DWG. # 151-0042-002			FCA(S)			SURFACE-12		HTH-		SURFACE-11	
								WD-									
1ST SCAN		R.J. PAINE		THERMOMETER ID# 32598		60° REQUIRED		N/A		BM- SEE		MIN- 0°		BM- DATA			
2ND SCAN		N/A		60° NOT REQUIRED		A		HAZ-		MAX-		HAZ-					

IND. NO.	POSITION OR PART ITEM	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	LAM.			LGTH	WDTH	(INCHES)				THROUGH WALL DIMENSION				DAMP	REMARKS			
						MAX AMP % DAC	DEPTH (IN.)	20%			50% OR NHA	100%	CRYSTAL	DISTANCE	FROM	MINIMUM		MAXIMUM					
																DEPTH	POSITION IN.				DEPTH	POSITION IN.	
																	1	2				1	2
						LENGTH				A	B	I	2	A	B	A	B						
200	3-4	45°	1	2	SPF	159	6.8			.7		4.2		9.3						No	MAX. AMP		
												4.0									100% EP.		
												4.7									100% E.P.		
201	3-4	45°	1	2	SPF	251	6.8			.75		2.65		9.3					No	MAX. AMP			
												2.2									100% EP.		
												2.95									100% E.P.		
202	3-4	45°	1	2	SPF	251	6.8			.8		3.0		9.3					No	MAX. AMP			
												2.95									100% EP.		

REVIEWED BY: Howard Stappelmann				LEVEL: II		DATE REVIEWED: 8 SEPT '86		FIGURE NO: B02.011.006	
ANGLE-		0 DEG.		45 DEG.		60 DEG.		OTHER	
IND. NOS.		1 TO 199		200 TO 399		400 TO 599		600 TO 799	
ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES				IF YES, STATE NUMBER: SEE PAGE ONE					

APPROVED  
HJB  
9-15-86

## VOLUMETRIC TEST DATA FORM 101

BWNP-20531-3 (10-84)

CUSTOMER: DUKE POWER CO. / OCONEE UNIT #2										CONTRACT NO: 702-2034-22-02					COMPONENT: PRESSURIZER								
EXAMINER: R.J. PRINE					ID#: P 1680			LEVEL II		DATE(S): SEPT 5 1986													
EXAMINER: L. LIBERATORE					ID#: L 4930			LEVEL I															
IND. NO.	POSITION OR PART ITEM	ANGLE (DEG)	SURFACE	BEAM DIRECTION	STATUS	LAM.		LNGTH	WDTH	(INCHES)				THROUGH WALL DIMENSION				DAMPS	REMARKS				
						MAX AMP 3/4 DAC	DEPTH (IN.)			20%	50% OR HMA	100%	CRYSTAL	DISTANCE	FROM	MINIMUM				MAXIMUM			
																DEPTH	POSITION IN.			DEPTH	POSITION IN.		
																	1				2	1	2
								LENGTH				A	B	I	2	DEPTH	A	B	DEPTH	A	B		
202	3-4	45°	1	2	SPF	251	6.8							3.75									100% E.P.
203	4-5	45°	1	2	SPF	159	6.8					.55	2.5			9.3						No	MAX. AMP
													2.25										100% E.P.
													2.8										100% E.P.
	3-5	45°				No	OTHER	RECORDABLE	INDICATIONS														
	6-8	45°				No	RECORDABLE	INDICATIONS															
600	3-4	35°	1	2	SPF	316	6.9					.75	2.7		7.5							No	MAX. AMP
													2.1										100% E.P.
													2.85										100% E.P.
601	3-4	35°	1	2	SPF	316	6.9					.65	3.1		7.5							No	MAX. AMP
													2.85										100% E.P.
													3.5										100% E.P.
602	4-5	35°	1	2	SPF	200	6.9					.6	2.2		7.0							No	MAX. AMP
													1.9										100% E.P.
													2.5										100% E.P.
	3-5	35°				No	OTHER	RECORDABLE	INDICATIONS														
	6-8	35°				No	RECORDABLE	INDICATIONS															
REVIEWED BY: Howard Stoppelman										LEVEL: II		DATE REVIEWED: 12 <sup>th</sup> 8 SEPT 86					FIGURE NO.: B02.011.006						

CALCULATION DATA/TRANSMITTAL SHEET

DOCUMENT IDENTIFIER: CALC. 32 - 1148321 - 00 C.C. 308  
TRANS. 86 - - - REF. PG(s) 5  
TYPE: RESEARCH & DEVELOPMENT SAFETY ANALYSIS REPORT ☒ DOC. SUBV. INPUT DESIGN MON. ☒ DESIGN VERIF.  
OTHER  
TITLE: ISI FLAW EVALUATIONS for PRZR SUPPORT LUGS (W, ZW) AND H.B. WELD (WP28)  
PREPARED BY W. J. DE COOMAN W.J. De Cooman REVIEWED BY W. L. RETO W.L. Reto  
TITLE TECH. SPEC. DATE 11/3/83 TITLE Principal Engr DATE 11/8/83

PURPOSE: DETERMINING THE ACCEPTABILITY OF THE REPORTED MATERIAL INDICATIONS, (REF. 11, 12, 13) DETECTED IN DUKE POWER CO.'S, OCONEE NUCLEAR STATION 2 PRESSURIZER, USING LINEAR ELASTIC FRACTURE MECHANICS (LEFM) ANALYSIS METHODS.

SUMMARY OF RESULTS (INCLUDE DOC. ID'S OF PREVIOUS TRANSMITTALS & SOURCE CALCULATIONAL PACKAGES FOR THIS TRANSMITTAL)

- ALL REPORTED INDICATIONS WERE FOUND TO BE ACCEPTABLE FOR CONTINUED PLANT OPERATION.

A DETAILED SUMMARY OF RESULTS IS ON PAGE 4 .

DISTRIBUTION

SEE DRN

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6.0	LUG EVALUATIONS.	24-41

1.0PURPOSE:

THE PURPOSE OF THIS ANALYSIS IS TO DETERMINE THE ACCEPTABILITY OF REPORTED MATERIAL INDICATIONS (REF. 11, 12, 13) FOUND DURING ROUTINE IN-SERVICE INSPECTION OF DUKE POWER CO.'S, OCONEE NUCLEAR STATION 2, PRESSURIZER. INDICATIONS WHICH FAIL TO MEET THE ACCEPTANCE CRITERIA OF REF. 1 SECTION II, INB-3511 AND INB-3516 SHALL HAVE THEIR ACCEPTABILITY BASED ON INB-3600 AND THE ANALYTICAL PROCEDURES OF SECTION II APPENDIX A.

2.0METHOD OF ANALYSIS:

INDICATIONS EXCEEDING THE ALLOWABLE INDICATION SIZE WILL BE JUSTIFIED BY THE ANALYTICAL PROCEDURES OF REF. 1 SECTION II APPENDIX A AND EVALUATED USING THE ACCEPTANCE CRITERIA OF REF. 1 AND 2 SECTION II INB-3600, STRESS INTENSITY FACTOR.

a) NORMAL CONDITION (INCLUDING UPSET AND TEST):

$$K_I < K_{Ia} / \sqrt{10}$$

b) EMERGENCY AND FACULTED CONDITIONS:

$$K_I < K_{Ic} / \sqrt{2}$$

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## GENERAL CALCULATIONS

3.0SUMMARY OF RESULTS:

INDICATION No.	VESSEL EVALUATIONS		LUG EVALUATIONS	
	NORMAL	FAULTED	NORMAL	FAULTED
82.01.204 202/602	4.41 > 3.16	4.41 > 1.414	NOT APPLICABLE, NOT IN LUG.	
82.08.011 207A/402/403/404/ 207B	5.74 > 3.16	3.65 > 1.414	2.47 > 3.16	4.98 > 1.414
82.08.013 408/409/410 400/402/201/200 406	4.97 > 3.16	3.10 > 1.414	4.67 > 3.16	3.35 > 1.414
	4.65 > 3.16	3.12 > 1.414	6.17 > 3.16	4.61 > 1.414
	NOT APPLICABLE, NOT IN VESSEL		9.78 > 3.16	5.13 > 1.414

∴ THE ABOVE INDICATIONS ARE ACCEPTABLE.

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4.0REFERENCES:

- 1) ASME BOILER & PRESSURE VESSEL CODE, 1977ED. THROUGH SUMMER 1978.
- 2) ASME BOILER & PRESSURE VESSEL CODE, 1980ED.
- 3) B&W Co. PRESSURIZER STRESS REPORT - REPORT No. 6: PRZR SUPPORTS ANALYSIS, VOL. 1 OF 1, 620-0004-59, UP&D MICROFILM ROLL No. 3 80-23, 80-24.
- 4) B&W Co. PRESSURIZER STRESS REPORT - REPORT No. 7: THERMAL AND MECHANICAL LOADS ANALYSIS, VOL. 1 OF 2, 620-0003-59, UP&D MICROFILM ROLL No. 30-23.
- 5) WELDING RESEARCH COUNCIL, BULLETIN 175, AUG. 1975; RECOMMENDATIONS ON TENSILE REQUIREMENTS FOR FERRITIC MATERIALS.
- 6) B&W Co. DWG No. 02-149774E REV. 4, VESSEL SUPPORTS & MISC DETAILS, 620-0004.
- 7) B&W Co. DWG No. 02-149760E REV. 5, VESSEL SUBASSEMBLY, 620-0004.
- 8) B&W Co. DWG No. 02-149759E REV. 6, PRZR: LIST OF MATERIALS, 620-0004.
- 9) B&W Co. CALC. No. 32-1148282-00, ISI FLAW EVALUATIONS PRZR
- 11) B&W Co. DOC. ID. 57-1124564-00, VOL. EXAM. REPORT No. 83-005 (82.01.004), 599-0442, OCONEE UNIT 2, PRZR LWR HD. TO SHELL WP 28.
- 12) B&W Co. DOC. ID. 57-1124565-00, VOL. EXAM. REPORT No. 83-007 (82.08.011), 599-0442, OCONEE UNIT 2, PRZR SPRT LUG, ZW-AXIS WP 82.
- 13) B&W Co. DOC. ID. 57-1124566-00, VOL. EXAM. REPORT No. 83-009 (82.08.013), 599-0442, OCONEE UNIT 2, PRZR SPRT LUG, W-AXIS WP 82.

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**GENERAL CALCULATIONS**

5.0

VESSEL EVALUATIONS

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*11/9/82*

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SUMMARY of STRESSES for the PRZR HEATER BUNDLE SUELL TO LOWER HEAD. THESE ARE MAXIMUM STRESSES IN THIS REGION AND NOT PARTICULARLY AT THE FLAW LOCATION. STRESS ARE FROM REF. 4 PRESSURIZER SUELL ANALYSIS.

• THERMAL STRESSES RANGE (KSI)	INSIDE SURFACE	OUTSIDE SURFACE	PG. No. B-5-17 B-5-18
	$\sigma_{MIN} = -6.243$ (HU)	$\sigma_{MAX} = 2.895$	
	$\sigma_{MAX} = 18.331$ (CD)	$\sigma_{MIN} = 7.786$	
	<u>24.574</u>	<u>10.681</u>	

• PRESSURE STRESSES RANGE (KSI)	INSIDE SURFACE	OUTSIDE SURFACE
	$\sigma_{MAX} = 9.0$	$\sigma_{MAX} = 10.0$
	$\sigma_{MIN} = 0.0$	$\sigma_{MIN} = 0.0$
	<u>9.0</u>	<u>10.0</u>

$$\sigma_i = 24.574 + 9.0 = \underline{33.574 \text{ KSI}} \quad \sigma_o = 10.681 + 10.0 = \underline{20.681 \text{ KSI}}$$

• MEMBRANE STRESS:

$$P_m = \sigma_m = (33.574 + 20.681) / 2 = 27.128 \text{ KSI} = \sigma_m$$

$$\underline{\Delta \sigma_m = \sigma_m = 27.128 \text{ KSI}}$$

• BENDING STRESS:

$$P_b = \sigma_{max} - P_m = 33.574 - 27.128 = 6.446 \text{ KSI} = \sigma_b$$

$$\underline{\Delta \sigma_b = \sigma_b = 6.446 \text{ KSI}}$$

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## GENERAL CALCULATIONS

INDICATION No. 202/602 Vessel Surface

$a = 0.50''$

$\Delta\sigma_m = 27.128 \text{ ksi}$

$Q \approx 1.3$

REF. 1, Fig. A3300-1

$l = 1.85''$

$\Delta\sigma_b = 6.446 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-3

$t = 7.00''$

$\sigma_y = 35.0 \text{ ksi}$   
(ASME, U.1)

$M_b \approx 0.95$

REF. 1, Fig. A3300-5

$\frac{a}{l} = 0.27$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.96 \text{ use } 1.0$

MATERIAL THICKNESS FROM REF. 11.

$\frac{a}{t} = 0.07$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (27.128 \times 1.1 \times \frac{\sqrt{\pi}}{1.3})^{\frac{1}{2}} = 46.39$

$D_1 = 46.39 \text{ KSI}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (6.446 \times 0.95 \times \frac{\sqrt{\pi}}{1.3})^{\frac{1}{2}} = 9.52$

$D_2 = 9.52 \text{ KSI}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 0.50$

which integrates to:

$a_f = \left[ (0.50)^{0.863} - \left( \frac{0.863 (0.3795 \times 10^{-9}) \times 55.91 \times 360}{C_0 (D_1 + D_2)^{3.726}} \right) \right]^{-1.1587} = a_f$

$a_f = 0.6574 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$a_i/t = 0.09 \approx 0.07 \text{ ok}$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \quad \text{FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \quad \text{FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \quad \text{AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} \quad \text{OR} \quad \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 55.91 \text{ KSI} \sqrt{0.6574 \text{ IN.}}$$

$$K_{IA} = 45.33 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{45.33} = 4.41$$

and

$$4.41 > 3.16$$

therefore the flaw is acceptable.

202/602

\* Note: this assumes an  $RT_{NDT, \text{initial}} = +40^\circ\text{F}$  and  $T_{\text{final}} = +222^\circ\text{F}$

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PDS-21037-2 (1.82)

## GENERAL CALCULATIONS

INDICATION No. 307A/402/403/404/207/B VESSEL - Surface

$a = 1.29$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 2.2$

REF. 1, Fig. A3300-1

$l = 2.58$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-3

$t = 6.188$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.75$

REF. 1, Fig. A3300-5

$\frac{a}{l} = 0.5$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.21$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\sqrt{\pi}}{2.2})^{\frac{1}{2}} = 20.28$

$D_1 = 20.28 \text{ KSI}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.75 \times \frac{\sqrt{\pi}}{2.2})^{\frac{1}{2}} = 9.55$

$D_2 = 9.5 \text{ KSI}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 1.29$

which integrates to:

$a_f = \left[ (1.29)^{-0.863} - \frac{0.863(0.3795 \times 10^{-9}) \Delta K_I^{3.726}}{C_0} \right]^{-1.1587} = a_f$

$a_f = 1.3621 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$a/t = 0.22 \approx 0.21 \text{ OK}$

• ACCEPTANCE CRITERIA: 32-1148321-00

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 29.83 \text{ KSI} \sqrt{1.3621 \text{ IN.}}$$

$$K_{IA} = 34.82 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{34.82} = 5.74$$

and

$$5.74 > 3.16$$

Normal &  
Upset Cond.

therefore the flaw is acceptable.

207A/402/403/404/207B

\* Note: this assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
final

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initial

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INDICATION No. 207A/402/403/404/207B Vessel-Surface

$$a = 1.3621$$

$$\Delta\sigma_m = 1.0 \text{ ksi}$$

$$Q \approx 2.2$$

REF. 1, Fig. A3300-1

$$l = \frac{1.3621(2.58)}{1.29} = 2.724$$

$$\Delta\sigma_B = 17.6 \text{ ksi}$$

$$M_m \approx 1.1$$

REF. 1, Fig. A3300-3

$$t = 6.188$$

$$\sigma_y = 38.0 \text{ ksi}$$

$$M_b \approx 0.75$$

REF. 1, Fig. A3300-5

$$\frac{a}{l} = 0.5$$

$$\frac{\sigma_m + \sigma_B}{\sigma_y} = 0.5$$

$$\frac{a}{t} = 0.22$$

$$\bullet \Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_B M_b \sqrt{\pi} \sqrt{a/Q}$$

• REWRITTEN

$$\Delta K_I = (D_1 + D_2) \sqrt{a}$$

• where

$$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \frac{\pi}{2.2})^{\frac{1}{2}} = 1.32$$

$$D_1 = 1.32 \text{ KSI}$$

$$D_2 = \Delta\sigma_B M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.75 \times \frac{\pi}{2.2})^{\frac{1}{2}} = 15.77$$

$$D_2 = 15.77 \text{ KSI}$$

$$\bullet \frac{da}{dN} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$$

surface

$$a_i =$$

which integrates to:

$$a_f = \left[ \left( \frac{a_i}{C_0} \right)^{-0.863} - \left( 0.863 (3.795 \times 10^{-10}) \times \frac{17.09}{D_1 + D_2} \times \frac{1}{\text{CYCLES LOCA}} \right)^{-1.1587} \right]^{-1.1587} = a_f$$

$$a_f = 1.3621 \text{ inches}$$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$$a_i/t = \text{no change } 12$$

## • ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (29.83 + 17.09) \text{ KSI} \sqrt{1.3621 \text{ IN.}}$$

$$K_{IC} = 54.76 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{54.76} = 3.65$$

and

$$3.65 > 1.414$$

Faulted Cond

therefore the flow is acceptable.

