

Donald K. Cobb  
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**DTE Energy**



10 CFR 50.55a

August 2, 2006  
NRC-06-0054

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington D C 20555-0001

Reference: Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43

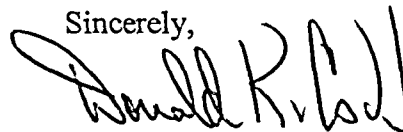
Subject: Inservice Inspection Summary Report

Enclosed is the Summary Report of the 2006 Inservice Inspection (ISI) activities performed at Detroit Edison Company's Fermi 2 Nuclear Power Plant. This report represents a summary of the ISI activities for the Second Ten-Year Inspection Interval beginning February 17, 2000 through the Eleventh Refueling Outage, which was completed on May 5, 2006.

This report is being submitted in accordance with ASME Section XI, 1989 Edition, paragraph IWA-6230, for IWB, IWC, IWD, and IWF inspections, and the 1992 Edition, including the 1992 Addenda, for IWE inspections.

Should you have any questions or require additional information, please contact Mr. Ronald W. Gaston, Manager - Nuclear Licensing, at (734) 586-5197.

Sincerely,



Enclosure

cc: D. H. Jaffe  
C. A. Lipa  
NRC Resident Office  
Regional Administrator, Region III  
M. Wilson - ANII  
R. J. Aben Jr. - Chief Inspector  
Michigan Department of Labor & Economic Growth  
Bureau of Construction Codes and Fire Safety - Boiler Division

A047

# FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
(Name and Address of Owner)
2. Plant Fermi-2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport MI 48166  
(Name and Address of Plant)
3. Plant Unit 2      4. Owner Certificate of Authorization (if required) N/A
5. Commercial Service Date 01-23-88      6. National Board Number for Unit N/A
7. Components Inspected See Program Table in Section 7.0 and 8.0 of attached Summary Report

Component Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
RPV	Combustion Engineering	CE-67211	M345962M	21085
Class 1, 2, & 3 Components (1)	Wisner & Becker Townsend & Bottom	Various	M345962M	N/A
Associated Supports	Chicago Bridge & Iron	Various	M345962M	N/A
	Reactor Controls Inc.	Various	M345962M	N/A
	Walbridge Aldinger Co.	Various	M345962M	N/A
Containment Vessel	Chicago Bridge and Iron	C-4512	N/A	N/A

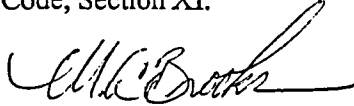
Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

- (1) Certificate of Accreditation No. OWN-159 for N-3 Data Report.

## FORM NIS-1 (back)

8. Examination Dates 12/04/04 to 05/05/06
9. Inspection Interval from 02/17/00 to 02/17/10
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. (A listing of all required examinations and those completed to date for Interval 2, Period 3, Refuel Outage Eleven (RF-11), is included in the ISI Summary Report of the 2006 Inservice Inspection, Section 7.
11. Abstract of Conditions Noted (included as Section 5 with IWE in Section 8 of Summary Report).
12. Abstract of Corrective Measures Recommended and Taken (included as Section 5 and 8 of Summary Report).

We hereby 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 July 24 2006 Signed Detroit Edison Co. By   
 Owner Lead ISI Engineer

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 Michigan of and employed by HSB CT of One State Street, Hartford, Conn 06102, have inspected the components described in this Owners Data Report during the period of 12/4/04 to 08-01-06 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. 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 August 1 2006

Signed  Commissions MT 610  
 Inspector's Signature State, Province

ISI SUMMARY REPORT OF THE 2006 INSERVICE INSPECTION  
Refueling Outage RF-11  
at

Fermi 2 Nuclear Power Plant  
6400 N. Dixie Highway  
Newport, MI 48166

Detroit Edison Company  
2000 2nd Avenue  
Detroit, MI 48226

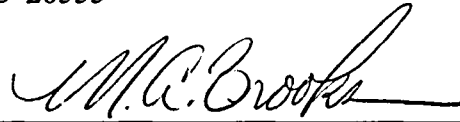
Commercial Service Date: January 23, 1988  
NB No. 21085 (RPV)

Michigan Boiler Serial Number  
M345962M

To:

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

Prepared by:



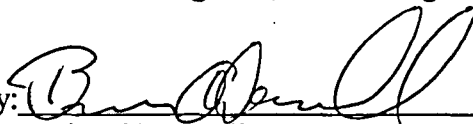
Marc A. Brooks  
Lead ISI Engineer, NDE Program Level III

Reviewed by:



Richard M. Hambleton  
Lead ISI Engineer, RVIM Program Level III

Approved by:



Brian O'Donnell  
Manager, Performance Engineering



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**SECTION 1**  
**INTRODUCTION**

## 1.0 INTRODUCTION

- 1.1 This report represents a summary of the Inservice Inspection (ISI) activities performed at Detroit Edison Company's Fermi 2 Nuclear Power Plant for the Second Ten-year Inspection Interval beginning February 17, 2000.

Fermi 2 - Program B (ASME Section XI, IWA-2420):

First Inspection Interval (1980-W'81 addenda) (01/23/88 – 02/16/00)\*

- |                             |                        |
|-----------------------------|------------------------|
| 1. First Inspection Period  | (01/23/88 - 06/10/91)  |
| a. First Refueling Outage   | (09/03/89 - 12/16/89)  |
| b. Second Refueling Outage  | (03/30/91 - 06/10/91)  |
| 2. Second Inspection Period | (06/11/91 - 01/03/95)  |
| a. Third Refueling Outage   | (09/12/92 - 11/07/92)  |
| b. Fourth Refueling Outage  | (04/12/94 - 01/03/95)* |
| 3. Third Inspection Period  | (01/03/95 - 12/31/98)* |
| a. Fifth Refueling Outage   | (09/27/96 - 01/03/97)  |
| b. Sixth Refueling Outage   | (09/07/98 - 10/29/98)  |

Second Inspection Interval (1989 Edition) (02/17/00 – 02/17/10)\*

- |                              |                              |
|------------------------------|------------------------------|
| 1. First Inspection Period   | (02/17/00 – 03/27/03)        |
| a. Seventh Refueling Outage  | (04/01/00 – 05/23/00)        |
| b. Eighth Refueling Outage   | (10/22/01 – 11/30/01)        |
| 2. Second Inspection Period  | (03/28/03 – 10/17/05)        |
| a. Ninth Refueling Outage    | (03/28/03 - 05/10/03)        |
| b. Tenth Refueling Outage    | (11/06/04 - 12/03/04)        |
| 3. Third Inspection Period   | (10/18/05 - end of interval) |
| a. Eleventh Refueling Outage | (03/25/06 - 05/05/06)        |

- \* Fermi 2 was in an extended outage that began on 12/25/93 following a Turbine/Generator failure and ended with the closing of the output breaker on 01/18/95. Because of the extended shutdown, the first inspection interval for Fermi 2 was extended by one additional year to 2/16/2000 as provided for in IWA-2430. The second inspection interval may be shortened by one year to maintain the interval pattern as required in IWA-2430(d).

- 1.2 Examinations were performed to satisfy the requirements (or portions thereof) of the following, as applicable:
- American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Division 1, "Rules for Inservice Inspection of Nuclear Power Plant Components," Inspection Program B as listed in the following Table A and Section 6 of this report.
  - NUREG-0313, Revision 2, Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping.
  - BWRVIP-75, Technical Basis for Revision of NRC Generic Letter 88-01 Inspection Schedules.
  - Fermi 2 Technical Requirements Manual TR 5.1.1, Augmented Inservice Inspection Program for Snubbers.
  - Augmented Inspection of selected components in accordance with the requirements as listed in the following Table A and Section 6 of this report.
  - BWROG NUREG-0619 Alternate Feedwater Nozzle Inspection Requirements, GE-NE-523-22-0292.

TABLE A

REQUIREMENT	DESCRIPTION	EXAM METHOD
<b><u>VESSELS</u></b>		
Sect. XI, 1989 Edition Appendix VIII, 1995 Edition, 1996 Addenda for UT as applicable	Pressure Vessel (B-A, B-D, B-H, C-A, C-B)	Surface and/or Automated Volumetric or Manual Volumetric
	Reactor Vessel Interior and welded attachments or core support structures (B-N-1, B-N-2)	Visual Examination
	Integral attachments for vessels (B-H, C-C)	Surface and/or Volumetric
	Pressure retaining bolting >2" diameter (B-G-1, C-D)	Surface and/or Volumetric
	Pressure retaining welds in CRD housing (B-O)	Surface and/or Volumetric
Sect. XI, 1992 Edition, 92 Addenda	Containment Inspection (IWE)	Visual
<b><u>PIPING</u></b>		
Sect. XI, 1989 Edition Appendix VIII, 1995 Edition, 1996 Addenda for UT as applicable	Pressure retaining Piping Welds (B-F, B-J, C-F)	Surface and/or Manual Volumetric or Automated Volumetric
	Integral attachment for piping pumps and valves (B-K-1, C-C, Code Case N-509)	Surface and/or Volumetric
<b><u>OTHER</u></b>		
1989 Edition	Pressure retaining partial penetration welds (B-E)	Visual Examination
	Pressure retaining bolting <2" diameter (B-G-2)	Visual Examination
	Pressure retaining bolting >2" diameter (B-G-1)	Visual Examination and /or Volumetric
	Pressure boundary component supports (F-A, Code Case N491-1)	Visual Examination
	Pump and Valve Internal Surfaces (B-L-2, B-M-2)	Visual Examination

TABLE A (continued)

REQUIREMENT	DESCRIPTION	EXAM METHOD
<b><u>PRESSURE TEST</u></b>		
1989 Edition	Interval 2 Pressure Testing (B-P, C-H, and D-B, Code Case N-416-1, Code Case N-498-1)	Visual Examination
<b><u>AUGMENTED</u></b>		
NUREG-0313, Rev. 2 and BWRVIP-75	Pressure retaining piping welds (B-F, B-J) IGSCC in BWR Austenitic Stainless Steel Piping	Manual Volumetric and/or Automated Volumetric
	Pressure retaining piping welds (Nonclassified)	Manual Volumetric
BWROG NUREG-0619 Alternative Feedwater Nozzle Inspections	Feedwater Nozzle Inner Blend Radii (GE-NE-523-A71-594)	Manual or Automated Volumetric - from outside surface
Fermi 2 Technical Requirements Manual TR 5.1.1	Safety Related Snubbers	Visual Examination
	Sampling of Safety Related Snubbers	Functional Testing
IE Notice 93-079	Core Shroud	Visual Examination
Generic Letter 94-03	Core Shroud Welds	Visual Examination
IEB 80-13	Core Spray and Spargers	Visual Examination
<b>Vendor Recommendations</b>		
SIL No. 459	Byron Jackson Recirculation Pump Shaft Cracking	Visual Examination
SIL No. 409	Incore Dry Tube Cracks	Remote Visual Examination
RICSIL No. 073	Incore Dry Tube Cracks	Remote Visual Examination
SIL No. 420	Jet Pump Sensing Lines and Support Brackets	Remote Visual Examination
SIL No. 433	Shroud Head Bolts	Remote Visual Examination