207A/402/403/404/207B

\* Note: this assumes an  $R_{T_{NDT}} = +40^\circ\text{F}$  initial

and  $T = +222^\circ\text{F}$  final

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## GENERAL CALCULATIONS

INDICATION No. 408/409/410 (SURFACE-VESSEL) Case 1

$a = 1.1$

$\Delta\sigma_m = 15.4 \text{ KSI}$

$Q \approx 1.5$

REF. 1, fig. A3300-1

$l = 3.4$

$\Delta\sigma_b = 7.0 \text{ KSI}$

$M_m \approx 1.1$

REF. 1, fig. A3300-3

$t = 6.188$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.8$

REF. 1, fig. A3300-5

$\frac{a}{l} = 0.324$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = \frac{22.4}{38.0} = 0.6$

$\frac{a}{t} = 0.178$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.4 \times 1.1 \times \frac{\pi}{1.5})^{\frac{1}{2}} = 24.52$

$D_1 = 24.52 \text{ KSI}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (7.0 \times 0.8 \times \frac{\pi}{1.5})^{\frac{1}{2}} = 8.10$

$D_2 = 8.10 \text{ KSI}$

$\frac{da}{dN} = C_0 \Delta K_I^m = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 1.10$

which integrates to:

$a_f = \left[ (1.1)^{-0.863} - (0.863 (3.795 \times 10^{-10}) \times 32.62 \times \frac{3.726}{360}) \right]^{-1.1587} = a_f$

$a_f = 1.1756 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$a_i/t = .19 \approx .18 \text{ OK}$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(A) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} K_I \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 32.62 \text{ KSI} \sqrt{1.1756 \text{ IN.}}$$

$$K_{IA} = 35.37 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{35.37} = 5.65$$

and

$$5.65 > 3.16$$

therefore the flaw is acceptable.  
408/409/410

\* NOTE: this assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = 222^\circ\text{F}$   
final

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INDICATION No. 408/409/410 Vessel Case 2

$a = 1.1$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 1.6$

REF. 1, Fig. A3300-1

$l = 3.4$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-3

$t = 6.188$

$\sigma_y = 38.5 \text{ ksi}$

$M_b \approx 0.85$

REF. 1, Fig. A3300-5

$\frac{a}{l} = 0.324$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.178$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\sqrt{\pi}}{1.6})^{\frac{1}{2}} = 23.78$

$D_1 = 23.78 \text{ KSI}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.85 \times \frac{\sqrt{\pi}}{1.6})^{\frac{1}{2}} = 12.69$

$D_2 = 12.69 \text{ KSI}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 1.10$

which integrates to:

$a_f = \left[ (1.1)^{-0.863} - (0.863 (3.795 \times 10^{-10}) \times \frac{36.47}{D_1 + D_2} \times \frac{360}{\text{CYCLES}})^{\frac{3.726}{-1.1587}} \right] = a_f$

$a_f = 1.2185 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$\frac{a_i}{t} = 0.197 \approx 0.178$   
OK

• ACCEPTANCE CRITERIA:

REF. 1, INWB-3600(A) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{in.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} K_I \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 36.47 \text{ KSI} \sqrt{1.2185 \text{ in.}}$$

$$K_{IA} = 40.26 \text{ KSI} \sqrt{\text{in.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{40.26} = 4.97$$

and

$$4.97 > 3.16$$

therefore the flaw is acceptable.

408/409/410

\* Note: This assumes an  $RT_{NDT, \text{initial}} = +40^\circ\text{F}$  and  $T = +222^\circ\text{F}$  Final

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INDICATION No. 408/409/410 Case 2 LOCA

$Q = 1.2185$	$\Delta\sigma_m = 1.0 \text{ ksi}$	$Q \approx 1.5$	REF. 1, fig. A3300-1
$L = \frac{1.2185(3.4)}{1.1} = 3.766$	$\Delta\sigma_B = 17.6 \text{ ksi}$	$M_m \approx 1.1$	REF. 1, fig. A3300-
$t = 6.188$	$\sigma_y = 38.0$	$M_b \approx 0.8$	REF. 1, fig. A3300-
$\frac{a}{L} = 0.324$	$\frac{\sigma_m + \sigma_B}{\sigma_y} = 0.5$		
$\frac{a}{t} = 0.197$			

•  $\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_B M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \left( \frac{\pi}{1.5} \right)^{\frac{1}{2}}) = 1.59$

$D_1 = 1.59 \text{ KSI}$

$D_2 = \Delta\sigma_B M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.8 \times \left( \frac{\pi}{1.5} \right)^{\frac{1}{2}}) = 20.38$

$D_2 = 20.38 \text{ KSI}$

•  $\frac{da}{dn} = C_0 \Delta K_I^n = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface  
 $Q_i = 1.2185$

which integrates to:

$a_f = \left[ \left( \frac{1.2185}{Q_i} \right)^{-0.863} - \left( \frac{0.863(3.795 \times 10^{-10})}{C_0} \times \frac{21.97}{D_1 + D_2} \times \frac{1}{\text{CYCLES LOCA}} \right)^{-1.1587} \right] = a_f$

$a_f = 1.2186 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$a_f/t = 0.197 = 0.197 \text{ in}$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (36.47 + 21.97) \text{ KSI} \sqrt{1.2186 \text{ IN.}}$$

$$K_{IC} = \text{KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{64.51} = 3.10$$

and

$$3.10 > 1.414$$

therefore the flaw is acceptable.  
408/409/40

\* Note: this assumes an  $RT_{NDT} = +40^\circ\text{F}$  initial

and  $T = +222^\circ\text{F}$  final

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Nuclear Power Generation Division

32-1148321-00

PDS-21037.2 (1-82)

## GENERAL CALCULATIONS

INDICATION No. 400/402/200/201 Surface - Vessel

$a = 1.81''$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 1.9$

REF. 1, Fig. A3300-1

$l = 4.50''$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-3

$t = 6.188$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.65$

REF. 1, Fig. A3300-5

$\frac{a}{l} = 0.402$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.3$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 21.83$

$D_1 = 21.83 \text{ ksi}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.65 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 8.90$

$D_2 = 8.90 \text{ ksi}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 1.81$

which integrates to:

$a_f = \left[ \left( \frac{a_i}{C_0} \right)^{-1.1587} - \left( \frac{0.863(3.795 \times 10^{-10}) \times 30.73 \times 360}{D_1 + D_2 \text{ CYCLES}} \right)^{-1.1587} \right] = a_f$

$a_f = 1.9654 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$a_f/t = 0.317 \approx 0.3 \text{ } \checkmark$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 30.73 \text{ KSI} \sqrt{1.9654 \text{ IN.}}$$

$$K_{IA} = 43.08 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{43.08} = \underline{4.65}$$

and

$$\boxed{4.65 > 3.16}$$

therefore the flaw is acceptable.

400/402/200/201

Normal &  
Upset Cond.

\* NOTE: this assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
final

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INDICATION No. 400/402/201/202 *Surface-Tension*

$$a = 1.9654''$$

$$\Delta\sigma_m = 1.0 \text{ ksi}$$

$$Q \approx 1.9$$

REF. 1, Fig. A3300-1

$$l = \frac{1.9654(4.5)}{1.81} = 4.8863'' \quad \Delta\sigma_B = 17.6 \text{ ksi}$$

$$M_m \approx 1.1$$

REF. 1, Fig. A3300-3

$$t = 6.188''$$

$$\sigma_y = 38.0 \text{ ksi}$$

$$M_b \approx 0.6$$

REF. 1, Fig. A3300-5

$$\frac{a}{l} = 0.4$$

$$\frac{\sigma_m + \sigma_B}{\sigma_y} = 0.5$$

$$\frac{a}{t} = 0.32$$

$$\bullet \Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_B M_b \sqrt{\pi} \sqrt{a/Q}$$

• REWRITTEN

$$\Delta K_I = (D_1 + D_2) \sqrt{a}$$

• where

$$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 1.42$$

$$D_1 = 1.42 \text{ KSI}$$

$$D_2 = \Delta\sigma_B M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.6 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 13.58$$

$$D_2 = 13.58 \text{ KSI}$$

$$\bullet \frac{da}{dn} = C_0 \Delta K_I^n = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$$

SURFACE

$$a_i = 1.9654$$

which integrates to:

$$a_f = \left[ (1.9654)^{-0.863} - (0.863(3.795 \times 10^{-10}) \times 15.0 \times \frac{1}{D_1 + D_2} \times \frac{1}{\text{CYCLES LOCA}})^{\frac{1}{1.1587}} \right]^{-1.1587} = a_f$$

$$a_f = 1.9654 \text{ inches}$$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$$a_i/l = \text{same } k$$

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## • ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (30.73 + 15) \text{ KSI} \sqrt{1.9654 \text{ IN.}}$$

$$K_{IC} = 64.11 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{64.11} = \underline{3.12}$$

and

$$\boxed{3.12 > 1.414}$$

Faulted Cond.

therefore the flaw is acceptable.

400/402/200/201

\* Note: this assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
final

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**32-1148321-00**

PDS-21036-1 (9-81)

**GENERAL CALCULATIONS**

6.0

LUG EVALUATIONS

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SUMMARY OF STRESSES USED TO EVALUATE FLAWS IN THE  
PRESSURIZER SHELL TO SUPPORT LUGS' JUNCTURES.

THESE STRESS RANGES ARE TABULATED USING REF. 9,  
WHICH ALSO EVALUATED ADDITIONAL FLAWS AT OTHER  
PRESSURIZER SHELL / SUPPORT LUGS' JUNCTURES.

$\Delta\sigma_m = 15.0 \text{ KSI}$	$\Delta\sigma_B = 1.2 \text{ KSI}$	THERMAL/MECH. ANALYSIS REF. 9 Pg 63
$\Delta\sigma_m = 0.43 \text{ KSI}$	$\Delta\sigma_B = 9.446 \text{ KSI}$	BITLAARD ANALYSIS REF. 9 (DW+SSE+T.E.) Pg. 67
$\Delta\sigma_m = 0.95 \text{ KSI}$	$\Delta\sigma_B = 17.6 \text{ KSI}$	BITLAARD ANALYSIS REF. 9 (LOCA) Pg 66

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32-1148321-00

PDS-21037.2 (1.82)

## GENERAL CALCULATIONS

INDICATION No. 2C7A/402/403/404/278

Sub surface - LUG

$2a = 1.0, a = 0.5"$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 1.2$

REF. 1, Fig. A3300-1

$l = 2.58"$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-2

$t = 3.50"$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.6$

REF. 1, Fig. A3300-4

$\frac{a}{l} = 0.194$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.143$

$e = 0.65$

$\frac{2e}{t} = 0.29$

$\frac{2e}{t} = 0.37$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\pi}{1.2})^{\frac{1}{2}} = 27.46$

$D_1 = 27.46 \text{ KSI}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.6 \times \frac{\pi}{1.2})^{\frac{1}{2}} = 10.34$

$D_2 = \text{KSI}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.0267 \times 10^{-9}) \Delta K_I^{3.726}$

Sub surface

$a_i = 0.50$

which integrates to:

$a_f = \left[ (0.50)^{-1.1587} - (0.863 (2.67 \times 10^{-9}) \times 37.8 \times \frac{360}{D_1 + D_2} \text{ CYCLES})^{\frac{1}{3.726}} \right]^{-1.1587} = a_f$

$a_f = 0.5020 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$\frac{a_f}{t} = \frac{0.502}{3.5} = .143 = .143 \text{ OK}$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 37.8 \text{ KSI} \sqrt{0.5020 \text{ IN.}}$$

$$K_{IA} = 26.78 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{26.78} = 7.47$$

and

$$7.47 > 3.16$$

therefore the flaw is acceptable.

207A/402/403/404/207B

Normal and  
Upset Cond.

\* Note: this assumes an  $R_{T_{NDT}} = +40^\circ\text{F}$  and  $T = +222^\circ\text{F}$   
initial final

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INDICATION No. 207A/402/403/404/207B

Subsurface - LUG

$$a = 0.502$$

$$\Delta\sigma_m = 1.0 \text{ ksi}$$

$$Q \approx 1.2$$

REF. 1, fig. A3300-1

$$l = \frac{0.502(2.58)}{0.50} = 2.5904 \quad \Delta\sigma_b = 17.6 \text{ ksi}$$

$$M_m \approx 1.1$$

REF. 1, fig. A3300-2

$$t = 3.5$$

$$\sigma_y = 38.0 \text{ ksi}$$

$$M_b \approx 0.6$$

REF. 1, fig. A3300-4

$$\frac{a}{l} = 0.194$$

$$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.5$$

$$\frac{a}{t} = 0.143$$

$$C = 0.65$$

$$\frac{2a}{t} = 0.29$$

$$\frac{2a}{t} = 0.37$$

$$\bullet \Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$$

• REWRITTEN

$$\Delta K_I = (D_1 + D_2) \sqrt{a}$$

• where

$$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \frac{\pi}{1.2})^{\frac{1}{2}} = 1.78$$

$$D_1 = 1.78 \text{ KSI}$$

$$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.6 \times \frac{\pi}{1.2})^{\frac{1}{2}} = 17.09$$

$$D_2 = \text{KSI}$$

$$\bullet \frac{da}{dn} = C_0 \Delta K_I^n = (0.0267 \times 10^{-9}) \Delta K_I^{3.726}$$

sub surface

$$a_i = 0.502$$

which integrates to:

$$a_f = \left[ (0.502)^{-0.863} - (0.863(2.67 \times 10^{-11} \times 18.87 \times \frac{1}{D_1 + D_2})^{3.726} \right)^{-1.1587} \right] = a_f$$

CYCLES  
LOCA

$$a_f = 0.502 \text{ inches}$$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$$a_i/t = \text{no change } R$$

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• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (37.8 + 18.87) \text{ KSI} \sqrt{0.5020 \text{ IN.}}$$

$$K_{IC} = 40.15 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{40.15} = 4.98$$

and

$$4.98 > 1.414$$

therefore the flaw is acceptable.

207A/402/403/404/217B

\* Note: this assumes an  $RT_{NDT}^{\text{initial}} = +40^\circ\text{F}$  and  $T^{\text{final}} = 222^\circ\text{F}$

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INDICATION No. 408/409/410 L49

$a = 1.1$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 1.3$

REF. 1, fig. A3300-1

$l = 3.4$

$\Delta\sigma_B = 10.65 \text{ ksi}$

$M_m \approx 1.15$

REF. 1, fig. A3300-3

$t = 3.5$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.65$

REF. 1, fig. A3300-5

$\frac{a}{l} = 0.324$

$\frac{\sigma_m + \sigma_B}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.314$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_B M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.15 \times \frac{\pi}{1.3})^{\frac{1}{2}} = 27.59$

$D_1 = 27.59 \text{ KSI}$

$D_2 = \Delta\sigma_B M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.65 \times \frac{\pi}{1.3})^{\frac{1}{2}} = 10.76$

$D_2 = 10.76 \text{ KSI}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i =$

which integrates to:

$a_f = \left[ (1.1)^{-0.863} - (0.863 (3.795 \times 10^{-10} \times 38.35 \times \frac{3.726}{360}))^{-1.1587} \right] = a_f$

$a_f = 1.2459 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$\frac{a}{t} = 0.356 \approx 0.342$

PREPARED BY

WJH

DATE

11/2/83

DOC. NO.

REVIEWED BY

WJH

DATE

11/8/83

PAGE NO.

30

## • ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{in.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} K_I \text{ OR } \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 38.35 \text{ KSI} \sqrt{1.2459 \text{ in.}}$$

$$K_{IA} = 42.81 \text{ KSI} \sqrt{\text{in.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{42.81} = 4.67$$

and

$$4.67 > 3.16$$

therefore the flaw is acceptable.  
408/409/410

Normal &

Upset Condition

\* NOTE: This assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
Final

PREPARED BY

WJAL

DATE

11/2/83

DOC. NO.