TABLE A (continued)

REQUIREMENT	DESCRIPTION	EXAM METHOD
<b><u>AUGMENTED (continued)</u></b>		
SIL No. 462	Access Hole Cover Cracking	Remote Visual Examination
SIL No. 465	Jet Pump Inlet Mixer	Remote Visual Examination
SIL No. 474	Steam Dryer Channel Cracking	Remote Visual Examination
SIL No. 551	Jet Pump Riser Bracket	Remote Visual Examination
SIL No. 554	Top Guide Beams	Remote Visual Examination
SIL No. 559	Top Guide Inspections	Remote Visual Examination
SIL No. 574	Jet Pump Adjusting Screw Tack Welds	Remote Visual Examination
SIL No. 588, Rev. 1	Top Guide and Core Plate Cracking	Remote Visual Examination
SIL No. 629	Inlet Mixer Wedge Damage in BWR Jet Pump Assemblies	Remote Visual Examination
SIL No. 644, Rev. 0, Supplement 1 and SIL No. 644, Rev.1	BWR Steam Dryer Integrity	Remote Visual Inspection
BWRVIP-03 Reactor Vessel and Internal Examination Guidelines	Reactor Vessel Internals Components	Remote Visual Examination, Ultrasonic and Eddy Current
BWRVIP-18-A Core Spray Inspection and Evaluation (I&E) Guidelines	Core Spray Internals Piping and Spargers	Remote Visual Examination
BWRVIP-25 Core Plate I&E Guidelines	Core Plate Components	Remote Visual Examination
BWRVIP-26-A Top Guide I&E Guidelines	Top Guide Components	Remote Visual Examination
BWRVIP-27-A BWR Standby Liquid Control System / Core Plate Differential Pressure I&E Guidelines	Core Differential Pressure and SLC Line Dissimilar Metal Nozzle Welds	Direct Visual Bare Metal VT-2

TABLE A (continued)

REQUIREMENT	DESCRIPTION	EXAM METHOD
<b><u>AUGMENTED (continued)</u></b>		
BWRVIP-38 Shroud Support I&E Guidelines	Shroud Support Components	Remote Visual Examination
BWRVIP-41, Rev. 1 Jet Pump Assembly I&E Guidelines	Jet Pump Components	Remote Visual Examination Automated Ultrasonic for Diffuser Adapter Welds
BWRVIP-47-A BWR Lower Plenum I&E Guidelines	Incore Guide/Dry Tubes	Remote Visual Examination
BWVRIP-48-A Vessel ID Attachment Weld I&E Guidelines	Vessel Internal Attachments	Remote Visual Examination
BWRVIP-49-A Instrument Penetration I&E Guidelines	Instrument Penetrations	Remote Visual Examination
BWRVIP-104 Evaluation and Recommendation To Address Shroud Support Cracking in BWRs	Shroud Support	Remote Visual and Volumetric
BWRVIP-139 Steam Dryer Inspection and Flaw Evaluation Guidelines	Steam Dryer	Remote Visual Examination
BWRVIP-76 BWR Core Shroud Inspection and Flaw Evaluation Guidelines	Core Shroud	Remote Methods as in BWRVIP-03



## **SECTION 2**

### **SUMMARY OF ASME CLASS 1 & 2 AND AUGMENTED EXAMINATIONS**

## 2.1 Interval 2, Period 3 RF11 Examinations

### RF11 EXAMS

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-A Reactor Vessel</b>	<b>Reactor Vessel Shell Welds</b>									
1-308A	Longitudinal Shell Weld	5360-5	UT	25/26	D-70389	4/8/06	4/14/06	4/14/06	06-0409	RPV Internal
1-308B	Longitudinal Shell Weld	5360-5	UT	25/26	D-70389	4/7/06	4/14/06	4/14/06	06-0409	RPV Internal
1-308C	Longitudinal Shell Weld	5360-5	UT	25/26	D-70389	4/5/06	4/14/06	4/14/06	06-0409	RPV Internal
1-308D	Longitudinal Shell Weld	5360-5	UT	25/26	D-70389	4/6/06	4/14/06	4/14/06	06-0409	RPV Internal
13-308	Shell to Flange from Shell	5360-5	UT	25/26	D-70389	4/2/06	4/14/06	4/14/06	06-0409	RPV Internal
5-319	Closure Head Circumferential	5360-5	UT	6	2667-58-1	4/10/06	4/12/06	4/13/06	RF-11-77	Refuel Floor
c1-306H	Bottom Head Meridional	5360-5	UT	6	2667-59-1	4/11/06	4/13/06	4/13/06	RF-11-78	Annulus,260,605'
2-319-D	Closure Head Meridional	5360-5	UT	6	2667-58-1	4/3/06	4/12/06	4/13/06	RF-11-73	Refuel Floor
2-319E	Closure Head Meridional	5360-5	UT	6	2667-58-1	4/3/06	4/12/06	4/13/06	RF-11-72	Refuel Floor
<b>B-D Reactor Vessel</b>	<b>Nozzle to Vessel Welds</b>									
4-318A	RPV Head Nozzle to Shell	5361-5	UT	6	2667-58-1	4/8/06	4/12/06	4/13/06	RF-11-75	Refuel Floor
4-318B	RPV Head Nozzle to Shell	5361-5	UT	6	2667-58-1	4/8/06	4/13/06	4/13/06	RF-11-76	Refuel Floor
<b>B-D Reactor Vessel</b>	<b>Nozzle Inner Bore Region</b>									
4-318A IRS	RPV Nozzle Inside Radius	5361-5	VT-1	15	N/A	4/7/06	4/12/06	4/13/06	RF-11-80	DW
4-318B IRS	RPV Nozzle Inside Radius	5361-5	VT-1	15	N/A	4/7/06	4/12/06	4/13/06	RF-11-80	DW
<b>B-F Class 1-Piping</b>	<b>RIISI Welds</b>									
SW-E11-2327-6WC	RHR - 24" Pipe to Pipe (DM/IGSCC)	2327-5	UT	3	SS-8-FER CS-07-FER	4/11/06	4/13/06	4/13/06	RF-11-01	DW, 95, 600'
<b>B-G-1 Bolting</b>	<b>Greater Than 2"</b>									
326-01 ( 23-45)	RPV Closure Studs > 2"	5362-5	UT	5	RPV Stud Cal.	3/31/06	4/2/06	4/4/06	RF-11-02	Refuel Floor
326-02 (23-45))	RPV Head Nuts > 2"	5362-5	VT-1	16	N/A	4/2/06	4/7/06	4/10/06	RF-11-03	Refuel Floor
326-03 ( 23-45)	RPV Washers & Bushings	5362-5	VT-1	16	N/A	4/4/06	4/7/06	4/12/06	RF-11-04	Refuel Floor
RPV ( 23-45)	RPV Threads in Flange	5362-5	UT	9	CSCL-52-FER	3/28/06	4/2/06	4/4/06	RF-11-07	Refuel Floor

Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
Fermi 2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport, MI 48166  
Commercial Service Date: 1-23-88 NB No. 21085 (RPV)

## RF11 EXAMS

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
RRC Studs (1 through 16)	Pump B Studs	5365-5	UT	5	B31-Stud	4/5/06	4/12/06	4/12/06	RF-11-05	DW, 135, 579
RRC Washers Set (1-16)	Pump B Nuts/Bush/Washers	5365-5	VT-1	16	N/A	4/5/06	4/12/06	4/12/06	RF-11-05	DW, 135, 579
<b>B-G-2 Bolting</b>	<b>2" and Less</b>									
B21-F013N-VBB	SRV Body/Bonnet Bolting	5352-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-08	DW, 47, 612'
B21-F022A-VBB	MS Valve Bonnet Bolting	5352-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-09	DW, 5, 590'
B21-F028C-VBB	MS Bonnet Bolting	5354-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-10	RB1-ST,F12,589'
B21-F032B-VBB	FW Bonnet Bolting	3536-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-11	RB1-ST,F12,593'
B21-F076A-VBB	FW Bonnet Bolting	3537-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-12	RB1-ST,F12,593'
B21-F076B-VBB	FW Bonnet Bolting	3536-5	VT-1	16	NA	4/4/06	4/10/06	4/10/06	RF-11-13	RB1-ST,F12,593'
B31-F023B-VBB	Recirc. Valve Bonnet Bolting	5359-5	VT-1	16	NA	4/4/06	4/7/06	4/12/06	RF-11-14	DW, 145, 574'
B31-F031B-VBB	Recirc. Valve Bonnet Bolting	5359-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-15	DW, 110, 578'
E11-F015B-VBB	RHR Valve Bonnet Bolting	2327-5	VT-1	16	NA	4/8/06	4/12/06	4/12/06	RF-11-16	RB1, B12, 594'
E11-F608-VBB	RHR Valve Bonnet Bolting	2299-5	VT-1	16	NA					DW, 153, 608'
E41-F002-VBB	HPCI Valve Bonnet Bolting	2297-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-18	DW, 0, 586'
E51-F013-VBB	RCIC Valve Bonnet Bolting	3536-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-19	RB1,G12, 586'
FBC-B21-5352-01N	SRV "N" Flange Bolting	5352-5	VT-1	16	NA	4/4/06	4/7/06	4/10/06	RF-11-20	DW, 47, 612'
G33-F106-VBB	RWCU Valve Bonnet Bolting	5351-5	VT-1	16	NA	4/4/06	4/12/06	4/13/06	RF-11-21	DW,140, 572
Spare Flange (0Deg)	RPV Bolted Connection	5361-5	VT-1	15	NA	4/8/06	4/13/06	4/23/06	RF-11-82	RPV Head
Spare Flange (180Deg)	RPV Bolted Connection	5361-5	VT-1	15	NA	4/8/06	4/13/06	4/25/06	RF-11-82	RPV Head
Instrumentation Nozzle	RPV Bolted Connection	5361-5	VT-1	15	NA	4/10/06	4/13/06	4/13/06	RF-11-83	RPV Head
<b>B-J Class 1 Piping</b>	<b>RIISI Welds</b>									
FW-E11-2327-0W6	RHR - 24" Valve to Pipe	2327-5	UT	3	CS-07-FER	4/11/06	4/13/06	4/13/06	RF-11-24	DW, 97, 600'
FW-E11-2327-6W0	RHR - 24" Pipe to Tee (IGSCC)	2327-5	UT	4 & 22	SS-08-FER	4/11/06	4/13/06	4/13/06	RF-11-25	DW, 93, 600'
FW-G33-3096-6WF5	RWCU - 4" Pipe to Pipe	3096-5	UT	3		4/4/06	4/7/06	4/8/06	RF-11-26	DW, 232, 591'
FW-N21-2336-16W19	FW -12" Reducer to Pipe	3537-5	UT	3	CS-15-FER	4/6/06	4/12/06	4/13/06	RF-11-27	DW,115, 608'
FW-RD-2-A11	Recirc. - 12" SWOL to Pipe (IGSCC, CRC)	5356-5	UT	22 & 28	SS-17-FER	4/8/06	4/13/06	4/13/06	RF-11-28	DW, 240, 603'

Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
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**RF11 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-J Piping Contd. RIISI Welds</b>										
FW-RD-2-B1-W1	Recirc. - 4" SWOL to Cap (IGSCC)	5359-5	UT	4 & 22	SS-25-FER	4/6/06	4/12/06	4/12/06	RF-11-29	DW, 130, 578'
SW-G33-3096-5WD	RWCU - 4" Pipe to Tee	3096-5	UT	3	CS-24-FER	4/3/06	4/7/06	4/8/06	RF-11-30	DW, 229,591'
SW-G33-3096-5WH	RWCU - 6" Tee to Pipe	3096-5	UT	3	CS-22-FER	4/4/06	4/7/06	4/8/06	RF-11-31	DW, 229,591'
SW-RD-2-A3-W7	Recirc - 12" Cross to Pipe (IGSCC)	5356-5	UT	4 & 22	SS-10-FER	4/6/06	4/12/06	4/13/06	RF-11-32	DW, 270, 603'
SW-RD-2-A4-W2	Recirc - 12" Elbow to Pipe (IGSCC)	5356-5	UT	4 & 22	SS-17-FER	4/6/06	4/12/06	4/12/06	RF-11-33	DW, 210, 615'
SW-RS-2-B1-W1	Recirc - 28" Elbow to Pipe (IGSCC)	5359-5	UT	4 & 22	SS-03-FER	4/8/06	4/12/06	4/13/06	RF-11-34	DW, 180, 613'
SW-RS-2-A3-W4	Recirc - 4" SWOL to Pipe	5357-5	PT/UT	1 & 4	SS-25-FER	4/3/06	4/12/06	4/13/06	RF-11-68	DW, 335, 575'
SW-RS-2-A3-W5	Recirc - 4" Pipe to Flange	5357-5	PT/UT	1 & 4	SS-25-FER	4/1/06	4/2/06	4/7/06	RF-11-69	DW, 335, 575'
SW-RS-2-B3-W4	Recirc - 4" SWOL to Pipe	5359-5	PT/UT	1 & 4	SS-25-FER	3/29/06	3/29/06	3/29/06	RF-11-70	DW, 145, 575'
SW-RS-2-B3-W5	Recirc - 4" Pipe to Flange Interior Attachment Weld	5359-5	PT/UT	1 & 4	SS-25-FER	3/29/06	3/29/06	3/29/06	RF-11-71	DW, 145, 575'
<b>B-N-2 Vessel Interior</b>										
Shroud Support Welds	H-9 Shroud Support to Vessel Weld (17% of length min req. ~ 12')	R1-52	UT/VT -3	15/23	NA	4/7/06	4/12/06	4/13/06	RF-11-81	RPV Internal
<b>B-O Peripheral CRD Housing Welds</b>										
CRDH-X02-Y35-W1	CRD Housing Tube to Flange	5363-5	PT	1	NA	4/8/06	4/12/06	4/12/06	RF-11-35	DW-UV,
CRDH-X02-Y35-W2	CRD Housing Tube to Tube	5363-5	PT	1	NA	4/8/06	4/12/06	4/12/06	RF-11-36	DW-UV,
<b>C-A Pressure Vessel Welds</b>										

## RF11 EXAMS

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
SW-E11-D2-HX-05 C-B Nozzle Welds	RHR HX Circ. Head Weld Nozzle to Shell	5370-5	UT	27	CS-80- FER	4/10/06	4/12/06	4/13/06	RF-11-37	RB2, B9, 629'
SW-E11-D2-HX-10	RHR HX Nozzle to Shell	5370-5	UT	27	CS-80- FER	4/10/06	4/11/06	4/13/06	RF-11-38	RB2, B9, 619'
SW-E11-D2-HX-10			MT	2		4/10/06	4/11/06	4/13/06	RF-11-38	
SW-E11-D2-HX-10- IRS C-C Integral Attachment	RHR HX Nozzle to Shell Lugs & Attachment Welds	5370-5	UT	24	CS-81- FER	4/11/06	4/13/06	4/13/06	RF-11-39	RB2, B9, 619'
SW-E11-D2-HXS-17	RHR Lugs (90 deg - 270 deg)	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9, 623'
SW-E11-D2-HXS-18	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-19	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-20	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-21	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-22	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-23	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
SW-E11-D2-HXS-24	RHR Lugs	5370-5	MT	2	NA	4/18/06	4/15/06	4/24/06	RF-11-40	RB2, B9,
C11-50-2113-G262A	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262B	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262C	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262D	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262E	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262F	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262G	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C11-50-2113-G262H	SDV Lugs	5375-5	MT	2	NA	3/30/06	4/2/06	4/4/06	RF-11-41	RB1, C10, 589'
C-F-1 Augmented	NRC Commitment									
FW-C41-2979-50S51 FW-C41-3361- 1WF25	SBLC - 2" Elbow to Pipe	2979-5	PT	1	NA	3/27/06	4/2/06	4/4/06	RF-11-42	RB2, C10, 632'
FW-C41-5058-65S66	SBLC - 3" Pipe to Tee	3361-5	PT	1	NA	3/27/06	4/2/06	4/4/06	RF-11-43	RB3, E10, 659'
	SBLC - 2" Valve to Pipe	5374-5	PT	1	NA	3/27/06	4/2/06	4/4/06	RF-11-44	RB3, F10, 662'
C-F-2 Piping	Circumferential Weld									
FW-E11-3146-0W1	RHR - 20" Nozzle to Pipe	3146-5	MT	2						RB1, C16, 611'

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**RF11 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
FW-E11-3146-0W1			UT	3	CS-42-FER	4/1/06	4/12/06	4/12/06	RF-11-45	
FW-E11-3151-10W0	RHR - 24" Elbow to Valve	3151-5	MT	2		4/11/06	4/13/06	4/13/06	RF-11-46	RB1, B12, 594'
FW-E11-3151-10W0			UT	3	CS-09-FER	4/11/06	4/13/06	4/13/06	RF-11-46	
FW-E11-3160-0W2	RHR - 18" Valve to Elbow	3160-5	VT-1	17		4/1/06	4/2/06	4/7/06	RF-11-47	Tor, B13, 575'
FW-E11-4612-9W0	RHR - 8" Exp to WOL	4612-5	VT-1	17		4/1/06	4/12/06	4/12/06	RF-11-48	Tor, C13, 574'
FW-E41-3163-8W0	HPCI - 16" Red EI to Pump	3163-5	MT	2		3/30/06	4/2/06	4/4/06	RF-11-49	HPCI, H9, 546'
FW-E41-3163-8W0			UT	3	Alt. 1	3/30/06	4/2/06	4/4/06	RF-11-49	
FW-E41-3167-9W0	HPCI - 14" Pipe to Valve	3167-5	MT	2		4/7/06	4/12/06	4/13/06	RF-11-50	RB1, G12, 587'
FW-E41-3167-9W0			UT	3	Alt. 1	4/7/06	4/12/06	4/13/06	RF-11-50	
SW-C11-2113-303-A	SDV - 12" Elbow to Pipe	5372-5	MT	2		3/31/06	4/2/06	4/7/06	RF-11-51	RB1, B13, 597'
SW-C11-2113-303-A			UT	3	CS-38	3/31/06	4/2/06	4/7/06	RF-11-51	
SW-E11-3158-4WD	RHR - 20" Elbow to Pipe	3158-5	MT	2		3/31/06	4/12/06	4/12/06	RF-11-52	RB2, C17, 631'
SW-E11-3158-4WD			UT	3	CS-42-FER	3/31/06	4/12/06	4/12/06	RF-11-52	
SW-E11-3158-8WG	RHR - 20" Pipe to Pipe	3158-5	MT	2		4/11/06	4/13/06	4/13/06	RF-11-53	RB2, C9, 631'
SW-E11-3158-8WG			UT	3	CS-42-FER	4/11/06	4/13/06	4/13/06	RF-11-53	
SW-E11-3177-6WD	RHR - 20" Elbow to Pipe	3177-5	MT	2		3/30/06	4/2/06	4/4/06	RF-11-54	RB-SB,B10,544'
SW-E11-3177-6WD			UT	3	CS-42-FER	3/30/06	4/2/06	4/4/06	RF-11-54	
SW-E21-3147-15WF	CS - 14" Pipe to Elbow	3147-5	MT	2		3/27/06	4/2/06	4/10/06	RF-11-55	RB1, E11, 598'
SW-E21-3147-15WF			UT	3	Alt. 1	3/27/06	4/2/06	4/10/06	RF-11-55	
SW-E21-3149-6WL	CS-16" Elbow to Pipe	3149-5	MT	2		3/31/06	4/2/06	4/6/06	RF-11-56	RB-SB,F10,550'
SW-E21-3149-6WL			UT	3	Alt. 1	3/31/06	4/2/06	4/6/06	RF-11-56	
SW-T48-04-2095-5WD	CGC - 6" Elbow to Pipe	2095-5	MT	2		3/27/06	4/2/06	4/4/06	RF-11-57	RB2, B9, 629'
SW-T48-04-2095-WSW3	CGC - Tee to Red. EI	2095-5	MT	2		3/30/06	4/2/06	4/4/06	RF-11-58	
SW-T48-04-2097-20WD	CGC - 8" Pipe to Tee	3258-5	MT	2		3/30/06	4/2/06	4/4/06	RF-11-59	RB2, B9, 619'
C-F-2 Piping	Branch Connections CS-14" WOL to Pipe									
SW-E21-3144-5WE ANSI B31.1	GL 88-01 Category D	3144-5	MT Vol.	2		3/29/06	3/29/06	3/29/06	RF-11-60	RB2, B9, 619'
FW-N20-3105-0W21	FW - 20" Safe End to Pipe	3105-1	UT	3	SSCL-88	4/11/06	4/13/06	4/13/06	RF-11-62	TB2, P11, 625'

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 Fermi 2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport, MI 48166  
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**RF11 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
SW-N20-03-B009-BWSE	FW - 20" Nozzle to Safe End	3105-1	UT	3	SSCL-88	4/11/06	4/13/06	4/13/06	RF-11-63	TB2, P11, 625'
FW-N21-3109-29W0	FW - 24" Safe End to Pipe	3109-1	UT	3	SSCL-87	4/10/06	4/12/06	4/13/06	RF-11-64	TB3, P10, 650'
SW-N21-01-B001-AWSE	FW - 24" Nozzle to Safe End	3109-1	UT	3	SSCL-87	4/10/06	4/12/06	4/13/06	RF-11-65	TB3, P10, 650'

Procedure No.	Cross Reference Code	Method	Procedure No.	Cross Reference Code	Method
39.NDE.001	1	PT	43.000.014	16	VT-1 Bolting
39.NDE.002	2	MT	43.000.019	17	Primary Cont
PDI-UT-1	3	PDI CS	43.000.013	18	Snubbers
PDI-UT-2	4	PDI SS	39.NDE.015	19	Longseams
PDI-UT-5	5	PDI Bolting	GE-UT-309	20	Inner Radius Sizing
GE-UT-300	6	PDI Manual RPV	GE-UT-311	21	Manual Inner Radius
GE-UT-704	7	GERIS	ISI Prog. Part E. Att. 1	22	RIISI Coverage
GE-UT-705	8	GERIS	GE-UT-319	23	H-9 Manual UT
GE-UT-308	9	Threads in Flange	GE-UT-301	24	Vessel UT < 2" T
GE-UT-209	10	Auto N-SE	ISwT-PDI-1	25	AIRIS Auto
GE-UT-245	11	Auto CRC UT	ISwT-PDI-2	26	AIRIS Sizing
GE-UT-504	12	JPB	GE-UT-321	27	RHR Vessel IR UT
PDI-UT-10	13	Manual DM	GE-UT-105	28	Non-PDI / CRC
43.000.03/04	14	VT-3 Snubbers & Supports	GE-UT-605	29	Straight Beam UT
43.000.017	15	IVVI			

## 2.2 Interval 2, Period 2, RF10 Examinations

RF10 EXAMS										
CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-A Reactor Vessel</b>	<b>RPV Shell Welds</b>									
15-308A	Shell Longitudinal Weld	5360-5	UT	7	2667-62	11/21/04	11/26/04	11/27/04	RF-10-09	DW,84,620'
15-308B	Ind. 124 Successive Exam	5360-5	UT	7	2667-62	11/12/04	11/19/04	11/20/04	RF-10-10	DW,172,620'
2-307B	Shell Longitudinal Weld	5360-5	UT	7	2667-60	11/20/04	11/27/04	11/27/04	RF-10-12	DW,104,610'
2-308A	Shell Longitudinal Weld	5360-5	UT	7	2667-60	11/20/04	11/27/04	11/27/04	RF-10-13	DW,60,646'
1-319E	Closure Head Meridional	5360-5	UT	6	2667-58	11/8/04	11/24/04	11/24/04	RF-10-04	Refuel Floor
1-319F	Closure Head Meridional	5360-5	UT	6	2667-58	11/10/04	11/24/04	11/24/04	RF-10-05	Refuel Floor
1-306B	Bottom Head Meridional	5360-5	UT	6	2667-59	11/17/04	11/22/04	11/27/04	RF-10-02	DWUV,40,604
1-306C	Bottom Head Meridional	5360-5	UT	6	2667-59	11/16/04	11/24/04	11/27/04	RF-10-03	DWUV,77,604
3-319	Head-to-Flange Weld	5360-5	UT	6	2667-58	11/14/04	11/26/04	11/27/04	RF-10-16	Refuel Floor
3-319	Head-to-Flange Weld	5360-5	MT	2	N/A	11/17/04	11/26/04	11/27/04	RF-10-16	Refuel Floor
6-306	Circumferential Bottom Head	5360-5	UT	6	2667-59	11/17/04	11/24/04	11/27/04	RF-10-17	DWUV,604'
<b>B-D Reactor Vessel</b>	<b>Nozzle to Vessel Welds</b>									
13-314C	Recirc Inlet Nozzle	5361-5	UT	8	2667-60	11/22/04	11/25/04	11/27/04	RF-10-07	DW,90,615'
19-314A	Jet Pump Inst. Nozzle	5361-5	UT	6 & 21	2667-60	11/20/04	11/24/04	11/27/04	RF-10-11	DW,97,615'
14-316 A	C.S. Nozzle	5361-5	UT	8	2667-62	11/24/04	11/25/04	11/27/04	RF-10-08	DW,120,641'
2-318	Head Vent Nozzle	5361-5	UT	6 & 21	2667-58	11/15/04	11/24/04	11/27/04	RF-10-14	Refuel Floor
<b>B-D Reactor Vessel</b>	<b>Nozzle Inner Bore Region</b>									
13-314C IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*Completed In vessel VT's Under Job 1109040328			Inness,90,	
19-314A IRS	Jet Pump Inst. Nozzle	5361-5	VT	15-Jan	1-mil wire	*	*	*	IVVI	Inness,97.



**RF10 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
2-318 IRS	Head Vent Nozzle	5361-5	VT-1	15	VT-1 Comparator	*	*	*	IVVI	Refuel Floor
<b>B-F Class 1-Piping</b>	<b>RIISI Welds</b>									
N-5A	CS Noz to SE (IGSCC,CC)	3053-5	UT	10 & 22	CS44/IN45	11/12/04	11/21/04	11/23/04	RF-10-55	DW,120,641'
SW-E21-3053-4W0X	CS Safe-End to Ext. (IGSCC)3053-5	3053-5	UT	10 & 22	CS44/IN45	11/11/04	11/22/04	11/27/04	RF-10-61	DW,120,641'
101-304-E	RRI Noz to SE (IGSCC)	5358-5	UT	10 & 22	SS- 56/CSCL-54	11/14/04	11/19	11/24/04	RF-10-01	DW,150,615'
<b>B-J Class 1-Piping</b>	<b>RIISI Welds</b>									
FW-PS-2-C3	Main Steam- Loop C 26" Pipe to Elbow	5354-5	UT	3	CS-5	11/12/04	11/14/04	11/16/04	RF-10-50	DW,260,212'
SW-PS-2-C3-A	Main Steam- Loop C 26" Elbow to Pipe	5354-5	UT	3	CS-5	11/11/04	11/14/04	11/18/04	RF-10-78	DW,260,608'
SW-PS-2-C3-C	Main Steam- Loop C 8" Sweeplet to Pipe	5354-5	UT	3	CS-20	11/10/04	11/19/04	11/21/04	RF-10-79	DW,282,609'
SW-PS-2-C3-D	Main Steam- Loop C 8" Pipe to Flange	5354-5	UT	3	CS-20	11/9/04	11/13/04	11/20/04	RF-10-80	DW,282,610'
FW-G33-3096-8W9	RWCU 6" Pipe to Tee	5351-5	UT	3	CS-22	11/8/04	11/13/04	11/27/04	RF-10-44	DW,240,572'
FW-G33-3096-8W11	RWCU 6" Pipe to Tee	5351-5	UT	3	CS-22	11/8/04	11/13/04	11/16/04	RF-10-43	DW,250,572'
FW-G33-3096-9WF1	RWCU 6" Elbow to Pipe	5351-5	UT	3	CS-22	11/9/04	11/14/04	11/27/04	RF-10-45	DW,140,572'
SW-N21-2336-13WC	Feedwater 20" Elbow to Tee	3537-5	UT	3	CS-11	11/12/04	11/13/04	11/27/04	RF-10-70	DW,25,608
FW-N21-2336-13W14	Feedwater 12" Tee to Elbow	3537-5	UT	3	CS-15	11/12/04	11/14/04	11/27/04	RF-10-48	DW,30,611'
FW-N21-2336-14WF1	Feedwater 12" Pipe to Elbow	3537-5	UT	3	CS-15	11/11/04	11/17/04	11/18/04	RF-10-49	DW,30,614
SW-N21-2336-13WE	Feedwater 20" Tee to Pipe	3537-5	UT	3	CS-11	11/16/04	11/20/04	11/21/04	RF-10-71	DW,35,608