REVIEWED BY

WJAL

DATE

11/8/83

PAGE NO.

31

INDICATION No. 408/409/410

LUG - Surface

$$a = 1.2459$$

$$\Delta\sigma_m = 1.0 \text{ ksi}$$

$$Q \approx 1.6$$

REF. 1, Fig. A3300-1

$$l = \frac{1.2459(3.4)}{3.5} = 3.8511$$

$$\Delta\sigma_b = 17.6 \text{ ksi}$$

$$M_m \approx 1.1$$

REF. 1, Fig. A3300-3

$$t = 3.5$$

$$\sigma_y = 38.0 \text{ ksi}$$

$$M_b \approx 0.55$$

REF. 1, Fig. A3300-5

$$\frac{a}{l} = 0.324$$

$$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.5$$

$$\frac{a}{t} = 0.356$$

$$\bullet \Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$$

• REWRITTEN

$$\Delta K_I = (D_1 + D_2) \sqrt{a}$$

• where

$$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \frac{\sqrt{\pi}}{1.6})^{\frac{1}{2}} = 1.54$$

$$D_1 = 1.54 \text{ KSI}$$

$$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.55 \times \frac{\sqrt{\pi}}{1.6})^{\frac{1}{2}} = 13.56$$

$$D_2 = 13.56 \text{ KSI}$$

$$\bullet \frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$$

surface

 $a_i =$ 

which integrates to:

$$a_f = \left[ \left( \frac{1.2459}{a_i} \right)^{-0.863} - \left( 0.863 (0.3795 \times 10^{-9}) \times 15.1 \times \frac{3.726}{D_1 + D_2 \text{ CYCLES}} \right) \right]^{-1.1587} = a_f$$

$$a_f = 1.2459 \text{ inches}$$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$$a/t = 0.356 = 356 \text{ } \sigma_R$$

PREPARED BY

WOL

DATE

11/2/83

DOC. NO.

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WOL

DATE

11/8/83

PAGE NO.

32

• ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (38.35 + 15.1) \text{ KSI} \sqrt{1.2459 \text{ IN.}}$$

$$K_{IC} = 59.66 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{59.66} = \underline{3.35}$$

and

$$\boxed{3.35 > 1.414}$$

therefore the flaw is acceptable.

408/409/410

Emergency +  
Faulted Cond.

\* Note: this assumes an  $RT_{NDT} = +40^\circ\text{F}$  and  $T = +222^\circ\text{F}$   
initial final

PREPARED BY

WQA

DATE

11/2/83

DOC. NO.

REVIEWED BY

WQA

DATE

11/8/83

PAGE NO.

33

Babcock &amp; Wilcox

a McDermott company

Nuclear Power Generation Division

32-1148321-00

PDS-21037-2 (1-82)

## GENERAL CALCULATIONS

INDICATION No. 400/402/200/201 Surface - LUG

$a = 1.75"$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 2.2$

REF. 1, Fig. A3300-1

$l = 4.5"$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, Fig. A3300-3

$t = 3.50"$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.3$

REF. 1, Fig. A3300-5

$\frac{a}{l} = 0.4$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.5$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\sqrt{\pi}}{2.2})^{\frac{1}{2}} = 20.28$

$D_1 = 20.28 \text{ ksi}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.3 \times \frac{\sqrt{\pi}}{2.2})^{\frac{1}{2}} = 3.82$

$D_2 = 3.82 \text{ ksi}$

$\frac{da}{dn} = C_0 \Delta K_I^N = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 1.75$

which integrates to:

$a_f = \left[ (1.75)^{-0.863} - (0.863 (0.3795 \times 10^{-9} \times 24.10 \times \frac{3.726}{360})) \right]^{-1.1587} = a_f$

$a_f = 1.8063 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$\frac{a_f}{t} = \frac{1.8063}{3.5} = 0.516 \approx 0.50$

PREPARED BY

W910

DATE 11/2/83

DOC. NO.

REVIEWED BY

W912

DATE 11/0/83

PAGE NO.

34

• ACCEPTANCE CRITERIA:

REF. 1, INWB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \quad \text{FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \quad \text{FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{in.}} \quad \text{AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} K_I \quad \text{OR} \quad \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 24.1 \text{ KSI} \sqrt{1.8063 \text{ in.}}$$

$$K_{IA} = 3239 \text{ KSI} \sqrt{\text{in.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{32.39} = \underline{6.17}$$

and

$$\boxed{6.17 > 3.16}$$

Normal &  
Upset Cond.

therefore the flaw is acceptable.  
400/402/200/201

\* NOTE: THIS ASSUMES AN  $RT_{NDT, \text{initial}} = +40^\circ\text{F}$

and  $T_{\text{final}} = +222^\circ\text{F}$

PREPARED BY

WGNL

DATE

11/2/83

DOC. NO.

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WGNL

DATE

11/8/83

PAGE NO.

35

INDICATION No. 401/402/200/201 Lug 1 LOCA Cycle

$$a = 1.8063$$

$$\Delta\sigma_m = 1.0 \text{ ksi}$$

$$Q \approx 1.9$$

REF. 1, Fig. A3300-1

$$l = \frac{1.8063(4.5)}{1.75} = 4.648$$

$$\Delta\sigma_b = 17.6 \text{ ksi}$$

$$M_m \approx 1.1$$

REF. 1, Fig. A3300-3

$$t = 3.5$$

$$\sigma_y = 38.0 \text{ ksi}$$

$$M_b \approx 0.3$$

REF. 1, Fig. A3300-5

$$\frac{a}{l} = 0.39$$

$$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.5$$

$$\frac{a}{t} = 0.5$$

$$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$$

• REWRITTEN

$$\Delta K_I = (D_1 + D_2) \sqrt{a}$$

• where

$$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (1.0 \times 1.1 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 1.42$$

$$D_1 = 1.42 \text{ ksi}$$

$$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (17.6 \times 0.3 \times \frac{\pi}{1.9})^{\frac{1}{2}} = 6.79$$

$$D_2 = 6.79 \text{ ksi}$$

$$\frac{da}{dn} = C_0 \Delta K_I^n = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$$

surface

 $a_i =$ 

which integrates to:

$$a_f = \left[ (1.8063)^{-1.1587} - (0.863(3.795 \times 10^{-9}) \times 8.1 \times \frac{1}{D_1 + D_2})^{1.1587} \right]^{-1.1587} = a_f$$
  
CYCLES LOCA

$$a_f = 1.8063 \text{ inches}$$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$$a/t = \text{same } R$$

PREPARED BY

WJR

DATE 11/2/83

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WJR

DATE 11/8/83

PAGE NO. 36

## • ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \text{ FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \text{ FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \text{ AS THE UPPER LIMIT}^*$$

$$K_{IC} > \sqrt{2} K_I \text{ OR } \frac{K_{IC}}{K_I} > 1.414$$

$$\text{therefore if } K_{IC} = \Delta K_I \sqrt{a_f} = (24.1 + 8.21) \text{ KSI} \sqrt{1.8063 \text{ IN.}}$$

$$K_{IC} = 43.42 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IC}}{K_I} = \frac{200}{43.42} = \underline{4.61}$$

and

$$\boxed{4.61 > 1.414} \text{ therefore the flaw is acceptable.}$$

400/402/200/201  
Faulted Cond.

\* Note: this assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
final

PREPARED BY

WJR

DATE

11/2/83

DOC. NO.

REVIEWED BY

WJR

DATE

11/8/83

PAGE NO

37

Babcock &amp; Wilcox

a McDermott company

Nuclear Power Generation Division

32-1148321-00

PDS-21037.2 (1.82)

## GENERAL CALCULATIONS

INDICATION No. 406

LUG - SURFACE

$Q = 0.65$

$\Delta\sigma_m = 15.43 \text{ ksi}$

$Q \approx 2.2$

REF. 1, fig. A3300-1

$L = 26 = 1.30$

$\Delta\sigma_b = 10.65 \text{ ksi}$

$M_m \approx 1.1$

REF. 1, fig. A3300-3

$t = 3.5$

$\sigma_y = 38.0 \text{ ksi}$

$M_b \approx 0.8$

REF. 1, fig. A3300-5

$\frac{a}{L} = 0.5$

$\frac{\sigma_m + \sigma_b}{\sigma_y} = 0.7$

$\frac{a}{t} = 0.186$

$\Delta K_I = \Delta\sigma_m M_m \sqrt{\pi} \sqrt{a/Q} + \Delta\sigma_b M_b \sqrt{\pi} \sqrt{a/Q}$

• REWRITTEN

$\Delta K_I = (D_1 + D_2) \sqrt{a}$

• where

$D_1 = \Delta\sigma_m M_m \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (15.43 \times 1.1 \times \frac{\pi}{2.2})^{\frac{1}{2}} = 20.28$

$D_1 = 20.28 \text{ ksi}$

$D_2 = \Delta\sigma_b M_b \left( \frac{\sqrt{\pi}}{\sqrt{Q}} \right) = (10.65 \times 0.8 \times \frac{\pi}{2.2})^{\frac{1}{2}} = 10.18$

$D_2 = 10.18 \text{ ksi}$

$\frac{da}{dn} = C_0 \Delta K_I^n = (0.3795 \times 10^{-9}) \Delta K_I^{3.726}$

surface

$a_i = 0.65$

which integrates to:

$a_f = \left[ (0.65)^{-1.1587} - (0.863 (3.795 \times 10^{-10} \times 30.46 \times 360))^{-1.1587} \right] = a_f$   
 $a_i$   $C_0$   $D_1 + D_2$   $\text{CYCLES}$   $\text{LOCA}$

$a_f = 0.6713 \text{ inches}$

• CHECK VALIDITY FOR THE ASSUMED  
VALUES USED FOR  $M_m$  AND  $M_b$ :

$\frac{a_f}{t} = \frac{0.6713}{3.5} = 0.192 \approx 0.186 \text{ OK}$

PREPARED BY

DATE 11/2/83

DOC. NO.

REVIEWED BY

DATE 11/8/83

PAGE NO.

38

## • ACCEPTANCE CRITERIA:

REF. 1, INB-3600(a) PROVIDES AN ACCEPTANCE CRITERIA BASE ON FLAW SIZE. HOWEVER, AN ALTERNATE ACCEPTANCE CRITERIA BASED ON STRESS INTENSITY FACTOR IS USED AND IS STATED IN REF. 2.

$$K_{IA} > \sqrt{10} K_I \quad \text{FOR NORMAL AND UPSET CONDITIONS.}$$

$$K_{IC} > \sqrt{2} K_I \quad \text{FOR EMERGENCY AND FAULTED CONDITIONS.}$$

for simplification of analysis:

$$K_{IA} \text{ AND } K_{IC} = 200 \text{ KSI} \sqrt{\text{IN.}} \quad \text{AS THE UPPER LIMIT}^*$$

$$K_{IA} > \sqrt{10} \quad \text{OR} \quad \frac{K_{IA}}{K_I} > 3.16$$

$$\text{therefore if } K_{IA} = \Delta K_I \sqrt{a_f} = 30.46 \text{ KSI} \sqrt{0.6713 \text{ IN.}}$$

$$K_{IA} = 20.45 \text{ KSI} \sqrt{\text{IN.}}$$

$$\text{then } \frac{K_{IA}}{K_I} = \frac{200}{20.45} = 9.78$$

and

$$9.78 > 3.16$$

Normal &  
Upset Cond.

therefore the flaw is acceptable.  
406

\* Note: This assumes an  $RT_{NDT} = +40^\circ\text{F}$   
initial

and  $T = +222^\circ\text{F}$   
final

PREPARED BY

WJD

DATE

11/2/83

DOC. NO.

REVIEWED BY

WJR

DATE

11/6/83

PAGE NO

39

E. JACK & WILCOX  
NUCLEAR POWER GENERATION DIVISION  
VOLUMETRIC EXAMINATION EVALUATION REPORT

Doc ID No.:

57-1124564-00

BWNP-20525-1(11-81)

EVALUATION NUMBER

83-005

METHOD: UT X RT     

FILE NO. OR REFERENCE

0442 - A.065

WELD NO. OR IDENTIFICATION: PZR Lower Head To Shell PC 6 TC 48 40  
APPLICABLE CODE YEAR AND ADDENDA: ASME Sec IX 1977 Thru Sum '78 Addenda  
DATE OF INITIAL EXAMINATION: 14, 18 OCT '83 RE-EXAMINATION:       
REPORTABLE INDICATION NUMBER(S): 201, 202, 203, 601, 602, 603, 604  
COMMENTS:     

ORIGINATOR: Howard Stypelmann LEVEL: II DATE: 24 OCT '83

PRELIMINARY DISPOSITION

ACCEPTANCE STANDARD: IAW -3511-1

COMMENTS: see attached memo

☒ ACCEPTABLE INDICATION NUMBER(S) 203, 603 (combined), 604  
☒ REJECTABLE INDICATION NUMBER(S) 202, 602 (combined)

LEVEL III: Ray Tinning DATE: 11-1-83

FRACTURE MECHANICS ANALYSIS

☒ YES ☐ NO

DOCUMENT NUMBER 32-1148321-00

FINAL DISPOSITION

COMMENTS: all indications acceptable per fracture analysis

☒ ACCEPTABLE INDICATION NUMBER(S) 203, 603, 604, 202, 602  
☐ REJECTABLE INDICATION NUMBER(S)     

DATE: Nov 8, 1983

FIGURE NO.

B201004

## VOLUMETRIC TEST DATA

BABCOCK & WILCOX COMPANY  
UTILITY POWER GENERATION DIVISION

BWMP-20502-4(11-82)

CUSTOMER: DUKE POWER OCONEE II										CONTRACT NO: 599-0442-										COMPONENT: Pressurizer																			
DESCRIPTION: PC 6 To 4:40 PTS. 3 To 5 And 6 To 8																																							
ID#: 2 PZR-VVP28										PROCEDURE: ISI 130 Rev 18										MATERIAL: CS					THICKNESS: 4.75 IN.					TEST SURFACE: OD									
NO. POSITIONS: 6					DISTANCE: 120					REFERENCE: 19					CAL. SHEET: 460014					CAL. SHEET: 460039					CAL. SHEET:														
BEAM DIRECTION: LONG 4 SHEAR LIMITED EXAM <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES (IF SO WHY)															ANGLE: 0°					ANGLE: 45°					ANGLE:														
EXAMINER: John C. ...										ID#: VV 9276					LEVEL: II					TIME START: 1120 HR.					TIME START: 1136 HR.					TIME START: HR.									
EXAMINER: Bruce ...										ID#: G0159					LEVEL: II					TIME STOP: 1135 HR.					TIME STOP: 1150 HR.					TIME STOP: HR.									
NOTES:															PART TEMP: 82 °F					PART TEMP: 82 °F					PART TEMP: °F														
															DATE: 18 Oct 83					DATE: 18 Oct 83					DATE:														
															CAL. BLOCK: 40339					WELD INFORMATION & 0° THICKNESS																			
															DWG. # ISI-0CNA-002					SURFACE-#2					HTH- Flush					SURFACE-#1									
															FCA(S)					Head					WD- 27					Shell									
1ST SCAN					John C. ...										60° REQUIRED					83-004					BM- 6.1					MIN- 5.8					BM- 7.2				
2ND SCAN					ONE SCAN DUE TO HIGH RAD										60° NOT REQUIRED										HAZ- 6.0					MAX- 6.1					HAZ- 7.1				
IND. NO.	A		B	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	LAM.		LGTH	WIDTH			(INCHES)				THROUGH WALL DIMENSION				DAPS	REMARKS																
	POSITION OR PART ITEM	MAX AMP & DAC						DEPTH (IN.)	20%		50% OR HMA	100%	CRYSTAL	DISTANCE	FROM	MINIMUM		MAXIMUM																					
																POSITION IN.		POSITION IN.																					
																I	2	I	2																				
	3 To 5		0°		No	Record	Able																																
	6 To 8		0°		No	Record	Able																																
	3 To 5		45°		No	Record	Able																																
	6 To 8		45°		No	Record	Able																																
REVIEWED BY: Howard ...										LEVEL: II					DATE REVIEWED: 21 OCT 83					FIGURE NO: B2.01.004																			
ANGLE -										0 DEG.					45 DEG.					60 DEG.					OTHER					ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES									

BABCOCK & WILCOX COMPANY  
UTILITY POWER GENERATION DIVISION

BWNP-20502-4(11-82)

CUSTOMER: DUKE POWER OCONEE II										CONTRACT NO: 599-0442-										COMPONENT: PRESSURIZER														
DESCRIPTION: PC.6 To 4#40, Pts. 3-5																																		
IDA: 2PZR-WP28										PROCEDURE: IS-130, REV. 18										MATERIAL: CS					THICKNESS: 4.75 IN.					TEST SURFACE: OD				
NO. POSITIONS: 3					DISTANCE: 12.0"					REFERENCE: 20										CAL. SHEET: 460011					CAL. SHEET:					CAL. SHEET:				
BEAM DIRECTION: 0 LONG 1 SHEAR LIMITED EXAM <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES (IF SO WHY)										ANGLE: 45°										ANGLE:					ANGLE:									
EXAMINER: John C. [Signature]										ID#: W3276					LEVEL: II					TIME START: 1410 HR.					TIME START: HR.					TIME START: HR.				
EXAMINER: [Signature]										ID#: 02520					LEVEL: II/II					TIME STOP: 1437 HR.					TIME STOP: HR.					TIME STOP: HR.				
NOTES:										PART TEMP: 82 °F										PART TEMP: °F					PART TEMP: °F									
										DATE: 14 OCT 83										DATE:					DATE:									
										CAL. BLOCK: 40339										WELD INFORMATION & 0° THICKNESS														
										DWG. # IS-OCN2-002										SURFACE-#2					HTH- WD- E- BM- HAZ-					SURFACE-#1				
										FCA(S) 83-004																								
THERMOMETER ID# 9-ST-07										60° REQUIRED																								
1ST SCAN: [Signature]										60° NOT REQUIRED										✓														
2ND SCAN: NO SCAN DUE TO HIGH RAD.																																		
IND. NO.	A	B	POSITION OR PART ITEM	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	LAN.			LGTH	WDTH	(INCHES)				THROUGH WALL DIMENSION								DAMPS	REMARKS								
								MAX AMP & DAC	DEPTH (IN.)	20%			50% OR HMA	100%	CRYSTAL	DISTANCE	FROM	MINIMUM		MAXIMUM														
																		POSITION IN.		POSITION IN.														
																		1	2	1	2													
															DEPTH	A	B	DEPTH	A	B														
201	3-4		45°	1	2	SPF	316	6.8			2.7				3.0		11.4									NO								
							100	6.8							1.2		11.4										100% NDRN EP							
							100	6.8							3.9		11.4										100% NDRN EP							
202	3-4		45°	1	2	SEP.	63	6.8			1.4				2.8		11.4	6.6		11.1	7.0		11.6	NO	5/30 TWD									
							50	6.8							2.1		11.4										50% EP							
							50	6.8							3.5		11.4										50% EP							
203	4-5		45°	1	2	SPF	141	6.8			.50	2.85					11.1								NO									
							100	6.8				2.6					11.1										100% NDRN EP							
REVIEWED BY: Howard Stoppelmann										LEVEL: II					DATE REVIEWED: 21 OCT 83										FIGURE NO: B2.01.004									
ANGLE-					0 DEG.					45 DEG.					60 DEG.					OTHER					ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES									

NUCLEAR POWER GENERATION DIVISION

BWNP-20531-2(12-81)

VOLUMETRIC TEST DATA FOR... 101

[illegible]

## VOLUMETRIC TEST DATA

BABCOCK & WILCOX COMPANY  
UTILITY POWER GENERATION DIVISION

BWNP-20502-4(11-82)

CUSTOMER: DUKE POWER COONEE II										CONTRACT NO: 599-0442-										COMPONENT: PRESSURIZER																																							
DESCRIPTION: PC.6 TO 4 & 40, PTS. 3-5 AND 6-8																																																											
ID# 2PZR-WP28										PROCEDURE: IST-130 REV. 18										MATERIAL: CS					THICKNESS: 4.750 IN.					TEST SURFACE: OD																													
NO. POSITIONS: 4					DISTANCE: 12.0"					REFERENCE: 19										CAL. SHEET: 460044					CAL. SHEET: 460045					CAL. SHEET:																													
BEAM DIRECTION 0 LONG 6 SHEAR										LIMITED EXAM <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES (IF SO WHY)										ANGLE: 35°					ANGLE: 60°					ANGLE:																													
EXAMINER: <i>Bray: J. J. J.</i>										ID#: G0159					LEVEL: II					TIME START: 1222 HR.					TIME START: 1250 HR.					TIME START: HR.																													
EXAMINER: <i>John C. J.</i>										ID#: W9276					LEVEL: II					TIME STOP: 1246 HR.					TIME STOP: 1259 HR.					TIME STOP: HR.																													
NOTES:										PART TEMP: 80°F										PART TEMP: 80°F					PART TEMP: °F																																		
										DATE: 19 OCT 83										DATE: 19 OCT 83					DATE:																																		
										CAL. BLOCK: 40339										WELD INFORMATION & 0° THICKNESS																																							
										DWG. #IST-002-002										SURFACE-#2					HTH-					SURFACE-#1																													
										FCA(S) 21 OCT 83										SEE					WD-					DATA																													
										N/A										BM-					MIN-					BM-																													
										83-004										HAZ-					MAX-					HAZ-																													
1ST SCAN										THERMOMETER ID# 9-ST-07										60° REQUIRED										N																													
2ND SCAN										60° NOT REQUIRED										A																																							
ONE SCAN DUE TO HIGH RAD.																																																											
IND. NO.	POSITION OR PART ITEM	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	MAX AMP & DAC	DEPTH (IN.)	LGT			CRYSTAL	DISTANCE (INCHES)				THROUGH WALL DIMENSION				DAMP	REMARKS																																						
								20%	50% OR HMA	100%		A	B	I	2	MINIMUM		MAXIMUM																																									
																POSITION IN.	POSITION IN.	DEPTH	POSITION IN.			DEPTH																																					
																							I	2	I	2																																	
A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B																																										
601	3-4	35°	1	2	SPF	224	7.1			85		2.3		7.6								NO	TO NOTCH																																				
							7.0					1.9		7.6									100% EP																																				
							7.0					2.75		7.6									100% EP																																				
602	3-4	35°	1	2	SEP	125	7.1		1.05			2.3		7.5	6.9	7.1	7.3		8.1	NO	HMA																																						
							7.0					1.65		7.5								50% EP																																					
							7.0					2.7		7.5								50% EP																																					
603	4-5	35°	1	2	SPF	141	7.0			60	2.6			7.2						NO	TO NOTCH																																						
							7.0				2.3			7.2								100% EP																																					
REVIEWED BY: <i>Howard Stoppelman</i>										LEVEL: II										DATE REVIEWED: 21 OCT 83										FIGURE NO: B2.01.004																													
ANGLE-										0 DEG.										45 DEG.										60 DEG.										OTHER										ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES									

NUCLEAR POWER GENERATION DIVISION

BWNP-20531-2(12-81)

## VOLUMETRIC TEST DATA FORM 101

[illegible]

☐ NO SCANSURFACE ☐ 1

BEAM DIRECTION

☐ 1 ☐ A☐ LIMITED SCAN,☐ 2,☐ 2 ☐ B,

BETWEEN POINTS \_\_\_\_\_ AND \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_

TO \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_ INCHES FROM WELD  $\phi$ .FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER \_\_\_\_\_

DUE TO: \_\_\_\_\_

☐ NO SCANSURFACE ☐ 1

BEAM DIRECTION

☐ 1 ☐ A☐ LIMITED SCAN,☐ 2,☐ 2 ☐ B,

BETWEEN POINTS \_\_\_\_\_ AND \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_

TO \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_ INCHES FROM WELD  $\phi$ .FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER \_\_\_\_\_

DUE TO: \_\_\_\_\_

☐ NO SCANSURFACE ☒ 1

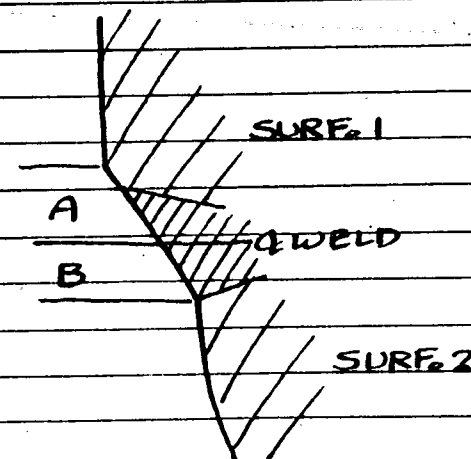
BEAM DIRECTION

☐ 1 ☒ A☒ LIMITED SCAN,☐ 2,☒ 2 ☒ B,360 DEGREES, 2.6 INCHES FROM WELD CENTERLINE.FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER 35°DUE TO: SHELL TAPER.☐ NO SCANSURFACE ☐ 1

BEAM DIRECTION

☒ 1 ☒ A☒ LIMITED SCAN,☒ 2,☐ 2 ☒ B,360 DEGREES, 1.2 INCHES FROM WELD CENTERLINE.FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER 35°DUE TO: SHELL TAPER.BABCOCK & WILCOX  
NUCLEAR POWER GENERATION DIVISION

## NOTES:

PRESSURIZER, PG. 6 TO 4 & 40  
PTS. 3-5 AND 6-8, 2PZR-WP2B  
19 OCTOBER 1983CONTRACT NO. 599-0442FIGURE NO. B2.01.004PAGE 6 OF 8

BABCOCK & WILCOX  
NUCLEAR POWER GENERATION DIVISION

## NOTES:

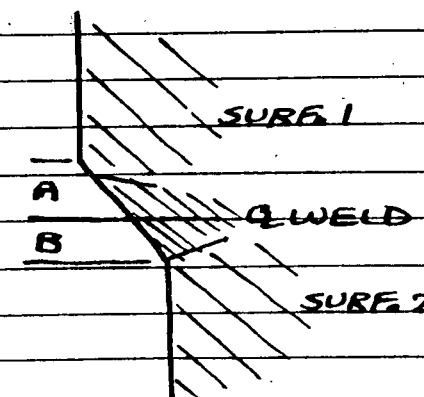
PRESSURIZER, PC.6 TO 4 & 40  
PTS. 3-5 AND 6-8, 2PZR-WP2E  
18 OCTOBER 1983

☐ NO SCAN SURFACE ☐ 1 BEAM DIRECTION ☐ 1 ☐ A  
☐ LIMITED SCAN, ☐ 2, ☐ 2 ☐ B,  
BETWEEN POINTS \_\_\_\_\_ AND \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_  
TO \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_ INCHES FROM WELD C.  
FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER \_\_\_\_\_  
DUE TO: \_\_\_\_\_

☐ NO SCAN SURFACE ☐ 1 BEAM DIRECTION ☐ 1 ☐ A  
☐ LIMITED SCAN, ☐ 2, ☐ 2 ☐ B,  
BETWEEN POINTS \_\_\_\_\_ AND \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_  
TO \_\_\_\_\_ INCHES FROM POINT \_\_\_\_\_ INCHES FROM WELD C.  
FOR ANGLES: ☐ 0° ☐ 45° ☐ 60° OTHER \_\_\_\_\_  
DUE TO: \_\_\_\_\_

☐ NO SCAN SURFACE ☒ 1 BEAM DIRECTION ☐ 1 ☒ A  
☒ LIMITED SCAN, ☐ 2, ☒ 2 ☒ B,  
360 DEGREES, 2.6 INCHES FROM WELD CENTERLINE.  
FOR ANGLES: ☒ 0° ☒ 45° ☐ 60° OTHER \_\_\_\_\_  
DUE TO: SHELL TAPER.

☐ NO SCAN SURFACE ☐ 1 BEAM DIRECTION ☒ 1 ☒ A  
☒ LIMITED SCAN, ☒ 2, ☐ 2 ☒ B,  
360 DEGREES, 1.2 INCHES FROM WELD CENTERLINE.  
FOR ANGLES: ☒ 0° ☒ 45° ☐ 60° OTHER \_\_\_\_\_  
DUE TO: SHELL TAPER.



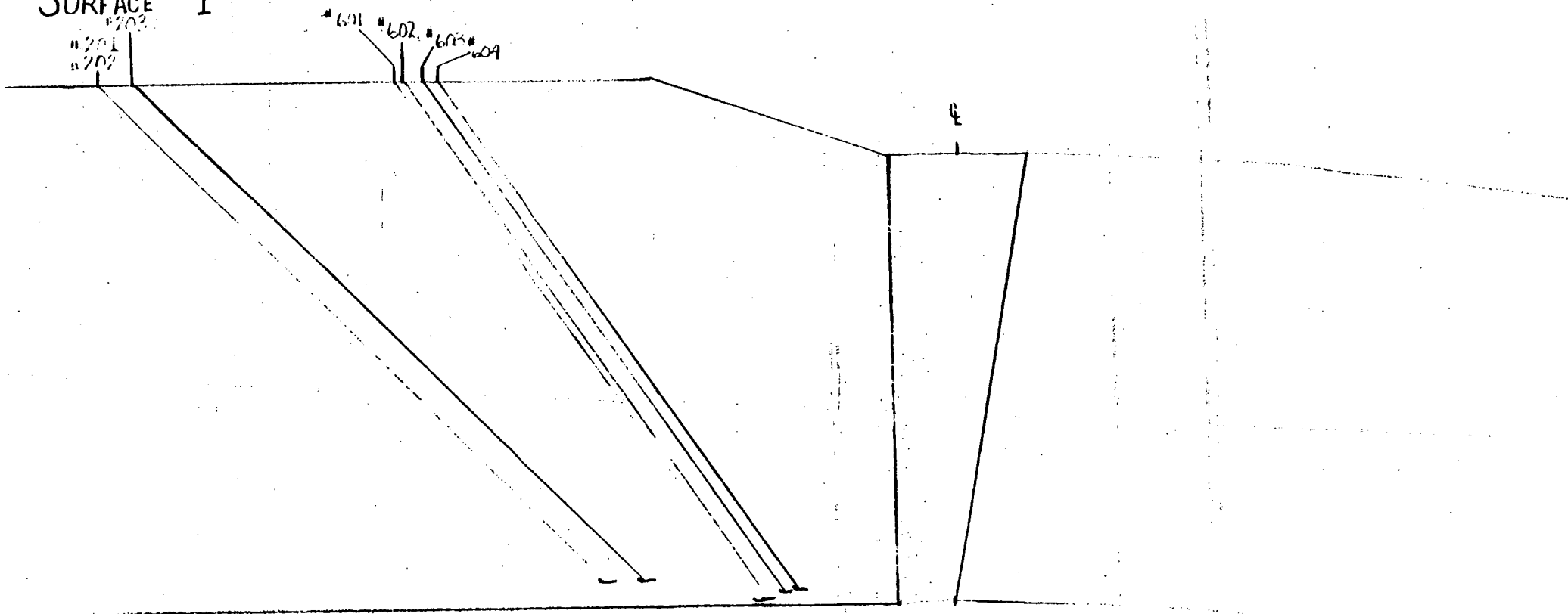
A = 2.6 in

B = 1.2 in

CONTRACT NO. 599-0442FIGURE NO. B2.01.004PAGE 7 OF 8

SURFACE #1

SURFACE #2



1 inch = 7.62m

CUSTOMER:	DUNE POWER CO.
PROJECT NO:	507-112
WELL NO:	2 PZR-WP 28
APPROVAL:	
SKT LEVEL:	
DATE:	12/1/83
FIGURE NO:	B2.1-1

TO

Mr. J. H. Wilcox

FROM

Cust.

Key Timing Unit III

FILE NO OR SET

OJS-II

SUBJ.

DATE

Curt Power Company

202R-WP22

10/31/83

In 1913 there were three detected and recorded.

They are both excluded for scope. The first plane is represented by indication number 201, 202, 601 & 602. The second plane was recorded by indication number 203, 603 & 604. Both are considered as far as indication

Plane #1

Indication number 201, 202, 601 and 602 are the same

plane. It is not recorded and excluded to different

indication. Indication 200 and 600 are not recorded. The next one is (Tail II) and a distinct machine. It will be recorded using the series II designation.

Plane #2

Indication number 203, 603, 604 and 605 represent the second plane. It is recorded and excluded to different indication. Tail II is distinct from the first plane.

This plane is acceptable.

10/1/83

TO

FROM

FILE NO OR REF

SUBJ.

DATE

TABLE I

Indications recorded at 5PF station

Ind.	Ia	Na	Dn	a	l	t	%	%/t	Status
201601	316**	80	.1	.39	2.7	7.01	.14	5.6%	unacceptable
203603	141	80	.1	.176	.85	7.01	.207	2.5%	acceptable

\*\* = Used the highest %

TABLE II

Indications recorded at 4PF station

Ind.	2a	d	S	a	l	t	%	%/t	Status
202602	.41	.2	0	.50	1.85	7.01	.27	7.1%	unacceptable
604	.21	.11	0	.21	.80	7.01	.26	3.0%	acc=!