**RF10 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
FW-RD-2-B19	Reactor Recirc - 12" Pipe to Safe-end (IGSCC, CRC)	5358-5	UT	11 & 22	SS-17	11/11/04	11/23/04	11/24/04	RF-10-51	DW,150,615
<b>B-G-1 Bolting</b>	<b>Greater Than 2"</b>									
326-01 (Closure Studs)	1/3 of locations (1-22)	5362-5	UT	5	RPV Stud Cal	11/7/04	11/13/04	11/16	RF-10-15	Refuel Floor
<b>Base Scope</b>										
<b>B-G-2 Bolting</b>	<b>2" and Less</b>									
RRC Pump A Seal Bolts	Main RR Pump Seal Bolting	5365-5	VT-1	16	N/A	11/10/04	11/13/04	11/27/04	RF-10-60	DW,315,580'
B21-F028A-VBB	MS Valve Bonnet Bolting	5352-5	VT-1	16	N/A	11/10/04	11/13/04	11/27/04	RF-10-23	Stm,5,589'
FBC-B21-5353-01F	SRV Flange Bolting	5353-5	VT-1	16	N/A	11/9/04	11/13/04	11/27/04	RF-10-31	DW,78,612'
B21-F013F-VBB	SRV Body to Bonnet Bolting	5353-5	VT-1	16	N/A	11/9/04	11/13/04	11/27/04	RF-10-21	DW,78,612'
FBC-B21-5353-01C	SRV Flange Bolting	5353-5	VT-1	16	N/A	11/9/04	11/13/04	11/27/04	RF-10-30	DW,46,612'
B21-F013C-VBB	SRV Body to Bonnet Bolting	5353-5	VT-1	16	N/A	11/9/04	11/13/04	11/27/04	RF-10-19	DW,46,612'
FBC-B21-5354-01E	SRV Flange Bolting	5354-5	VT-1	16	N/A	11/11/04	11/13/04	11/24/04	RF-10-32	DW,290,612
B21-F013E-VBB	SRV Body to Bonnet Bolting	5353-5	VT-1	16	N/A	11/11/04	11/13/04	11/27/04	RF-10-20	DW,290,612
B21-F022C-VBB	MS Valve Bonnet Bolting	5354-5	VT-1	16	N/A	11/12/04	11/17/04	11/24/04	RF-10-22	DW,343,590'
E11-F060B-VBB	RHR Valve Bonnet Bolting	2327-5	VT-1	16	N/A	11/13/04	11/17/04	11/24/04	RF-10-28	DW,90,600'
E41-F006-VBB	HPCI Valve Bonnet Bolting	3537-5	VT-1	16	N/A	11/10/04	11/13/04	11/24/04	RF-10-29	STM,G12,587'
G33-F100-VBB	RWCU Valve Bonnet Bolting	5351-5	VT-1	16	N/A	11/14/04	11/17/04	11/27/04	RF-10-53	DW,320,572'
G33-F220-VBB	RWCU Valve Bonnet Bolting	3536-5	VT-1	16	N/A	11/15/04	11/17/04	11/27/04	RF-10-54	STM,F12,586
<b>B-G-2 Emergent</b>	<b>2" and Less</b>									
CRD Flange Bolts	When Disassembled	N/A	VT-1	16	N/A	11/18/04	11/25/04	11/27/04	RF-10-25	DW,UV
CRD Bolting	New Bolting	N/A	VT-1	16	N/A	11/4/04	11/5/04	11/24/04	RF-10-24	As requested
<b>B-H Integral Attachments</b>	<b>RPV Attachment Welds</b>									
8-319-C	Top Head Lifting Lug	5360-5	MT	2	N/A	11/8/04	11/13/04	11/27/04	RF-10-18	Refuel Floor
<b>B-K Integral Attachments Piping Attachment Welds</b>	<b>RPV Attachment Welds</b>									
SW-N21-2336-20WB	Feedwater Loop B	3537-5	MT	2	N/A	11/13/04	11/17/04	11/27/04	RF-10-72	DW,150,613'
SW-N21-2336-20WC	Feedwater Loop B	3537-5	MT	2	N/A	11/13/04	11/17/04	11/27/04	RF-10-73	DW,150,613'

**RF10 EXAMS**

CAL SHT	DATA SHT	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
SW-N21-2336-20WD	Feedwater Loop B	3537-5	MT	2	N/A	11/13/04	11/17/04	11/27/04	RF-10-74	DW,150,613'
SW-N21-2336-20WE	Feedwater Loop B	3537-5	MT	2	N/A	11/13/04	11/17/04	11/27/04	RF-10-75	DW,150,613'
B-N-1 Vessel Interior	RPV Attachment Welds									
Sample Holders	Vessel Interior		VT-3	15	N/A	*Completed In vessel VT's Under Job 1109040328				
B-N-2 Vessel Interior	Interior Attachment Weld									
Surveillance Specimen Bracket			VT-1	15	N/A	*Completed In vessel VT's Under Job 1109040328				
B-O Peripheral CRD	Housing Welds									
CRDH-/X02-Y31-W1	CRD Housing Tube to Flange	5363-5	PT	1	N/A	11/13/04	11/17/04	11/27/04	RF-10-26	DW, UV
CRDH-/X02-Y31-W2	CRD Housing Tube to Tube	5363-5	PT	1	N/A	11/12/04	11/19/04	11/23/04	RF-10-27	

**RF10 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>C-C Integral Attachment</b>	<b>Lug Attachment Welds</b>									
PSFW-E41-3167-1WE	HPCI 14" Pipe Lug	3167-5	MT	2	N/A	11/5/04	11/14/04	11/17/04	RF-10-56	HPCI, G10,546'
PSFW-E41-3167-1WF	HPCI 14" Pipe Lug	3167-5	MT	2	N/A	11/5/04	11/14/04	11/17/04	RF-10-57	
PSFW-E41-3167-1WG	HPCI 14" Pipe Lug	3167-5	MT	2	N/A	11/5/04	11/14/04	11/17/04	RF-10-58	
PSFW-E41-3167-1WH	HPCI 14" Pipe Lug	3167-5	MT	2	N/A	11/5/04	11/14/04	11/17/04	RF-10-59	
<b>C-F-1 Augmented</b>	<b>NRC Commitment</b>									
FW-C41-2979-L	SLC 2" Pipe to Elbow	2979-5	PT	1	N/A	11/2/04	11/19/04	11/27/04	RF-10-34	RB2,D11,635'
FW-C41-2979-11S12	SLC 2" Pipe to Elbow	2979-5	PT	1	N/A	11/2/04	11/19/04	11/27/04	RF-10-33	RB2, C11,630'
<b>C-F-2 Piping</b>	<b>Circumferential Weld</b>									
SW-E11-3146-6WE	RHR 24" Pipe to Tee	3146-5	MT	2	N/A	11/14/04	11/21/04	11/22/04	RF-10-63	Tor,B12,575'
SW-E11-3146-6WE		3146-5	UT	3	CS-42	11/14/04	11/21/04	11/22/04	RF-10-63	
FW-E11-3151-7W11	RHR 20" Tee to Pipe	3151-5	MT	2	N/A	11/11/04	11/19/04	11/27/04	RF-10-35	Tor,B12,575'
FW-E11-3151-7W11		3151-5	UT	3	CS-42	11/12/04	11/19/04	11/27/04	RF-10-35	
SW-E11-3161-4WB	RHR 18" Elbow to Pipe	3161-5	VT-1	17	N/A	11/2/04	11/13/04	11/17/04	RF-10-64	Tor,B11,575'
SW-G41-3669-3WB	RHR-FPC 8" Elbow to Pipe	3669-5	MT	2	N/A	11/3/04	11/14/04	11/17/04	RF-10-67	RB1,B11,585'
FW-E11-4612-4W5	RHR 6" Pipe to Elbow	4612-5	VT-1	17	N/A	11/1/04	11/13/04	11/27/04	RF-10-36	RB1,B17,585'
FW-E11-4612-7W8	RHR 6" Elbow to Pipe	4612-5	VT-1	17	N/A	11/1/04	11/13/04	11/27/04	RF-10-37	Tor,B15,574'
FW-E11-4612-8WF3	RHR 6" Elbow to Pipe	4612-5	VT-1	17	N/A	11/1/04	11/13/04	11/18/04	RF-10-38	Tor,B15,574'
FW-E21-3144-0W4	CS 12" Pipe to Valve	3144-5	MT	2	N/A	11/14/04	11/21/04	11/23/04	RF-10-39	RBSB,F16,540'
FW-E21-3144-0W4		3144-5	UT	3	PDI-Alt-CS-1	11/14/04	11/21/04	11/23/04	RF-10-39	
FW-E21-3145-11WO	CS 10" Pipe to Weldolet	3145-5	MT	2	N/A	11/3/04	11/19/04	11/21/04	RF-10-40	NE Quad,578'
SW-E21-3147-15WG	CS 14" Elbow to Pipe	3147-5	MT	2	N/A	11/4/04	11/13/04	11/20/04	RF-10-65	RB1,D11,601'
SW-E21-3147-15WG		3147-5	UT	3	PDI-Alt-CS-1	11/5/04	11/13/04	11/20/04	RF-10-65	
SW-E41-3162-1WU	HPCI 20" Pipe to Elbow	3162-5	MT	2	N/A	11/15/04	11/23/04	11/27/04	RF-10-66	HPCI, G10,548'
SW-E41-3162-1WU		3162-5	UT	3	PDI-Alt-CS-1	11/15/04	11/23/04	11/27/04	RF-10-66	
FW-E41-3162-1W2	HPCI 20" Elbow to Pipe	3162-5	MT	2	N/A	11/15/04	11/19/04	11/21/04	RF-10-41	HPCI,G10,550'

**RF10 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
FW-E41-3162-1W2		3162-5	UT	3	PDI-Alt- CS-I	11/15/04	11/19/04	11/21/04	RF-10-41	HPCI Rm
SW-E41-3162-2WC	HPCI 20" Elbow to Pipe	3162-5	MT	2	N/A	11/23/04	11/23/04	11/24/04	RF-10-96	HPCI Rm
SW-E41-3162-2WC		3162-5	UT	3	PDI-Alt- CS-I	11/23/04	11/23/04	11/24/04	RF-10-96	
FW-E41-3172-0W1	HPCI 10" Valve to Pipe	3172-5	MT	2	N/A	11/17/04	11/20/04	11/21/04	RF-10-42	Stm,E12,586'
FW-E41-3172-0W1		3172-5	UT	3	CS-18	11/17/04	11/20/04	11/21/04	RF-10-42	
SW-N30-3258-1WJ	MS 26" Pipe to 24" Reducer	3258-5	MT	2	N/A	11/17/04	11/21/04	11/27/04	RF-10-76	Stm,F11,589'
SW-N30-3258-1WJ		3258-5	UT	3	CS-5	11/17/04	11/21/04	11/27/04	RF-10-76	
FW-T48-04-2095-7W8	CGC 6" Elbow to Pipe	2095-5	MT	2	N/A	11/3/04	11/14/04	11/17/04	RF-10-52	RB2,A12, 625'
SW-T48-04-2097-18WC	CGC 8" Expander to Pipe	2097-5	MT	2	N/A	11/5/04	11/14/04	11/17/04	RF-10-81	RB1,C13,587'
SW-N30-3258-1WJLU	Intersecting Long Seam Weld	3258-5	MT/UT	2, 3		11/17/04	11/21/04	11/27/04	RF-10-77	Stm,F11,589'
<b>C-F-2 Piping</b>	<b>Branch Connections</b>									
SW-E11-3146-5WM	RHR 24" Pipe to 12" Weldolet	3146-5	MT	2	N/A	11/18/04	11/21/04	11/22/04	RF-10-62	Tor, B13 ,575'

**RF10 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
ANSI B31.1	GL 88-01 Category D		Vol.							
FW-N20-3107-0W1	FWH 5N Upper Safe-end to El	3107-1	UT	4	SSCL-88	11/19/04	11/22/04	11/23/04	RF-10-47	TB2,R12,624'
SW-N20-03-B013-BWSE	FWH 5N Upper Nozz to Safe-end	3107-1	UT	4	SSCL-88	11/19/04	11/22/04	11/22/04	RF-10-69	TB2,R12,624'
FW-N20-3105-24W0	FWH 5N Lower Safe-end to El	3105-1	UT	4	SSCL-88	11/19/04	11/22/04	11/22/04	RF-10-46	TB2,R12,615'
SW-N20-03-B013-AWSE	FWH 5N Lower Nozz to Safe-end	3105-1	UT	4	SSCL-88	11/19/04	11/22/04	11/22/04	RF-10-68	TB2,R12,615'