\* = need further work to analyze

The thickness was derived by subtracting the thickness which was  
 normal thickness of .1875" from a total of .1875" + .035" =  
 7.2"

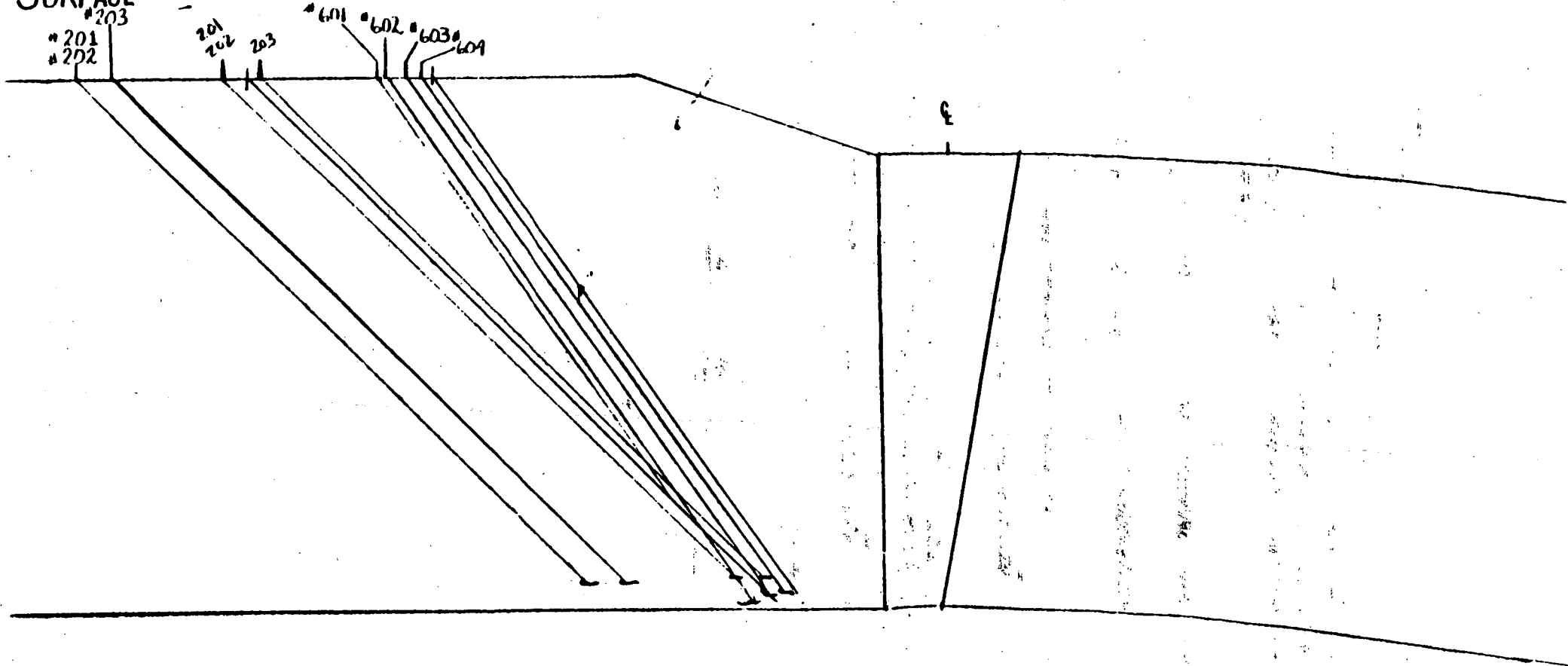
Reviewed by M. G. Hachen

11-1-83

Page 2 of 2

SURFACE

SURFACE #2



1 INCH = 2 INCHES

CUSTOMER:	DUKE POWER CO.
PROJECT NO:	599-0442
WELD NO:	2 PZR-WP 28
ANALYST:	
SNT LEVEL:	
DATE:	19 OCTOBER 1983
FIGURE NO:	B2.01.004

The following attachment is a summary of a comparison of indications recorded in the 1982 and 1983 outages. This comparison is made on a one-to-one basis. The form gives a general statement of the indications amplitude, length, TWD dimension, additional indications recorded and a comments section.

The chart that follows the comparison form has all the details of the differences in results as collected from the data sheets.

Indication Number		Amplitude			Length			TWD		
1982	1983	1982	1983	Diff.	1982	1983	Diff.	1982	1983	Diff.
201 *	201	251	316	+65	.70	2.7	+2.0"	1.421	1.39	-.03
202 O	202	90	63	-27	.45	1.4	+0.95	.4	.4	0
203 Δ	203	120	141	+21	.25	.5	+0.25	1.266	1.176	-.09
601 *	601	316	221	-95	1.20	.85	-.35	1.421	1.39	-.03
602 O	602	90	125	+35	.55	1.05	+0.5	.4	.4	0
603 Δ	603	200	141	-59	.90	.60	-.30	1.266	1.176	-.09
604	604	55	125	+70	.20	.8	+0.6	.1	.21	+0.11
O = Combined indication										
* = Combined indication										
Δ = Combined indication										
1 = Calculated size based on original amplitude and notch depth										
Used in										
Surface Slopes Low Evaluation - "SPF"										

Figure No. B2.01.004

1982 TO 1983 INDICATION COMPARISON

SITE: Ocone

UNIT: II

FIGURE NO.: B2.01.004

WELD OR LUG NO.: PC 6 + 4840

AMPLITUDES: In general the amplitudes have decreased.

LENGTHS: In general the lengths have increased.

THROUGH WALL DIMENSION (TWD): In general the TWD dimension has decreased.

ADDITIONAL INDICATIONS:

COMMENTS: The TWD dimension in the 1983 data has generally decreased. The reason is due to the thickness dimension used in 1982 was 6.0" and in 1983 was 7.01"

A more conservative evaluation was performed in 1982 and these flaws are acceptable. Refer to the following chart for detailed information.

Has Tearing Level III  
11/8/83

B. JACK & WILCOX  
NUCLEAR POWER GENERATION DIVISION  
VOLUMETRIC EXAMINATION EVALUATION REPORT

BWNP-20525-1(11-81)

EVALUATION NUMBER

8.3-001

METHOD: UT

RT

FILE NO. OR REFERENCE

WELD NO. OR IDENTIFICATION: PZR LUG, X-axis; 2 PZR W/P 8.2

APPLICABLE CODE YEAR AND ADDENDA: ASME Sec XI 1977 Thru Sum 78 Addenda

DATE OF INITIAL EXAMINATION:

RE-EXAMINATION:

REPORTABLE INDICATION NUMBER(S): 200, 201, 202, 203, 204, 400, 401, 402, 403, 404, 405, 406, 407, 408

COMMENTS:

ORIGINATOR: Howard Stoppelman LEVEL: II DATE: 18 OCT 83

PRELIMINARY DISPOSITION

ACCEPTANCE STANDARD: IWB-3516

COMMENTS: See attachments #1 and #2. Indication #200/400/401 was recorded as #200/402/403 in 1982 and shows an increase in size from 1982 to 1983. Indication #402/403/404 was recorded as #405 in 1982 and shows an increase in size from 1982 to 1983. Indication #406 was recorded as #407 in 1982 and also shows an increase in size. All calculations are shown in attachments 1 and 2.

☒ ACCEPTABLE INDICATION NUMBER(S) 201, 202, 203, 204, 405, 407, 408

☒ REJECTABLE INDICATION NUMBER(S) 200/400/401, 402/403/404, 200/400/401/402/403/404, 406

LEVEL III:

M. G. Hatcher

DATE: 10-21-83

FRACTURE MECHANICS ANALYSIS

☒ YES

☐ NO

DOCUMENT NUMBER 32-1148282-00

FINAL DISPOSITION

COMMENTS: See preliminary - All indications are acceptable per fracture mechanics analysis

☒ ACCEPTABLE INDICATION NUMBER(S) 200, 201, 202, 203, 204, 400, 401, 402, 403, 404, 405, 406, 407, 408

☐ REJECTABLE INDICATION NUMBER(S)

DATE: 11-3-83

FIGURE NO.

B2.03.001

BWNP-20502-4(11-82)

PAGE 1 OF 13

BABL & WILCOX  
NUCLEAR POWER GENERATION DIVISION

VOLUMETRIC TEST DATA FORM 101

BWNP-20531-2(12-81)

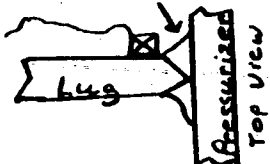
CUSTOMER: Duke Power OCN #2										CONTRACT NO: 591-0442					COMPONENT: Pressure Vessel							
EXAMINER: Tom E. Brown					ID: 02520			LEVEL II		DATE(S): 03 Oct 83												
EXAMINER: J. D. White					ID: N1932			LEVEL II														
IND. NO.	POSITION OR PART ITEM	ANGLE (DEG)	SURFACE	BEAM DIRECTION	STATUS	LAM.		LNGTH	WDTH	CRYSTAL DISTANCE FROM	THROUGH WALL DIMENSION				DAMPS	REMARKS						
						MAX AMP % DAC	DEPTH (IN.)				20%	50% OR HMA	100%	MINIMUM			MAXIMUM					
														DEPTH			POSITION IN.		DEPTH	POSITION IN.		
																	1	2		1	2	
						LENGTH				A	B	1	2									
202	4-1	45	2	1	SEP	200	2.4		2.2		10.7		17.7		2.40	18.0		2.5	17.6		NO	Max Amp HMA-TWD
						50	2.4				8.8		17.6									50% EP
						50	2.4				11.0		17.7									50% EP
						100	2.4				9.2		17.6		2.40	17.6		2.40	17.6			HMA-TWD
						120	2.4				9.6		17.6		2.40	17.7		2.45	17.5			HMA-TWD
						200	2.4				10.0		17.6		2.4	17.8		2.5	17.4			HMA-TWD
						100	2.4				10.4		17.6		2.4	17.6		2.4	17.6			HMA-TWD
203	4-1	45	2	1	SEP	60	2.45		1.0		7.7		17.5		2.45	17.6		2.5	17.4		NO	Max Amp 50% TWD
						50	2.45				7.0		17.5									50% EP
						50	2.45				8.0		17.5									50% EP
						50	2.45				7.4		17.5		2.45	17.5		2.45	17.5			50% TWD
204	4-1	45	2	1	SEP	251	2.4		2.2		2.5		17.55		2.3	17.85		2.5	17.4		NO	Max Amp HMA-TWD
						50	2.4				1.8		17.6									50% EP
						50	2.4				4.0		17.6									50% EP
						200	2.4				2.2		17.6		2.35	17.75		2.5	17.4			HMA TWP
						200	2.4				2.4		17.6		2.35	17.7		2.45	17.5			HMA TWP
						60	2.4				3.3		17.5		2.4	17.5		2.4	17.5			HMA TWP
						50	2.4				3.7		17.6		2.4	17.6		2.4	17.6			HMA TWP
REVIEWED BY: Howard Stoppelmann						LEVEL: II				DATE REVIEWED: 16 OCT 83					FIGURE NO.: B2.08.001							

[illegible]

# VOLUMETRIC TEST DATA

BABCOCK & WILCOX ANY  
UTILITY POWER GENERATION DIVISION

BWNP-20502-4(11-82)

CUSTOMER: DUKE POWER COONEE II										CONTRACT NO: 599-0442-										COMPONENT: Pressurizer														
DESCRIPTION: PC. 110 to 3 X Axis																																		
ID#: 2PZR-WP82-X										PROCEDURE: ISI 130 REV.18										MATERIAL: CS					THICKNESS: 3.5 IN.					TEST SURFACE: OD				
NO. POSITIONS: 8					DISTANCE: NA					REFERENCE: 10					CAL. SHEET: 460015					CAL. SHEET: 460020					CAL. SHEET:									
BEAM DIRECTION: 2 LONG 3 SHEAR LIMITED EXAM <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES (IF SO WHY)										ANGLE: 60					ANGLE: 60					ANGLE: <i>N</i>														
EXAMINER: <i>Tam O'Driscoll</i>										ID#: 02520					LEVEL: II					TIME START: 1017 HR.					TIME START: 0920 HR.					TIME START: <i>N</i> HR.				
EXAMINER: <i>Roger Gielgorse</i>										ID#: 20946					LEVEL: I					TIME STOP: 1300 HR.					TIME STOP: 1030 HR.					TIME STOP: <i>N</i> HR.				
NOTES: *1 Minimum TWO measurement is limited due to radius of lug weld.										DATE: 10 Oct 83					DATE: 11 Oct 83					DATE: <i>N</i>														
										*2 No end points on TWO measurements due to small size of indication.					DATE: 10 Oct 83					DATE: 11 Oct 83					DATE: <i>N</i>									
THERMOMETER ID# 15127										60° REQUIRED <input checked="" type="checkbox"/>					FCA(S) 83-004					WELD INFORMATION & 0° THICKNESS														
1ST SCAN: <i>Roger Gielgorse</i>										60° NOT REQUIRED <input type="checkbox"/>					DWG. ISI-JCN-002					SURFACE-#2					SURFACE-#1									
2ND SCAN: <i>T.O. Driscoll</i>															FCA(S) 83-004					Lug					Pressurizer									
															BM- See 0°					MIN- data					BM- 22 Jan 82									
															HAZ-					MAX-					HAZ-									
IND. NO.	POSITION OR PART ITEM	ANGLE (DEG.)	SURFACE	BEAM DIRECTION	STATUS	MAX AMP % DAC	DEPTH (IN.)	20%	50% OR HMA	100%	CRYSTAL	DISTANCE (INCHES)				THROUGH WALL DIMENSION				DAPS	REMARKS													
												A	B	I	2	MINIMUM		MAXIMUM																
																POSITION IN.	POSITION IN.	DEPTH	DEPTH															
																						1	2	1	2									
												A		B		A		B																
400	6-7	60	2	1	sep	125	1.8		2.6		1.5			16.2		1.6	16.4		2.0	15.8		NO	MAX HMA TND											
						50	1.75				.5			16.2									508EP											
						50	1.75				3.1			16.2									508EP											
						63	1.75				.7			16.2		1.75	16.2		1.75	16.2			HMA											
						125	1.8				1.3			16.3		1.6	16.5		1.9	16.0			130083 HMA HMA											
						100	1.75				1.7			16.1		1.7	16.25		1.85	16.0			HMA											
						125	1.8				2.1			15.9		1.75	16.2		2.0	15.8			HMA											
						63	1.8				2.5			16.1		1.8	16.1		1.8	16.1			HMA											
REVIEWED BY: <i>H. H. H. H. H.</i>										LEVEL: II					DATE REVIEWED: 16 OCT 83					FIGURE NO: B2. 08. 001														
ANGLE- 0 DEG. 45 DEG. 60 DEG. OTHER										ER REQUIRED: <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES																								
TND NOS 1 TO 199 200 TO 399 400 TO 599 600 TO 799										IF YES, STATE NUMBER: 83-001																								

VOLUMETRIC TEST DATA Form 101

CUSTOMER: DUKE POWER COMPANY OCONEE #2										CONTRACT NO: 599-0442				FIGURE NO: B2.08.001				
EXAMINER: <i>Tom J. Brien</i>		ID# 02520		LEVEL <i>II</i>		DATE(S): 10 Oct 1983												
EXAMINER: <i>Ryan Zickler</i>		ID# 20946		LEVEL <i>I</i>														
IND. NO.	POSITION OR PART ITEM	ANGLE (DEG)	SURFACE	BEAM DIRECTION	STATUS	LAN.		LENGTH	WIDTH	CRYSTAL DISTANCE FROM	THROUGH WALL DIMENSION				DAMPS	REMARKS		
						MAX AMP % DAC	DEPTH (IN.)				MINIMUM		MAXIMUM					
											DEPTH	POSITION IN.		DEPTH			POSITION IN.	
												1	2				1	2
400	cont. 6-7	60	2	1	Sep	125	1.8			2.9	16.1	1.7	16.3	2.0	16.0		HMA TWD	
401	6-7	60	2	1	Sep	100	2.6		.60	.60	14.3	2.4	14.5	2.7	14.0	NO	50% TWD	
						50	2.5			.30	14.2						50% EP	
						50	2.5			.90	14.2						50% EP	
402	6-7	60	2	1	Sep	100	1.5		1.5	5.7	16.3	1.3	16.8	1.75	15.9	NO	50% TWD	
						50	1.5			4.3	16.3						50% EP	
						50	1.5			5.8	16.3						50% EP	
						50	1.5			4.7	16.5	1.5	16.5	1.5	16.5		50% TWD	
						100	1.5			5.1	16.3	1.4	16.8	1.7	16.1		50% TWD	
						63	1.5			5.5	16.3	1.4	16.5	1.6	16.0		50% TWD	
403	6-7	60	2	1	Sep	80	2.7		.70	4.8	13.75	2.0	14.0	2.3	13.6	NO	50% TWD	
						50	2.3			4.6	13.9						50% TWD	
						50	2.3			5.3	13.9						50% EP	
404	6-7	60	2	1	Sep	80	1.1		.6	4.9	17.6	*see note	1.2	17.3	*1		50% TWD	
						50	1.1			4.7	17.6						50% EP	
						50	1.1			5.3	17.6						50% EP	
405	6-7	60	2	1	Sep	50	2.2		.1	16.4	16.0	2.2	16.0	2.2	16.0		see note #2	
	6-7	60			No		other			recordable	indications.							

REVIEWED BY: *Harold P. Brown*

LEVEL: *II*

DATE REVIEWED: *16 OCT 83*

PAGE *5* OF *13*

**BABCOCK & WILCOX**

BWNP-20531-2(12-81)

**METRIC TEST DATA FORM 101**

OWNER: <u>DUKE POWER CO. MCNEE #II</u>										CONTRACT NO: <u>599-0442</u>										COMPONENT: <u>PRESSURIZER</u>																			
INNER: <u>Tan 2.2000</u>										ID# <u>0-2520</u>										LEVEL <u>II</u>										DATE(S): <u>11 OCT 83</u>									
INNER: <u>Pages 2-2000</u>										ID# <u>2-0946</u>										LEVEL <u>I</u>										Cal. Sheet: <u>460020</u>									
																														Time start: <u>0920</u>									
																														Time stop: <u>1030</u>									
POSITION OR PART ITEM	ANGLE (DEG)	SURFACE	BEAM DIRECTION	STATUS	LAM.		LNTH	WDTH	(INCHES)				THROUGH WALL DIMENSION				DAMPS	REMARKS																					
					MAX AMP % DAC	DEPTH (IN.)			20%	50% OR NMA	100%	CRYSTAL DISTANCE FROM	MINIMUM		MAXIMUM																								
							DEPTH	POSITION IN.					DEPTH	POSITION IN.																									
								1 A						2 B	1 A	2 B																							
8-5	60	2	1	SEP	80	2.1		1.6		2.0		16.0		2.0	16.5		2.4	15.3		NO	50% TWD																		
					50	2.1				.6		16.0									50% EP																		
					50	2.2				2.2		15.9									50% EP																		
					63	2.1				1.0		16.0		2.0	16.5		2.4	15.8			50% TWD																		
					50	2.2				1.4		16.2		2.0	16.5		2.3	16.0			50% TWD																		
					63	2.2				1.8		16.0		2.0	16.4		2.6	15.1			50% TWD																		
8-5	60	2	1	SEP	80	2.0		.4		10.9		16.1		2.0	16.2		2.2	15.8		NO	50% TWD																		
					50	2.0				10.6		16.0									50% EP																		
					50	2.0				11.0		16.0									50% EP																		
8-5	60	NO OTHER RECORDABLE INDICATIONS																																					
2-3	60	2	1	SEP	60	2.25		.6		10.1		16.2		2.0	16.8		2.3	15.8		NO	50% TWD																		
					50	2.05				9.8		16.1									50% EP																		
					50	2.1				10.4		16.2									50% EP																		
2-3	60	NO OTHER RECORDABLE INDICATIONS																																					
4-1	60	NO RECORDABLE INDICATIONS																																					

VIEWED BY: H. J. [Signature]

LEVEL: II

DATE REVIEWED: 16 OCT '83

FIGURE NO.: 82-08.001

Figure No.: B208.001 Customer: DUKE POWER ONS-2 ER No.: 83-001 Date: 10-19-83  
m. h. Hochen

X-AXIS VERTICAL SUPPORT LUG EVALUATION LUG 1-2-3-4

Indication Numbers	$l_1$	$\frac{a_1}{2a_1}$	S	$t_1$	$\frac{a_1}{l_1}$	$\frac{a_1}{t_1}$	Status	Remarks
202	.50	$2a_1 = .10$	1.0	3.5	.10	14%	acceptable	separate/subsurface
203	.15	$2a_1 = .05$	1.0	3.5	.17	<1%	acceptable	separate/subsurface
204	.20	$2a_1 = .15$	1.0	3.5	.37	2%	acceptable	separate/subsurface
408	.48	$2a_1 = .30$	1.2	3.5	.31	4.3%	acceptable	separate/subsurface
	$l_2$	$\frac{a_2}{2a_2}$	S	$t_2$	$\frac{a_2}{l_2}$	$\frac{a_2}{t_2}$		
202/203	.50	$2a_2 = 4.0$	7.0	18.9	$\frac{MAX}{.50}$	10.6%	acceptable	combined/subsurface
408	.48	$2a_2 = .60$	8.5	18.9	$\frac{MAX}{.50}$	1.6%	acceptable	separate/subsurface
204	.20	$2a_2 = .22$	1.8	18.9	$\frac{MAX}{.50}$	5.8%	acceptable	separate/subsurface

Reviewed by Gary Tarning Laci III  
 10/20/83

ATTACHMENT #1

Figure No.: B2.08.001 Customer: DUKE POWER ONS-2 ER No.: 83-001 Date: 10-19-83  
M. J. Hoche

X-AXIS VERTICAL SUPPORT LUG EVALUATION LUG 5-6-7-8

Indication Numbers	$l_1$	$\frac{a_1}{2a_1}$	S	$t_1$	$\frac{a_1}{l_1}$	$\frac{a_1}{t_1}$	Status	Remarks
200, 400, 401	1.17	$2a_1 = .90$	.80	3.5	.38	13%	unacceptable	combined/subsurface
402, 403, 404	2.05	$2a_1 = 1.2$	1.10	3.5	.29	17%	unacceptable	combined/subsurface
407	.20	$2a_1 = .20$	1.3	3.5	.50	3%	acceptable	separate/subsurface
201	.1*	$2a_1 = .1^*$	1.25	3.5	.50	1%	acceptable	separate/subsurface
405	.1*	$2a_1 = .1^*$	1.30	3.5	.50	1%	acceptable	separate/subsurface
406	.55	$2a_1 = .60$	.90	3.5	MAX .50	8.6%	acceptable	separate/subsurface
	$l_2$	$\frac{a_2}{2a_2}$	S	$t_2$	$\frac{a_2}{l_2}$	$\frac{a_2}{t_2}$		
<sup>404</sup> 200, 400, 401, 402, 403	2.24	$a_2 = 5.8$	.10	18.9	MAX .50	31%	unacceptable	combined/surface
407	.20	$2a_2 = .40$	7.9	18.9	MAX .50	1%	acceptable	separate/subsurface
201	.1*	$2a_2 = .1^*$	6.5	18.9	MAX .50	<1%	acceptable	separate/subsurface
405	.1*	$2a_2 = .1^*$	2.5	18.9	MAX .50	<1%	acceptable	separate/subsurface
406	.55	$a_2 = 2.2$	.60	18.9	MAX .50	12%	unacceptable	separate/surface

\* assumed dimension

Reviewed by Gary Terring Level III  
 10/20/83

DOCUMENT #2

**PRESSURIZER**

**OCCUPANT UNIT 2 PRESSURIZER LUG X-AXIS**

18.9"

180°

21.4"

4.0"

3.5"

2.5"

2.4"

1.6"

1.2"

0.5"

1.35"

1.4"

1.0"

1.5"

1.8"

2.4"

2.35"

2.50"

2.00"

2.02"

2.04"

100

Technical drawing of a rectangular structure, likely a cross-section of a building or a container. The drawing includes the following dimensions and labels:

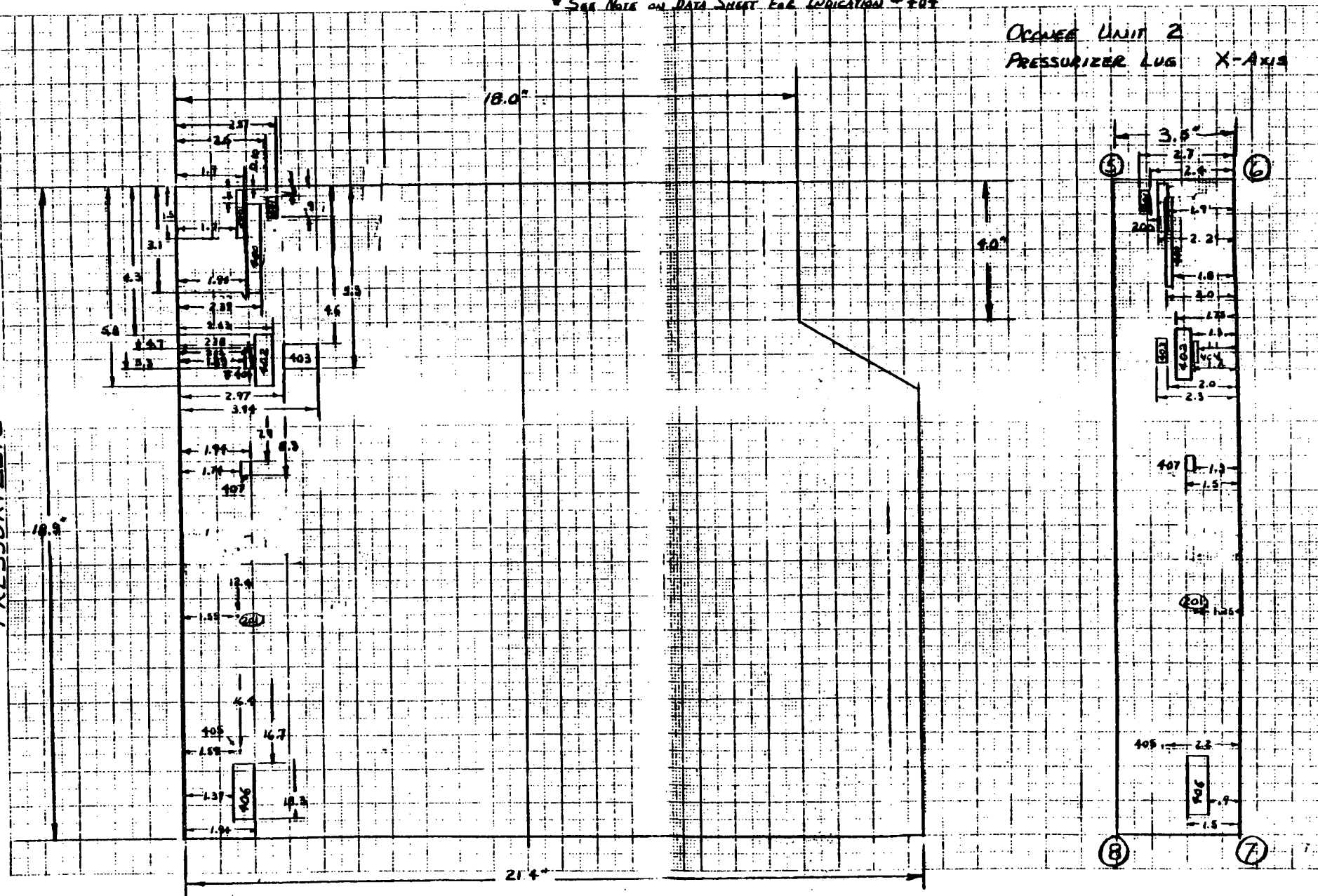
- Top horizontal dimension: 3.5
- Top right corner label: 2
- Left vertical dimension: 1
- Internal horizontal dimension (top): 2.5
- Internal horizontal dimension (middle): 2.4
- Internal horizontal dimension (bottom): 2.35
- Internal vertical dimension (left): 1.6
- Internal vertical dimension (middle): 1.2
- Internal vertical dimension (right): 2.0
- Internal vertical dimension (bottom): 2.0
- Internal vertical dimension (bottom right): 2.4
- Bottom horizontal dimension: 2.5
- Bottom right corner label: 4

## 21.4

\* SEE NOTE ON DATA SHEET FOR INDICATION #101

OCMEG UNIT 2  
PRESSURIZER LUG X-AXIS

- PRESSURIZER -



The following attachment is a summary of a comparison of indications recorded in the 1982 and 1983 outages. This comparison is made on a one-to-one basis. The form gives a general statement of the indications amplitude, length, TWD dimension, additional indications recorded and a comments section.

The chart that follows the comparison form has all the details of the differences in results as collected from the data sheets.

1982 TO 1983 INDICATION COMPARISON

SITE: Ocone

UNIT: II

FIGURE NO.: B2.08.001

WELD OR LUG NO.: 2P2R WP82 X AXIS

AMPLITUDES: In general the amplitudes have increased.

LENGTHS: In general the lengths have increased.

THROUGH WALL DIMENSION (TWD): The TWD measurements have indicated some increase on a few indications and others have reduced by a slight amount.

ADDITIONAL INDICATIONS:

1982 - 403, 404

1983 - 201, 202, 203, 404, 405, 408

COMMENTS: The added indications in 1983 did not correlate to any data in 1982. The added indications of 1982 were not detected in 1983. Refer to the following chart for detailed information.

Ray Terney and II  
11/10/82

Indication Number		Amplitude			Diff.	Length		Diff.	TWD		Diff.
1982	1983	1982	1983	1982		1983	1982		1983		
200	200	63	200	+137	.3	1.4	+1.1	.25	.3	+1.05	
201	204	112	251	+139	1.9	2.2	+1.3	.3	.2	-.1	
400	403	90	80	-10	.7	.7	0	.4	.3	-.1	
401	401	70	100	+30	.45	.60	+1.15	.75	.3	-.45	
402	400	100	125	+25	1.5	2.6	+1.1	.5	.4	-.1	
403	—	159			.5			.15			
(Air P21) 404	—	100			.55			.25			
405	402	141	100	-41	.3	1.5	+1.2	.25	.45	+1.2	
406	407	63	80	+17	.40	.4	0	.15	.2	+1.05	
407	406	80	80	0	.95	1.6	+1.65	.2	.4	+1.2	
	201		50			.1			0		
	202		200			2.2			.1		
	203		60			1.0			.05		
	404		80			.6		—			
	405		50			.1			—		
	408		60			.6			.3		

September 16, 1986

M. S. Tuckman, Manager  
Oconee Nuclear Station

Attention: Rod Emory

Re: Oconee Nuclear Station, Unit 2  
NCI #0-1918  
Reactor Vessel Head Lifting Lug  
File: OS-161

In reference to the above NCI, the Lifting Lug is acceptable as is based on the laminations being in planes parallel to the applied stress.

If you have any questions, please contact J. M. Davis at 373-7392.

S. B. Hager, Chief Engineer  
Civil/Environmental Division

*W H Taylor Jr*

W. H. Taylor, Jr.  
Supervising Design Engineer

JMD/cmr

cc: C. W. Hendrix, Jr.  
C. L. Ray, Jr.  
M. S. Sills  
O. J. Gilstrap  
R. F. Wardell  
Central Records

October 31, 1986

G. W. Hallman, Manager  
Nuclear Maintenance

Attention: C. W. Hendrix, Jr.

Re: Oconee Nuclear Station  
Core Flood Tank  
ISI, 1986  
File: OS-161

Please reference Nuclear Engineering Services letter by Mr. Zane Dargaty dated 10/2/86. This letter describes flaws detected by NES in the 1986 ISI of the Unit II Core Flood Tank A weld 2CFTA-VLV-HD.

We have completed our investigation and conclude based on the following data that the subject weld is acceptable for the remainder of plant life.

1. Only flaws #13 & #16 were evaluated, using the following data:

flaw #13 surface a = 0.417" l = 1.03"  
flaw #16 surface a = 0.480" l = 0.70"  
thickness = 2.7"

2. We have used these flaw dimensions based on our examination of the data attached to Mr. Dargaty's letter, rather than the values quoted in the letter. No proximity check was performed. It is our understanding that the QA department will review our use of these dimensions and will in addition perform any necessary proximity checks.

Our analysis is documented in calculation OSC-2287. Please contact J. M. Davis at 3-7392 if you have questions.

S. B. Hager, Chief Engineer  
Civil/Environmental Division

*W. H. Taylor, Jr.*

W. H. Taylor, Jr.  
Supervising Design Engineer

JMD/cmr

cc: C. L. Ray, Jr. ~~C. B. Cheezum, Jr.~~  
M. S. Sills R. L. Cope, Jr.  
Central Records

[illegible]

Dev./Station OCONEE NUCLEAR STATION Unit \_\_\_\_\_ File No. OSC-2287  
Subject IN-SERVICE INSPECTION EVALUATION  
By JMP Date 10/27/96  
Sheet No. I.1 of \_\_\_\_\_ Problem No. \_\_\_\_\_ Checked By MFL Date 10/30/96

### SCOPE

This calculation will be used to document any calculations necessary to support conclusions drawn or actions taken regarding the findings of any in-service inspections at Oconee Nuclear Station.