Procedure	Reference Code	Method	
39.NDE.001	1	PT	Liquid Penetrant
39.NDE.002	2	MT	Magnetic Particle
PDI-UT-1	3	PDI CS	PDI Ferritic Pipe UT
PDI-UT-2	4	PDI SS	PDI Austenitic Pipe UT
PDI-UT-5	5	PDI Bolting	PDI Bolting UT
GE-UT-300	6	PDI Manual RPV	Man. Vess. Assy Welds
GE-UT-704	7	GERIS	GERIS Vess. Welds
GE-UT-705	8	GERIS	GERIS Nozz. Welds
GE-UT-308	9	Flange Threads	Flange Ligaments UT
GE-UT-209	10	Auto N-SE	Automated DM Weld UT
GE-UT-245	11	Auto CRC UT	Automated CRC Weld UT
GE-UT-504	12	JPB	JPB
PDI-UT-10	13	Manual DM	PDI DM UT
43.000.03/04	14	VT-3 Snubbers & Supports	Snubber/Hanger Vis.
43.000.017	15	IVVI	IVVI
43.000.014	16	VT-1 Bolting	Bolting Visual
43.000.019	17	Primary Cont	Containment Visual
43.000.013	18	Snubbers	Snubber Service Life
39.NDE.015	19	Longscams	Generic UT
GE-UT-309	20	Inner Radius Sizing	GERIS Nozz/IR Sizing
GE-UT-311	21	Manual Inner Radius	Man. Noz/IR UT
ISI Prog. Part E. Att. 1	22	RIISI Coverage	

### 2.3 Interval 2, Period 2, RF09 Examinations

#### RF09 EXAMS

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-A Reactor Vessel</b>		<b>Shell &amp; Head Welds</b>								
1-306J	Bottom Head Meridional	5360-5	UT	6	2667-59	4/6	4/8	4/16	RF-09-01	Bio, 300,604'
1-319D	Closure Head Meridional	5360-5	UT	6	2667-58	3/31	4/2	4/11	RF-09-02	Refuel Floor
15-308B	Shell Longitudinal Weld	5360-5	UT	7	2667-62	4/4	4/10	4/15	RF-09-05	DW,172,620'
2-307C	Shell Longitudinal Weld	5360-5	UT	7	2667-60	4/4	4/7	4/14	RF-09-08	DW,218,610'
2-308B	Shell Longitudinal Weld	5360-5	UT	7	2667-60	4/5	4/9	4/14	RF-09-09	DW,180,646'
4-319	Closure Head Circ Weld	5360-5	UT	6	2667-58	4/9	4/10	4/16	RF-09-13	Refuel Floor
2-307A	Shell Longitudinal Weld	5360-5	UT	7	2667-60	4/8	4/12	4/14	RF-09-106	DW,340,610'
<b>B-D Reactor Vessel</b>		<b>Nozzle to Vessel Welds</b>								
13-314E	Recirc Inlet Nozzle	5361-5	UT	8	2667-60	4/6	4/11	4/14	RF-09-03	DW,150,615'
13-314F	Recirc Inlet Nozzle	5361-5	UT	8	2667-60	4/7	4/10	4/14	RF-09-04	DW,210,615' Auto UT
15-315	CRD Return Nozzle	5361-5	UT	6 & 20	2667-60	4/8	4/9	4/14	RF-09-06	DW,145,638'
4-316C	Feedwater Nozzle	5361-5	UT	8	2667-60	4/7	4/11	4/14	RF-09-12	DW,150,642'
<b>B-D Reactor Vessel</b>		<b>Nozzle Inner Bore Region</b>								
13-314D IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*4/16	*4/27	*5/13	N/A	Invers,120,
13-314E IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*4/18	*4/27	*5/13	N/A	Invers,150

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
13-314F IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*4/18	*4/27	*5/13	N/A	Invess,210
13-314G IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*4/16	*4/27	*5/13	N/A	Invess,240
13-314K IRS	Recirc Inlet Nozzle	5361-5	VT	15	1-mil wire	*4/16	*4/27	5/13*	N/A	Invess,330
<b>B-F Class 1-Piping</b>	<b>RIISI Welds</b>									
N-9	CRD Return Cap (IGSCC)	5361-5	UT	13	CS-48, INC-49	4/8	4/14	4/16	RF-09-47	DW,145,638'
2-303G	RRI Noz to SE (IGSCC)	5356-5	UT	10	SS- 56/CSCL- 54	4/2	4/5	4/11	RF-09-07	DW,240,615'
<b>B-J Class 1-Piping</b>	<b>RIISI Welds</b>		<b>Vol.</b>							
FW-RD-2-A16	B31 12" SE-P (IGSCC,CRC)	5356-5	UT	10	SS-17	4/3	4/5	4/14	RF-09-44	DW,240,615
SW-RS-2-A2-W1	B31 28" Pipe-El (IGSCC)	5357-5	UT	4	SS-3	4/4	4/4	4/13	RF-09-69	DW,0,578'
FW-E11-2299-2WF3	RHR 20" Tee-Pipe	2299-5	UT	3	CS-12	4/5	4/5	4/13	RF-09-29	DW,175,597
SW-E21-3053-3WN	Core Spray 12" El-Pipe	3053-5	UT	3	CS-15	4/8	4/10	4/15	RF-09-57	DW,120,637'
SW-E21-3053-3WP	Core Spray 12" Pipe-El	3053-5	UT	3	CS-15	4/8	4/10	4/15	RF-09-58	DW,120,636'
FW-E51-2192-1W2	RCIC 6" El-Pipe	2192-5	UT	3	CS-22	4/8	4/10	4/16	RF-09-40	DW,42,598'
FW-E51-2192-2W3	RCIC 6" Pipe-E.	2192-5	UT	3	CS-22	4/11	4/12	4/15	RF-09-60	DW,355,598'
SW-N21-2336-1WD	RCIC 20" Sweep-Pipe	3536-5	UT	3	CS-12	4/2	4/3	4/16	RF-09-63	Stm,10,586'
SW-N21-2336-1WU	RCIC 20" Pipe-Tee	3536-5	UT	3	CS-12	4/2	4/3	4/6	RF-09-65	Stm,10,590'
SW-N21-2336-1WL	FW (TASCS) 20" Tee-Pipe	3536-5	UT	3	CS-12	4/3	4/3	4/12	RF-09-64	Stm,10,594'
SW-N21-2336-3WC	RCIC 20" El-Tee	3536-5	UT	3	CS-12	4/5	4/6	4/13	RF-09-66	DW,330,608'
FW-N21-2336-3W4	RCIC 12" Tee-El	3536-5	UT	3	CS-15	4/5	4/6	4/14	RF-09-43	DW,330,608'



**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-G-1 Bolting</b>		<b>Greater Than 2"</b>								
326-02 (Closure Nuts)	1/3 of locations (1-22)	5362-5	MT	2	N/A	4/5	4/5	4/13	RF-09-10	Refuel Floor
Threads in Flange	1/3 of locations (1-22)	5362-5	UT	9	RPV & CSCL-52	3/31	4/2	4/4	RF-09-70	RPV Cavity
326-03 (Closure Washers)	1/3 of locations (1-22)	5362-5	VT-1	16	N/A	4/5	4/5	4/14	RF-09-11	Refuel Floor
<b>Base Scope</b>										
<b>B-G-2 Bolting</b>		<b>2" and Less</b>								
FBC-E41-2297-01		2297-5	VT-1	16	N/A	4/5	4/10	4/17	RF-09-25	DW,51,595'
B31-F023A-VBB		5357-5	VT-1	16	N/A	4/3	4/4	4/17	RF-09-17	DW,342,574'
B31-F031A-VBB		5357-5	VT-1	16	N/A	4/3	4/4	4/17	RF-09-18	DW,290,578
E11-F067-VBB		2299-5	VT-1	16	N/A	4/5	4/10	4/17	RF-09-21	DW,163,595'
E11-F009-VBB		2299-5	VT-1	16	N/A	4/5	4/10	4/17	RF-09-20	DW,163,600'
E21-F005A-VBB		3052-5	VT-1	16	N/A	3/29	3/29	4/17	RF-09-22	RB2,C13,633
E21-F005B-VBB		3053-5	VT-1	16	N/A	3/29	3/29	4/17	RF-09-23	RB2,C11,632
E51-F007-VBB		2192-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-24	DW,360,583'
G33-F004-VBB		3096-5	VT-1	16	N/A	4/10	4/11	4/17	RF-09-46	RB2,C13,624
B21-F032A-VBB		3537-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-16	Stm,350,594'

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
B21-F010B-VBB		3536-5	VT-1	16	N/A	4/14	4/16	4/17	RF-09-14	DW,10,603'
B21-F011B-VBB		3536-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-15	DW,10,594
<b>Initial Sample Expansion</b>										
<b>B-G-2 Bolting</b>	<b>2" and Less</b>									
E11-F015B-VBB		2327-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-89	
E21-F006A-VBB		3052-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-95	
E21-F006B-VBB		3053-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-96	
E21-F007A-VBB		3052-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-97	
E21-F007B-VBB		3053-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-98	
E41-F002-VBB		2297-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-79	
E41-F003-VBB		2297-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-78	
E41-F006-VBB		3537-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-77	
E51-F008-VBB		2192-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-75	
E51-F013-VBB		3536-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-76	
G33-F001-VBB		3096-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-99	
G33-F101-VBB		3096-5	VT-1	16	N/A	4/9	4/10	4/17	RF-09-101	
G33-F121-VBB		3536-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-74	
G33-F220-VBB		3536-5	VT-1	16	N/A	4/8	4/10	4/17	RF-09-73	

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>Second Sample Expansion</b>										
<b>B-G-2 Bolting 2" and Less</b>										
B21-F010A-VBB		3537-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-80	
B21-F010B-VBB		3536-5	VT-1	16	N/A	4/14	4/15	4/17	RF-09-81	
B21-F011A-VBB		3537-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-82	
B21-F032A-VBB		3537-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-83	
B21-F032B-VBB		3536-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-84	
B21-F076A-VBB		3537-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-85	
B21-F076B-VBB		3536-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-86	
E11-F008-VBB		2299-5	VT-1	16	N/A	4/14	4/15	4/17	RF-09-87	
E11-F015A-VBB		2298-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-88	
E11-F050A-VBB		2298-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-90	
E11-F050B-VBB		2327-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-91	
E11-F060A-VBB		2298-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-92	
E11-F060B-VBB		2327-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-93	
E11-F608-VBB		2299-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-94	
G33-F100-VBB		5351-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-100	
G33-F102-VBB		5351-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-102	
G33-F106-VBB		5351-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-103	
G33-F120-VBB		3536-5	VT-1	16	N/A	4/11	4/12	4/17	RF-09-104	