### QA CONDITION 1

### ORGANIZATION

Each major vessel/component in each unit will be in a separate section of the calculation.

The comprehensive section index will be maintained as a page of section I.

Each section will have its own detailed contents.

Assumptions, Computer Results, Conclusions - see appropriate part

Dev./Station OLCONEE NUCLEAR STATION Unit \_\_\_\_\_ File No. OSC-2287Subject IN-SERVICE INSPECTION EVALUATIONBy JMD Date 10/27/86Sheet No. I.2 of \_\_\_\_\_ Problem No. \_\_\_\_\_ Checked By MPL Date 10/30/86  
see below for further revisionsSECTION INDEX

<u>Sect #</u>	<u>Contents</u>	<u>Added/Rev/Deleted</u> <u>at Rev #</u>	<u>Sign Off</u>
<u>I.</u>	<u>Preface</u>	<u>0</u>	<u>see above</u>
<u>II.</u>	<u>Core Flood Tank A, UNIT II</u>	<u>0</u>	<u>see above</u>

## SECT II. CORE FLOOD TANK - UNIT II

Part #	Description	Calc. pages	Attach. ..	rev #	Sign-off	
					orig/ date	ck/ date
1	1986 NES ISI of weld 2 - CETA-VLV-HD, Core Flood Tank A	II.2 to II.5	N/A	0	see above	

Dev./Station OCONEE NUCLEAR STATION Unit        File No. OSC-2287  
 Subject IN-SERVICE INSPECTION EVALUATION  
 By Jms Date 10/27/86  
 Sheet No. II.2 of        Problem No.        Checked By MFL Date 10/30/86

## CORE FLOOD TANK

### UNIT II

Part 1 1986 Nuclear Engineering Services ISI of  
 Core Flood Tank A  
 Weld ZCFTA-VLV-HD

### References

1. letter dated 10/2/86 from Mr. Zane Dargatz of Nuclear Energy Services to Mr. C.B. Cheezem, Duke Power Co [QA] with attachments
  - a. procedure qualification record 4 sheets
  - b. calibration data sheet nos 0280-0001 to -0003 with beam spread sketches
  - c. ultrasonic instrument linearity record, etc 11 sheets
  - d. indication data Raster sets DA 0001 to 0005, 14 pgs
  - e. indication data Raster sets DA 0006 to 0011, 23 pgs
  - f. indication data Raster sets DA 0012 to 0015, 16 pgs
  - g. General Notes, 16 pages
2. B&W calc 32-1150190-00, 44 pages; 2-9-84  
 ISI-Flaw Evaluations - Core Flood Tank Dump Valve Flange to Upper Head Weld (WJ203)
3. B&W Vol exam eval report # 57-1124650-00, 3-29-85.  
 56 pages including 5 pages of calc # 32-1156334-00  
 ISI-Eval-Core Flood Tank, Dump Valve Nozzle (WJ203)  
 (Evaluation Report # 85-004)

Dev./Station OCONEE NUCLEAR STATION Unit        File No. OSC 2287  
Subject         
By Jmo Date 10/27/86  
Sheet No. II.3 of        Problem No.        Checked By MPL Date 10/30/86

Codes

ASME Sect XI Appendix A, 1980

Assumptions

Based on Mr Dargatz's letter, this calculation will address only 1986 flaw numbers 13 and 16.

Flaw # 13 will be evaluated at  $a = 0.417"$ ,  $l = 1.03"$ , surface

Flaw # 16 will be evaluated at  $a = 0.480"$ ,  $l = 0.70"$ , surface

$t = 2.7"$

No proximity check is performed.

Dev./Station OCONEE NUCLEAR STATION Unit \_\_\_\_\_ File No. OSC-2287  
 Subject \_\_\_\_\_  
 By JMD Date 10/28/86  
 Sheet No. II.4 of \_\_\_\_\_ Problem No. \_\_\_\_\_ Checked By MFL Date 10/30/86

### Evaluation

Correlation of the NES data with the B&W data is used in the evaluation

1. NES flaw #16 is apparently the same as B&W 1985 flaw # 6022 which is enveloped within composite flaw # 620/621/622/401/402 and therefore requires no further evaluation at this time.
2. NES flaw # 13 is near B&W 1985 flaw # 602/403. NES examination showed no other flaws in the vicinity, therefore #13 will not be combined with #602/403.

The 1985 B&W report evaluated flaw # 608/609/610/611 which has  $a/l = 0.5$  (max allow) using scaling  
 $a/t = 0.481$

from a previous evaluation of 1984 flaw # 615/616.  
 $K_I$  for #608/609/610/611 = 20.02.

Comparison of NES #13 to B&W #608 etd by ASME XI method.

$a/l$	0.4	0.5	
$a/t$	0.15	0.48	
$M_m$	1.1	1.1	
$M_b$	0.83	0.3	
$Q$	~2.0	~2.2	
$\Delta \sigma_m$	18.7	18.7	(B&W 1984 report)
$\Delta \sigma_b$	4.0	4.0	"
$a$	0.47	1.3	
$\Delta K_I$	19.2	29.66	(Compare 20.02 by BIGIF) (see B&W report)

$$\Delta K_I = (\sigma_m M_m + \sigma_b M_b) \sqrt{\frac{\pi a}{Q}} \quad 19.2 < 29.66 \therefore \#13 \text{ ok}$$

Dev./Station OCONEE NUCLEAR STATION Unit \_\_\_\_\_ File No. OSC - 2287

Subject \_\_\_\_\_

By JMDDate 10/29/86Sheet No. II.5 of \_\_\_\_\_

Problem No. \_\_\_\_\_

Checked By MPLDate 10/20/86Conclusion

NES flaws #13 & #16 as described in reference 1 -  
and under assumptions above are ok for remainder  
of plant life.

# **nes**

**NUCLEAR ENERGY SERVICES**

October 2, 1986  
Refer to: 028-1907

Mr. C. B. Cheezem  
Duke Power Company  
500 South Church Street  
Charlotte, NC 28242

Dear Mr. Cheezem:

Enclosed are the preliminary analysis results of the UDRPS data for weld 2-CFTA-VLV-HD, Core Flood Tank A, Oconee Unit 2. No recordable indications were detected in the 0°, 45°, and 60° manual examinations or in the 45° automated examination.

For the 70° automated examination, 19 indications were recorded. Of these, five were spot indications with no through-wall dimension (TWD), and ten indications had minimum TWDs such that when corrected for beam spread, the TWD became essentially zero. The four remaining indications, numbers 4, 10, 13, and 16, exhibited a sufficient TWD such that further analysis was performed.

Indication 4 was recorded during the examination of the first 1/2T but occurred in the second 1/2T, falling out of the DAC range. As this indication corresponds to Indication 13 recorded during the second 1/2T examination, no further analysis was performed on Indication 4.

The TWD of Indication 10 was satisfactorily reduced when corrected for either 50 percent DAC or Half Maximum Amplitude (HMA) beam spread. Further analysis shows that the indication, which appeared on two consecutive sweeps, may be in fact two separate indications, but were not sized as such.

Indication 13 did not satisfactorily reduce in size when either beam spread correction was applied. A further review of the data shows a varying amplitude along the indication which may be indicative of several flaws whose responses have run together.

Beam spread correction also did not satisfactorily reduce the TWD of Indication 16. Also, this indication did not display similar characteristics to Indication 13. Further analysis suggests that Indication 17 may be the tip diffraction from 16. This would not however give a reduction in the TWD.

Mr. C. B. Cheezem  
028-1907  
Page 2

nes

From a brief review of the 1985 data, it appears there is a correlation between Indications 611 and 10, 602 and 13, and 622 and 16. There does not appear to be a correlation between the uncorrected TWD values.

<u>1985 Data</u>		<u>September 1986 Data</u>	
IWD No.	TWD	IWD No.	TWD
611	.20	10	.87
602	.85	13	1.04
622	2.00	16	1.10

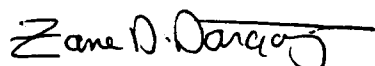
As a result, further evaluation is recommended for Indications 13 and 16.

Dave Cowfer and myself would like to meet with you in Charlotte during the week of October 6, 1986 to discuss the examination results. Either Dave or myself will be in contact to set a date and time.

If there are any questions, please do not hesitate to call.

Very truly yours,

NUCLEAR ENERGY SERVICES



Zane D. Dargatz

/amm  
enclosures

#### 11.0 Classes 1 and 2 Repairs and Replacements

As required by ASME Section XI, 1980 Edition, a record of the Classes 1 and 2 repairs and replacements for work performed from June 5, 1985 to October 15, 1986 is provided and is included in this section of the report. The individual work request documents are on file at the Oconee Nuclear Station.

REPAIRS/REPLACEMENT LOG  
ASME SECTION XI-1980

Page 1 of 14

WR#	UNIT	DESCRIPTION	ASME CLASS	QC DOC. REQ. OR EXEMPT	DATE COMP. REVIEWED/DATE	ANII REVIEWED
95863B	2	Erected New Support 2-03-0-551-DE002	* <sup>(2)</sup>	QCL-14A	2-24-84 CRH-12-19-84	12-19-84 <sup>(3)</sup>
"	"	Installed new structural items 2-03-1401A-JWC-1203	"	"	3-19-85 MJW-6-4-85	6-5-85
"	"	Remove U-bolt, replace with structural items 2-03-1401A-JWC-1205	"	"	3-15-85 MJW-3-26-85	3-27-85 <sup>(3)</sup>
"	"	Removed old support 2-03-1401A-JWC-1201 Installed new support	"	"	3-15-85 MJW-3-26-85	3-27-85 <sup>(3)</sup>
"	"	Remove & replace structural hardware 2-03-0-1439B-H52	"	"	4-18-85 MJW-5-8-85	5-8-85 <sup>(3)</sup>
"	"	Remove U-bolt install new hanger 2-03-1401A-JWC-1206	"	"	3-15-85 MJW-4-9-85	4-9-85 <sup>(3)</sup>
"	"	Install support 2-03-1401A-DE005	"	"	3-15-85 MJW-5-10-85	5-10-85 <sup>(3)</sup>
"	"	Install support 2-03-1439B-H54	"	"	12-5-83 MJW-3-6-85	3-6-85 <sup>(3)</sup>
"	"	Replaced spring cans 2-03-0-1439A-H61	"	"	3-28-85 CRH-8-20-85	8-24-85
"	"	Install new support 2-03-0-551-DE001	"	"	12-8-83 CRH-12-19-84	12-19-84 <sup>(3)</sup>
"	"	Install new snubber 2-03-0-1401A-R14	"	"	3-31-85 CRH-8-24-85	8-24-85
"	"	Replace hydraulic snubber with mechanical snubber 2-03-1401A-R15	"	"	3-25-85 CRH-5-10-85	5-10-85 <sup>(3)</sup>
"	"	Install shims 2-03-0-1401A-R8	"	"	3-24-85 MJW-3-26-85	3-27-85 <sup>(3)</sup>
50599 E	"	Replaced pipeclamp on 2-03A-1-0-1400A-H106	"	"	5-7-86 LSH-5-22-86	6-2-86

Date Period From 6-5-85 to 10-15-86<sup>(1)</sup> Date

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NOTES:

- (1) UNIT #2 1986 REFUELING OUTAGE #8 START-UP LEAK TEST  
(2) INDETERMINATE FROM WORK REQUEST REVIEW  
(3) DATE PERIOD FROM 4-1-84 TO 6-4-85 DATE

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50616C	2	Repair Hanger 2-01A-0-1441-DE062	* (2)	QCL-14A	4-5-85 JMC 6-7-85	6-7-85
57362C	2	Replaced 8, 1-1/8" x 8 1/2" studs on RC-68	1	QCL-13A	3-25-85 JMC 6-7-85	6-7-85
57361C	2	Replaced 8, 1-1/8" x 8 1/2" studs on RC-67	1	QCL-13A	3-24-85 JMC 6-7-85	6-7-85
50162D	2	Machined OTSG-B FDW Noz #12	2	exempt	4-1-85 JMC 6-7-85	6-10-85
50876D	2	Repair defect in base material of FDW-46	2	NDE-60D, 30A1, 22A1, 40, 10A, 12A	4-5-85 JMC 6-7-85	6-10-85
50163D	2	Machined FDW Noz #12 on OTSG 'B'	2	exempt	4-1-85 JMC 6-12-85	6-12-85
51874C	2	Machine '2B', OTSG Sec Handholes 1, 2 & 3	2	exempt	3-29-85 JMC 6-12-85	6-12-85
97647B	2	"NSM-22462" Install Inspection Port in OTSG-B	2	exempt	6-25-85 JMC 6-25-85	6-25-85
97579B	2	"NSM-22459" Replace 2FDW-103	2	alt NDE per NDE- and Leak Test	6-25-85 JMC 6-25-85	6-25-85
57742B	2	Repaired/reinstalled 2-01A-4-1403D-R17, 56-0-1478A-H-9, 2-01A-0-1441-R7	* (2)	QCL-14A	4-12-85 JRD 6-5-85	6-5-85
50878D	2	Install new rear bracket at hanger 2-50-0-1481A-H4 & H5	"	QCL-14A	4-15-85 JRD 6-11-85	6-11-85
50885D	2	Replaced bolt on 2-13-7-0-1400A-SR3	"	QCL-14A	4-22-85 JRD 6-23-85	6-24-85
50905D	2	Replaced bent rod on 2-07A-6-0-1400A-H65	"	QCL-14A	4-25-85 JRD 6-23-85	6-24-85
50889D	2	Replaced bolt on 2-01A-3-0-1401B-R6	"	See WR 50251D for QCL-14A	5-1-85 JRD 7-8-85	7-18-85

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WR#	UNIT	DESCRIPTION	ASME CLASS	QC DOC. REQ. OR EXEMPT	DATE COMP.	ANII REVIEWED
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50618D	2	Installed washers on inaccessible hydraulic snubbers (listed below) cont.	* <sup>(2)</sup>	QCL-14A	4-17-85 IRD 7-8-85	7-18-85
"	"	2-01A-0-1481B-H2A	"	"	"	"
"	"	2-01A-0-1481B-H8B	"	"	"	"
"	"	50-0-1479A-H1A	"	"	"	"
"	"	2-0/A-0-1481B-H2B	"	"	"	"
"	"	2-01A-0-1401B-R15	"	"	"	"
"	"	2-03A-1480A-H1B	"	"	"	"
"	"	50-0-1481A-H3	"	"	"	"
"	"	2-50-0-1066A-RCPM-2A1-SS1 (Rev. 0)	"	"	"	"
"	"	2-50-0-1066A-RCPM-2A1-SS2 (Rev. 1)	"	"	"	"
"	"	2-50-0-1066A-RCPM-2A2-SS1 (Rev. 1)	"	"	"	"
"	"	2-50-0-1066A-RCPM-2A2-SS2 (Rev. 0)	"	"	"	"
"	"	2-50-0-1066A-RCPM-2A2-SS3 (Rev. 1)	"	"	"	"
"	"	2-50-0-1066A-RCPM-2B2-SS1 (Rev. 1)	"	"	"	"

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50618D	2	Installed washers on inaccessible hydraulic snubbers (listed below) cont.	* <sup>(2)</sup>	QCL-14A	4-17-85 JRD 7-8-85	7-18-85
"	"	2-50-0-1066A-RCPPM-2B2-SS2 (Rev. 0)	"	"	"	"
"	"	54B-0-1477-49B	"	"	"	"
22377B	2	Repair Hand Hole (base metal) on OTSG 'B' #8	2	QCI-1A	7-8-85 JMC 7-19-85	7-19-85
51950D	2	Replaced CRD #12 with new one	1	Leak Test	6-26-85 JMC 7-11-85	7-22-85
51444D	2	Removed 2B OTSG Secondary Handhole #4 by machining by B&W proc. Torqued and reinstall	2	exempt	6-25-85 JRD 7-10-85	7-16-85
51437D	2	Removed 2A OTSG Lower secondary manway & replaced (6) studs #3, 7, 11, 13, 15 & 18,	2	exempt	6-25-85 JRD 7-30-85	7-30-85
"	"	replaced (4) nuts on #20 & 11. Replaced manway.	"	"	"	"
51436D	2	Removed 2A OTSG Lower secondary Handhold #5 for pulse cleaning, replaced (1) #4 stud, reinstalled	2	exempt	6-25-85 JRD 7-30-85	7-30-85
"	"	#5 handhole.	"	"	"	"
51433D	2	Removed 2A OTSG Lower secondary handhole #2 for pulse cleaning/sludge lancing, replaced (5) nuts	2	exempt	6-25-85 JRD 7-30-85	7-30-85
"	"	and (2) studs on #4 & 6, reinstall handhole.	"	"	"	"
51434D	2	Removed 2A OTSG Lower secondary handhole #3 for pulse cleaning, replaced (5) Nuts and (2) studs	2	exempt	6-25-85 JRD 7-30-85	7-30-85
"	"	on studs 5 & 6, reinstalled handhole.	"	"	"	"