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
B-G-2 Bolting	2" and Less									Loc/Az/EI
CRD Flange Bolts	4219 (1) 3431 (2)	5363-5	VT-1	16	N/A	4/9	4/12	4/17	RF-09-105	
CRD Bolting	New CRD Bolting 1-184	N/A	VT-1	16	N/A	3/27	3/28	4/16	RF-09-72	Drywell, Undervessel
B-P	Pressure Retaining Boundary	M-4536	VT-2	43.000.005	N/A	4/30	4/30	4/30	03-022	Various

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>C-C Vessel</b>	<b>Intregal Attachment</b>									
SW-E11-D2-HXS-13	RHR HX B	5370-5	MT	2	N/A	4/12	4/14	4/15	RF-09-53	RB2,B9,625'
SW-E11-D2-HXS-14	RHR HX B	5370-5	MT	2	N/A	4/12	4/14	4/15	RF-09-54	
SW-E11-D2-HXS-15	RHR HX B	5370-5	MT	2	N/A	4/12	4/14	4/16	RF-09-55	
SW-E11-D2-HXS-16	RHR HX B	5370-5	MT	2	N/A	4/12	4/14	4/16	RF-09-56	
<b>C-F-1 Augmented</b>	<b>NRC Commitment</b>		<b>Vol.</b>							
FW-C41-2979-63S64	SLC weld 2" El-Pipe	2979-5	PT	1	N/A	3/24	3/26	4/4	RF-09-26	RB3, 652,E11
FW-C41-2979-64S65	SLC weld 2" Pipe-El	2979-5	PT	1	N/A	3/24	3/26	4/4	RF-09-27	RB3, 652,E11
FW-C41-5058-54S55	SLC weld 2"Pipe-Reducer	5374-5	PT	1	N/A	3/24	3/26	4/4	RF-09-28	RB3,F10,661
<b>C-F-2</b>	<b>Circumferential Weld</b>		<b>Vol.</b>							
SW-C11-2113-172-A	CRD SDV ' Pipe-Tee	5375-5	MT	2	N/A	3/29	4/1	4/6	RF-09-48	RB1,C10,597'
SW-C11-2113-172-A		5375-5	UT	3	CS-20	3/29	4/1	4/6	RF-09-48	
SW-E11-3035-7WB	RHR 6" El-Pipe	3035-5	MT	2	N/A	3/29	3/30	4/4	RF-09-49	Tor,180,578
FW-E11-3151-3WF2	RHR 24" Tee-El	3151-5	MT	2	N/A	4/12	4/14	4/16	RF-09-30	HxRm,C10,605'
FW-E11-3151-3WF2		3151-5	UT	3	CS-43	4/12	4/14	4/16	RF-09-30	
SW-E11-3154-4WC	RHR 24" El-Tee	3154-5	MT	2	N/A	3/30	3/30	4/6	RF-09-50	Tor,C17,543'
SW-E11-3154-4WC		3154-5	UT	3	PDI-Alt-CS1	3/30	4/2	4/6	RF-09-50	
FW-E11-3154-13WO	RHR 24" Pipe-Pump	3154-5	MT	2	N/A	3/31	4/2	4/13	RF-09-31	RBSB,A15,541'
FW-E11-3154-13WO		3154-5	UT	3	PDI-Alt-CS1	4/1	4/2	4/13	RF-09-31	
FW-E11-3158-1W2	RHR 24" Pipe-El	3158-5	MT	2	N/A	3/30	3/30	4/6	RF-09-32	HxRm,C17,593'
FW-E11-3158-1W2		3158-5	UT	3	CS-43	3/31	3/31	4/6	RF-09-32	
FW-E11-3158-9WF2	RHR 20" Pipe-El	3158-5	MT	2	N/A	3/30	4/1	4/14	RF-09-33	HxRm,B17,635'
FW-E11-3158-9WF2		3158-5	UT	3	CS-42	3/31	4/1	4/14	RF-09-33	
SW-E11-3177-9WE	RHR 20"El-Pipe	3177-5	MT	2	N/A	4/3	4/4	4/6	RF-09-52	Tor,B10,570'
SW-E11-3177-9WE		3177-5	UT	3	CS-42	4/3	4/4	4/6	RF-09-52	
FW-E21-3148-7W0	Core Spray 12" Red-Pump	3148-5	MT	2	N/A	3/31	4/2	4/14	RF-09-34	RBSB,G17,541'
FW-E21-3148-7W0		3148-5	UT	3	PDI-Alt-CS1	4/1	4/2	4/14	RF-09-34	
FW-E41-3162-11WF1	HPCI 16" Pipe-Tee	3162-5	VT-1	17	N/A	3/25	3/28	4/4	RF-09-35	Tor,G11,564'
FW-E41-3162-11WF1	HPCI 16" Tec-Reducer	3162-5	VT-1	17	N/A	3/25	3/28	4/4	RF-09-36	Tor,G11,564'

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
FW-E41-3162-11WF5	HPCI 10" Reducer-Reducer	3162-5	VT-1	17	N/A	3/25	3/28	4/4	RF-09-37	Tor,G11,564'
FW-E41-3167-OW1	HPCI 10" Pump-Pipe	3167-5	MT	2	N/A	3/26	3/28	4/11	RF-09-38	HPCI Skid, 546'
FW-E41-3167-OW1		3167-5	UT	3	CS-50	3/26	3/28	4/11	RF-09-38	
FW-E41-3169-2W0	HPCI 10" Pipe-Valve	3169-5	MT	2	N/A	3/26	3/29	4/14	RF-09-39	CRD,G11,569'
FW-E41-3169-2W0		3169-5	UT	3	CS-36	3/27	3/29	4/14	RF-09-39	
SW-E41-5373-GW3	HPCI 12"El-Pipe	5373-5	MT	2	N/A	3/27	3/30	4/12	RF-09-59	HPCI Skid, 546'
SW-E41-5373-GW3		5373-5	UT	3	PDI-AIt-CS1	3/27	3/30	4/12	RF-09-59	
SW-N30-3258-7WK	Main Steam 26" Pipe-RedEl	3258-5	MT	2	N/A	4/6	4/10	4/13	RF-09-67	Stm,F12,589'
SW-N30-3258-7WK		3258-5	UT	3	CS-5	4/6	4/10	4/13	RF-09-67	
SW-N30-3258-7WKLU	Main Steam 26" Long Seam	3258-5	MT	2	N/A	4/6	4/10	4/15	RF-09-68	Stm,F12,589'
SW-N30-3258-7WKLU		3258-5	UT	3	CS-5	4/6	4/10	4/15	RF-09-68	
<b>C-F-2</b>	<b>Branch Connections</b>									
SW-E11-3160-1WD	RHR 18" Weldolet	3160-5	MT	2	N/A	3/29	3/30	4/4	RF-09-51	Tor,B15,578'

**RF09 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
ANSI B31.1	GL 88-01 Category D									
FW-N20-3105-0W23	20" El-SE Htr 4N, Upper Nozz	3105-1	PT/UT	1 / 13	SSCL-88	4/16	4/18	N/A	RF-09-41	TB2,P12,624'
SW-N20-03-B011-BWSE	20" Nozz-SE 4N, Upper Nozz	3105-1	PT/UT	1 / 13	SSCL-88	4/16	4/18	N/A	RF-09-62	TB2,P12,624'
FW-N20-3105-22WO	20" El-SE Htr 4N, Lower Nozz	3105-1	PT/UT	1 / 13	SSCL-88	4/15	4/18	N/A	RF-09-42	TB2,P12,615'
SW-N20-03-B011-AWSE	20" Nozz-SE 4N, Lower Nozz	3105-1	PT/UT	1 / 13	SSCL-88	4/15	4/18	N/A	RF-09-61	TB2,P12,615'

Procedure	Reference Code
39.NDE.001	1
39.NDE.002	2
PDI-UT-1	3
PDI-UT-2	4
PDI-UT-5	5
GE-UT-300	6
GE-UT-704	7
GE-UT-705	8
GE-UT-308	9
GE-UT-209	10
GE-UT-236	11
GE-UT-504	12
PDI-UT-10	13
43.000.03/04	14
43.000.017	15
43.000.014	16
43.000.019	17
43.000.013	18
GE-UT-309	19
GE-UT-311	20



## 2.4 Interval 2, Period 1, RF08 Examinations

RF08 EXAMS										
CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
B-A Reactor Vessel	Shell Welds		Vol.							
1-308A		5360-5	UT	8	2667-62-1	15-Nov	17-Nov	19-Nov	R8-96	DW,52,552
1-308B		5360-5	UT	8	2667-62-1	15-Nov	17-Nov	19-Nov	R8-97	DW,142,552
15-308C		5360-5	UT	8	2667-62-1	14-Nov	17-Nov	19-Nov	R8-98	DW,262,244
2-307A		5360-5	UT	8	2667-60-1	12-Nov	17-Jan	19-Nov	R8-99	DW,339,122
B-A Reactor Vessel	Circ Head Welds		Vol.							
4-319	2-319C to 2-319E 40%	5360-5	UT	6	2667-58-1	1-Nov	5-Nov	17-Nov	R8-47	Refuel Floor
6-306	180 deg. to 360 deg.	5360-5	UT	6	2667-59-1	5-Nov	7-Nov	15-Nov	R8-57	Refuel Floor
2-319A	Top Head	5360-5	UT	6	2667-58-1	31-Oct	6-Nov	17-Nov	R8-44	Refuel Floor
2-319B	Top Head	5360-5	UT	6	2667-58-1	31-Oct	6-Nov	17-Nov	R8-45	Refuel Floor
2-319C	Top Head	5360-5	UT	6	2667-58-1	2-Nov	6-Nov	17-Nov	R8-46	Refuel Floor
1-319B	Top Head	5360-5	UT	6	2667-58-1	30-Oct	5-Nov	17-Nov	R8-42	Refuel Floor
1-319H	Top Head	5360-5	UT	6	2667-58-1	30-Oct	5-Nov	17-Nov	R8-43	Refuel Floor
1-306A	Bottom Head	5360-5	UT	6	2667-59-1	6-Nov	7-Nov	17-Nov	R8-60	Bio, 0deg
1-306D	Bottom Head	5360-5	UT	6	2667-59-1	6-Nov	7-Nov	18-Nov	R8-61	Bio, 120deg
1-306E	Bottom Head	5360-5	UT	6	2667-59-1	6-Nov	7-Nov	18-Nov	R8-62	Bio, 144 deg
1-306G	Bottom Head	5360-5	UT	6	2667-59-1	6-Nov	7-Nov	18-Nov	R8-63	Bio, 225deg
1-306K	Bottom Head	5360-5	UT	6	2667-59-1	6-Nov	7-Nov	18-Nov	R8-64	Bio, 335deg