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50887D	2	Install spacer washer on 2-01A-3-0-1401B-R8	* <sup>(2)</sup>	QCL-14A	5-7-85 JRD 6-29-85	7-1-85
54300C-4	2	Hanger 2-57-0-1481A-H11	"	QCL-14A	4-16-85 JMC 6-28-85	6-28-85
54300C-4	2	Hanger 2-57-0-1481A-H14	"	QCL-14A	4-16-85 JMC 6-28-85	6-28-85
54300C-4	2	Hanger 2-57-0-1481A-H12	"	QCL-14A	4-16-85 JMC 6-28-85	6-28-85
54300C-4	2	Hanger 2-57-0-1481A-H21	"	QCL-14A	4-16-85 JMC 6-28-85	6-28-85
51681D	2	Repair pipe clamp on 2-01A-3-0-1401B-H20	"	QCL-14A	6-20-85 JMC 7-11-85	7-15-85
54300C	2	Repair of RCP 2B1 - Replaced 20 studs - QA #45540	1	NDE 44A, 44B	4-19-85 JRD 7-31-85	7-31-85
54300C	2	Replaced 20 (4") nuts	1	QCL-13A	4-19-85 JRD 7-31-85	7-31-85
51265D	2	Removed 2B1 RCP seals, rebuilt & replaced. Installed staging coil, gasket & bolts (5/8") & torqued.	1	MP/O/A/1720/16	6-27-85 JRD 8-20-85	8-20-85
50251D	2	Install spacer washers on the following hydraulic snubbers.	* <sup>(2)</sup>	QCL-14A	8-6-85 JRD 8-23-85	8-23-85
"	"	#2-01A-4-0-1403D-R17	"	"	"	"
"	"	#2-01A-3-0-1401B-R9	"	"	"	"
"	"	#2-01A-4-1-01403D-R6	"	"	"	"
"	"	#2-01A-3-0-1401B-R6	"	"	"	"

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50251D cont.	2	2-51A-1-0-1444-SR-150	* (2)	QCL-14A	8-6-85 JRD 8-23-85	8-23-85
"	"	2-01A-2-0-1403D-SR-7	"	"	"	"
"	"	2-13-7-0-1400A-SR-3	"	"	"	"
50618D	2	Installed washers on inaccessible hydraulic snubbers (listed below)	"	QCL-14A	4-17-85 JRD 7-8-85	7-18-85
"	"	53A-0-1479A-H1C	"	"	"	"
"	"	50-0-1479A-H2C	"	"	"	"
"	"	51A-0-1479A-H2A	"	"	"	"
"	"	03A-0-1480A-H3A	"	"	"	"
"	"	03-0-1480A-H7A	"	"	"	"
"	"	03-0-1480B-H6B	"	"	"	"
"	"	50-0-1480-A-H10	"	"	"	"
"	"	50-0-1480-A-H11	"	"	"	"
"	"	50-0-1481A-H5	"	"	"	"
"	"	57-0-1481A-RJP-H0801	"	"	"	"

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19886B	2	Disassemble/reassemble LP-56 (3")	2	EXEMPT	9-8-86 BJD-10-01-86	10-02-86
50862E	"	Removed 2HP-286 and Replaced with DMV-270 Type B & W Valve	"	VT-2	9-26-86 LSH-10-04-86	10-04-86
52679E	"	Replaced Disc on MS-8 and Reassembled	"	VT-2 per WR52583E	9-13-86 BJD-10-06-86	10-06-86
50737E	"	Replaced disc on 2PT-21	1	EXEMPT	9-15-86 BJD-10-09-86	10-09-86
52676E	"	Disassembly/reassemble MS-10	2	VT2 per WR52583E	9-24-86 BJD-10-10-86	10-10-86
91375C	"	Repalced disc & Stem on IA-91	"	VT2 per WR 52583E	9-22-86 BJD-10-10-86	"
53833D	"	Tack Welded Lock Pin to Impeller Nut & Capscrew & Lock Pin to Capscrew & Bearing Housing on R.C.	1	EXEMPT	8-8-86 GLB-8-21-86	8-21-86
"	"	Pump to be installed as R.C. Pump #2B2.	"	"	"	"
53832D	"	Same as above on WR 53833D except for R.C. Pump to	"	"	"	"
"	"	be installed as R.C. Pump 2A1.	"	"	"	"
97176B	"	Replaced Vlvs. 2RC-24,25,29,30,43,44,46,47	1&2	NDE 25A	9-26-86 GLB-10-03-86	10-03-86
51340E	"	Replace 2BA-33	2	EXEMPT	9-17-86 GLB-10-03-86	"
50861E	"	Replace 2HP-284	"	"	10-02-86 CRH-10-03-86	10-04-86
53682E	"	Replace Vlv. 2MS-PT 24	"	"	9-12-86 GLB-10-04-86	"

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50251D	2	Install spacer washers on the following hydraulic snubbers	* <sup>(2)</sup>	QCL-14A	8-6-85 JRD 8-23-85	8-23-85
"	"	2-13-7-0-1400A-SR1	"	"	"	"
"	"	2-01A-3-0-1401B-R7	"	"	"	"
"	"	2-03A-1-0-1401A-SR50	"	"	"	"
"	"	2-01A-2-1-0-1401A-SR3	"	"	"	"
"	"	2-01A-3-0-1401B-R8	"	"	"	"
"	"	2-54A-3-0-1439A-R16	"	"	"	"
"	"	2-53A-2-0-435B-SR100	"	"	"	"
"	"	2-53B-5-0-435B-SR1000	"	"	"	"
"	"	2-54A-3-0-435B-R101	"	"	"	"
"	"	2-53B-2-0-436E-SR1000	"	"	"	"
"	"	2-54A3-0-435B-R2B	"	"	"	"
51860E	2	Repair Branch Line MS 01A4-23ZB	2	NDE-25A	10-03-86 CRH-10-13-86	10-13-86
91327C	"	Repair Seat Leak on 2FDW-123	"	EXEMPT	10-03-86- GLB-10-13-86	"

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51855D	2	Replaced spacer washer on S/R # 2-13-7-0-1400B-SR4	* (2)	QCL-14A	2-28-86 LSH-2-28-86	2-28-86
50598E	"	Replace existing pipe clamp 2-03A-1-0-1400A-H105	"	"	5-15-86 LSH-6-3-86	6-3-86
01216C	"	Replace bent rod on hanger 2-07A-6-0-1400A-H55	"	"	6-8-86 LSH-7-31-86	7-31-86
99094B	"	Replace figure 260 with a figure 295 on hanger 2-03A-1-0-1400A-H115	"	"	8-6-86 LSH-9-3-86	9-3-86
99392B	"	Modified hanger 2-07A-6-0-1400A-H56 Removed unnecessary item and added weld metal	"	"	9-29-86 LSH-10-03-86	10-3 -86
99401B	"	Remove 2-05A-411A-H4074 and re-build	"	"	10-02-86 LSH-10-04-86	10-04-86
53088E	"	Replace Vlv. 2SD-4	2	EXEMPT	9-26-86 GLB-10-04-86	"
54007E	"	Replace Vlv. 2HP-322	1	"	9-29-86 GLB-10-04-86	"
53078E	"	Replace 2HP-390	2	"	10-02-86 CRH-10-04-86	10-05-86
53076E	"	Replace 2HP-146	"	"	10-2-86 CRH-10-4-86	"
98016B	"	PreFab RC Make up metering Run NSM 22460	"	"	12-6-85 CRH-10-4-86	10-6-86
53080E	"	Replace 2HP-147	"	"	10-3-86 CRH-10-4-86	10-5-86
99034B	"	Modify RC Make up System NSM 22460	"	"	10-1-86 CRH-10-4-86	10-6-86
53079E	"	Replace 2HP-389w/1" Anchor Darling 095-337	"	"	10-5-86 DB-10-5-86	10-5-86

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98713B	2	Modify S/R 2-51B-1436C-DE006, 2-GH-RS-7677-02 2-51B-1444-DE019	* (2)	QCL-14A	10-04-86 MRH-10-09-86	10-09-86
91375C	"	Repair 2IA-91	2	EXEMPT	9-27-86 GLB-10-10-86	10-10-86
22634B	"	Replace 2HP-234	"	"	9-26-86 GLB-10-10-86	"
02334C	"	Replace 2HP-241	"	"	9-26-86 GLB-10-10-86	"
50861E	"	Replace 2HP-284	2	VT-2	10-03-86 LSH-10-03-86	10-03-86
53080E	"	Replace 2HP-147	"	"	10-02-86 LSH-10-04-86	10-04-86
53078E	"	Replace 2HP-390	"	"	10-02-86 LSH-10-04-86	10-05-86
53076E	"	Replace 2HP-146	"	"	10-02-86 LSH-10-04-86	"
53079E	"	Replace 2HP-389	"	"	10-05-86 LSH-10-05-86	"
51340E	"	Replace 2BA-33	"	"	09-12-86 LSH-10-05-86	10-06-86
99026B	"	Change Internals of Valve 2HP-31	"	VT2 per WR52583E	09-13-86 LSH-10-10-86	10-10-86
54330E	"	Replace 3FDW-270 with 1" Anchor Darling DMV-191 Type	"	EXEMPT	10-11-86 LSH-10-17-86	10-17-86
54328E	"	Replace 3FDW-254 with 1" Anchor Darling DMV-191 Type	"	"	10-14-86 LSH-10-17-86	"
54336E	"	Replace 3HP-68 with 1" Anchor Darling DMV-195 Type	"	"	10-13-86 LSH-10-17-86	"

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97176B	2	A&B 1.5" Valves Exempt Replace 2RC-24,25,29,30,43 44,46,47	1 2	QCL-15 for VT-2 See MP1770/10	9-26-86 TGW-10-03-86	10-03-86
98552B	"	Replace 5/8" Dia. Hydrogen Recombin. Flange Conn. ISI Class 2 Bolts/Nuts	2	VT-2 Per QCL-15 And MP1720-16	9-11-86 TGW-10-03-86	"
51341E	"	Replace 2BA-5 (2")	2	Pneumatic Leak Test Per QCL-15 &	09-18-86 TGW-10-04-86	0-04-86
"	"	"	"	MP 1720-15	"	"
99012B	"	Addition of Pipe&Valves 1" or less	3	EXEMPT	10-03-86 TGW-10-04-86	"
53078E	"	Replacement of Valve 2HP-390	2 & 3	QCL-15 VT-2 MP 1720-10	10-01-86 TGW-10-04-86	"
98577B	"	1" or less Piping Modification	2	EXEMPT	09-24-86 TGW-10-06-86	10-06-86
99034B	"	Modification of RC Makeup Sys $\geq$ than 1" Piping	"	QCL-15 VT MP 1720-10	09-29-86 TGW-10-06-86	10-07-86
99046B	"	Modif. Tubing HPI FE0157 less than 1"	2	EXEMPT	09-25-86 TGW-10-04-86	10-08-86
98892B	"	RVLIS Mod. Piping less than 1"	2	"	10-04-86 TGW-10-08-86	"
98713B	"	Replace 2HP-71 2HP-302	"	QCL-15 VT-2 MP 1720-10	10-06-86 TGW-10-10-86	10-10-86
51700E	"	Replace 2SD-27	"	EXEMPT	10-10-86 TGW-10-10-86	10-10-86
57361C	"	Replaced RC-67 with 8(1 1/2") stud and 16(1 1/8") Nuts	1	QCL-13A, VT-2 per WR 52583E	9-11-86 BJD-09-30-86	10-02-86
24376B	"	Replaced stem & disc on CF-9 (1")	"	EXEMPT	9-11-86 BJD-10-01-86	"

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51689E	2	Replace Vlv 2RC-R01	1	EXEMPT	9-19-86 GLB-10-04-86	10-04-86
53080E	"	Replace 2HP-147	2	"	10-02-86 CRH-10-04-86	"
02356C	"	Disassembled flow orifice of 2HP-188 & installed 1" threaded rod & 16 1" Nuts & reassembled	1	QCL-13 VT-1 QCL15 pr wr52583E	9-4-86 DLS-9-17-86	9-17-86
51896D	"	Secpmdary handhole cover #6-machine gasket surface 2 & replace handhole cover (OTSG2A)/New studs	"	VT2 per WR 52583E	9-4-86 LSH-10-01-86	10-01-86
51895D	"	Secondary handhole cover #5 on OTSG2A. Machine gasket & seating surface & replace cover/new studs	"	"	9-4-86 LSH-10-01-86	"
51894D	"	Secondary handhole #4 OTSG2A/machine gasket seating surface & replace cover/new studs	"	"	9-4-86 LSH-10-01-86	"
50370E	"	Remove 2B OTSG lower secondary manway, replaced bolting mat'l	"	"	9-7-86 LSH-10-01-86	"
51060D	"	Remove 2B OTSG handhole #5/machine gasket surface replace cover/new studs, lower secondary	"	"	9-7-86 LSH-10-01-86	"
50368E	"	Remove 2B OTSG lower secondary handhole #6 Reinstalled added new studs	"	"	9-7-86 LSH-10-01-86	"
51511E	"	Repair leaking flange on CRDM (#60)	1	"	9-29-86 LSH-10-15-86	10-15-86
51853D	2	Replaced spacer washer on 2-51A-1-0-1444-SR 150	* (2)	QCL-14A	12-2-85 JRD-12-19-85	12-19-85
51855D	"	Replace spacer washers on S/R #s 2-01A-1-1-0-1401B-H40, 2-01A-1-1-0-1401B-H41	"	"	2-28-86 LSH-2-28-86	2-28-86
"	"	2-01A-1-1-0-1401B-H43, 2-01A-3-0-1401B-R5, 2-01A-4-0-1403D-R18, 2-01A-4-0-1403D-R22,	"	"	"	"
"	"	2-01A-2-1-0-1401A-SR3, 2-01A-2-0-1403D-SR5, 2-01A-2-0-1403D-SR7, 2-13-7-0-1400A-SR1,	"	"	"	"

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REPAIRS/REPLACEMENT LOG  
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WR#	UNIT	DESCRIPTION	ASME CLASS	QC DOC. REQ. OR EXEMPT	DATE COMP. REVIEWED/DATE	ANII REVIEWED
54005E	2	Replace 2MS-189	2	EXEMPT	9-29-86 GLB-10-6-86	10-6-86
98892B	"	Installed piping tap off of center CRD.M.	"	"	10-1-86 GLB-10-6-86	"
98893B	"	Install 4 piping taps and Sir's for RVLIS	1 & 2	"	10-5-86 GLB-10-7-86	10-7-86
29092B	"	Repair 2GWD-30	2	"	9-18-86 GLB-10-9-86	10-9-86
29125B	"	Repair 2BS-12	"	"	9-19-86 GLB-10-9-86	"
99012B	"	Install Hangers 2-14A-436E-H5448, 2-14A-436E-H5429, 2-15-436N-H5430	*(2)	QCL-14A	10-3-86 MRH-10-4-86	10-4-86
98990B	"	Modify Hangers 50-0-1479G-H1F, 2-50-0-1479G-6004, 55-0-1479F-SA-H3005, 2-50-0-1479H-6034,	"	"	10-3-86 MRH-10-5-86	10-5-86
"	"	2-50-0-1479H-6030, 2-50-0-1479H-6035, 2-50-1479G-6002, 2-50-0-1479G-6001,	"	"	"	"
"	"	51A-0-1479E-GPD-H0018, 2-50-0-1066A-RCPM-2A1-SS3	"	"	"	"
98578B	"	Modify Hangers 2-51A-435C-DE010, 2-51A-3-0-437B-SR161, 2-51A-0-435B-H196, 2-51A-0-1439C-H163	"	"	"	"
"	"	2-51A-435C-DE009	"	"	"	"
98577B	"	Modify hanger 2-1-0-1444-H5363	"	"	9-26-86 MRH-10-4-86	10-4-86
98892B	"	Modify hangers 2-57-1422-H6432, 2-57-1422-H6431	"	"	10-1-86 MRH-10-6-86	10-6-86
99136B	"	Modify hangers 2-01A-0-1441-DE065, 2-01A-1441-H4071 2-01A-0-1441-H38, 2-01A-1441-DE064, 2-01A-1441-H42	"	"	10-2-86 MRH-10-8-86	10-8-86

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