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-A Reactor Vessel</b>	<b>Shell to Flange Welds</b>		<b>Vol.</b>							
13-308	Partial from shell side	5360-5	UT	7	2667-62-1	13-Nov	16-Nov	16-Nov	R8-95	DW, 723"
13-308	Partial from flange	5360-5	UT	9	CSCI-52-FER	28-Oct	30-Oct	17-Nov	R8-12	Vessel Cav.
<b>B-A Reactor Vessel</b>	<b>Head to Flange</b>		<b>Vol. / Surf.</b>							
3-319	1/3 of weld length	5360-5	UT	7	2667-58-1	1-Nov	6-Nov	17-Nov	R8-41	Refuel Floor
3-319	1/3 of weld length	5360-5	MT	2	N/A	30-Oct	6-Nov	17-Nov	R8-41	Refuel Floor
<b>B-D Reactor Vessel</b>	<b>Nozzle to Vessel Welds</b>		<b>Vol.</b>							
8-316A	Main Steam Nozzle	5361-5	UT	7	2667-62-1	8-Nov	9-Nov	19-Nov	R8-76	DW,71,655
8-316-B	Main Steam Nozzle	5361-5	UT	7	2667-62-1	8-Nov	9-Nov	19-Nov	R8-77	DW,109,655
4-316A	Feedwater Nozzle	5361-5	UT	7	2667-62-1	8-Nov	9-Nov	19-Nov	R8-75	DW,30,642
4-316B	Feedwater Nozzle	5361-5	UT	7	2667-62-1	7-Nov	8-Nov	18-Nov	R8-65	DW,90,642
4-316D	Feedwater Nozzle	5361-5	UT	7	2667-62-1	8-Nov	10-Nov	18-Nov	R8-78	DW,210,642
14-316B	Core Spray Nozzle	5361-5	UT	7	2667-62-1	7-Nov	8-Nov	18-Nov	R8-66	DW,240,641
13-314A	Recirc Inlet Nozzle	5361-5	UT	7	2667-60-1	5-Nov	7-Nov	17-Nov	R8-53	DW,30,615
13-314B	Recirc Inlet Nozzle	5361-5	UT	7	2667-60-1	5-Nov	7-Nov	17-Nov	R8-59	DW,60,615
13-314D	Recirc Inlet Nozzle	5361-5	UT	7	2667-60-1	6-Nov	7-Nov	17-Nov	R8-58	DW,120,615
13-314G	Recirc Inlet Nozzle	5361-5	UT	7	2667-60-1	4-Nov	7-Nov	17-Nov	R8-51	DW,240,615
13-314K	Recirc Inlet Nozzle	5361-5	UT	7	2667-60-1	5-Nov	7-Nov	17-Nov	R8-54	DW, 330,615
5-314A	Recirc Suction Nozzle	5361-5	UT	7	2667-60-1	12-Nov	14-Nov	15-Nov	R8-93	DW, 0,614
19-314B	JPI Nozzle	5361-5	UT	7	2667-60-1	9-Nov	10-Nov	17-Nov	R8-82	DW,280,612
<b>B-D Reactor Vessel</b>	<b>Nozzle Inside Radius</b>		<b>Vol.</b>							Same as Nozzle to vessel above
8-316A		5361-5	UT / VT	13 or 15	N/A	IVVI	18-Nov	30-Nov	01-034	DW,71,655
8-316-B		5361-5	UT / VT	13 or 15	N/A	IVVI	18-Nov	30-Nov	01-034	DW,109,655
4-316A		5361-5	UT	11	N/A	8-Nov	13-Nov	17-Nov	R8-86	DW,30,642
4-316B		5361-5	UT	11	N/A	8-Nov	13-Nov	17-Nov	R8-87	DW,90,642
4-316D		5361-5	UT	11	N/A	7-Nov	13-Nov	17-Nov	R8-88	DW,210,642

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
14-316B		5361-5	UT / VT	13 or 15	N/A	1-Nov	13-Nov	30-Nov	01-034	DW,240,641
15-315		5361-5	UT / VT	13 or 15	N/A	1-Nov	13-Nov	30-Nov	01-034	DW,150,638
13-314A		5361-5	UT / VT	13 or 15	N/A	1-Nov	18-Nov	30-Nov	01-034	DW,30,615
13-314B		5361-5	UT / VT	13 or 15	N/A	1-Nov	18-Nov	30-Nov	01-034	DW,60,615
13-314D		5361-5	UT / VT	13 or 15	N/A	N/A	N/A	N/A	N/A	DW,120,615
13-314G		5361-5	UT / VT	13 or 15	N/A	N/A	N/A	N/A	N/A	DW,240,615
13-314K		5361-5	UT / VT	13 or 15	N/A	N/A	N/A	N/A	N/A	DW, 330,615
5-314A		5361-5	UT / VT	13 or 15	N/A	1-Nov	18-Nov	30-Nov	01-034	DW, 0,614
19-314B		5361-5	UT / VT	13 or 15	N/A	1-Nov	18-Nov	30-Nov	01-034	DW,280,612
<b>B-D Reactor Vessel</b>	<b>Nozzle Inner Bore Region</b>		<b>Vol.</b>							
4-316A IBR	FW Nzz Inner Bore Region	5361-5	UT	11	70287	8-Nov	13-Nov	17-Nov	R8-86	DW,30,642
4-316B IBR	FW Nzz Inner Bore Region	5361-5	UT	11	70287	8-Nov	13-Nov	17-Nov	R8-87	DW,90,642
4-316D IBR	FW Nzz Inner Bore Region	5361-5	UT	11	70287	7-Nov	13-Nov	17-Nov	R8-88	DW,210,642
<b>B-F &amp; B-J Class 1 Piping</b>	<b>RIISI Welds</b>									
N5B	12" CS SE to Nzz (DM)	3052-5	UT	12	CS-44/IN-45	6-Nov	16-Nov	19-Nov	R8-79	DW,240,641
SW-E21-3052-4W0X	10" CS Pipe to SE (DM)	3052-5	UT	12	CS-18/IN-45	7-Nov	16-Nov	19-Nov	R8-71	DW,240,641
FW-RD-2-A9	28" Tee to Cross	5357-5	UT	4	SS-30	3-Nov	5-Nov		R8-49	DW,270,613
FW-E11-2298-6W0	24" Pipe to Tee	2298-5	UT	4	SS-8	2-Nov	2-Nov	17-Nov	R8-39	DW,270,600
SW-E11-2298-6WC	24" Pipe to Pipe (DM)	2298-5	UT	¼	CS-7/SS-8	2-Nov	2-Nov	16-Nov	R8-38	DW,270,600
FW-G33-3096-10WF3	4' Sweepolet to Tee	5351-5	UT	4	SS-23	2-Nov	8-Nov	17-Nov	R8-40	DW,140,573
7-316A	Main Steam Nzz to SE	5352-5	UT	3	CS-5	8-Nov	8-Nov	19-Nov	R8-74	DW,72,655
SW-PS-2-A1-A	26" Pipe to Elbow	5352-5	UT	3	CS-5	8-Nov	8-Nov	17-Nov	R8-72	DW,72,655
SW-PS-2-A1-B	26" Elbow to Pipe	5352-5	UT	3	CS-5	8-Nov	8-Nov	17-Nov	R8-73	DW,72,653
SW-PS-2-C3-J	8" Sweepolet to Pipe	5354-5	UT	3	CS-20	12-Nov	13-Nov	17-Nov	R8-91	DW,314,609

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
SW-PS-2-C3-K	8" Pipe to Flange	5354-5	UT	3	CS-20	12-Nov	13-Nov	17-Nov	R8-92	DW,314,609
SW-RD-2-B8-W1	12" Pipe to Elbow	5358-5	UT	4	SS-17	1-Nov	2-Nov	16-Nov	R8-35	DW,90,613
SW-RD-2-B8-W2	12" Elbow to Pipe	5358-1	UT	4	SS-17	30-Oct	2-Nov	16-Nov	R8-15	DW,90,615
FW-E11-2327-0W1	24" Valve to Pipe	2327-5	UT	3	CS-9	3-Nov	4-Nov	17-Nov	R8-48	RB1,B12,594
FW-E41-2297-2W3	10" Pipe to Elbow	2297-5	UT	3	CS-22	2-Nov	3-Nov	16-Nov	R8-37	DW,0,586
FW-E41-2297-0W4	10" Fluted head to pipe	2297-5	UT	3	CS-18	2-Nov	2-Nov	11-Nov	R8-36	Stm,F12,586
<b>B-F &amp; B-J Class 1 Piping RIISI Welds</b>										
3-316A	FW 14" SE to Noz	3537-5	UT	3	CS-46	7-Nov	8-Nov	19-Nov	R8-69	DW,30,642
N4A	SE Ext. to SE	3537-5	UT	3	CS-46	7-Nov	8-Nov	19-Nov	R8-70	DW,30,642
FW-N21-2336-15W0	12" Pipe to SE	3537-5	UT	3	CS-15	7-Nov	8-Nov	17-Nov	R8-68	DW,30,642
SW-N21-2336-15WP	12" Pipe to Elbow	3537-5	UT	3	CS-15	7-Nov	8-Nov	18-Nov	R8-67	DW,30,641
<b>B-G-1 Bolting Greater Than 2"</b>										
RPV Closure Nuts	1/3 of locations	5362-5	MT	2	N/A	10-Nov	12-Nov	17-Nov	R8-83	Refuel Floor
RPV Closure Studs	1/3 of locations in place 48-51		UT	5	RPV Stud	28-Oct 4-Nov.	5-Nov	11-Nov 17-Nov	R8-10 R8-50	RPV Cavity
RPV Closure Studs	48-51 removed		MT	2	N/A	10-Nov	12-Nov	17-Nov	R8-50	Refuel Floor
Threads in Flange	1/3 of locations		UT	10	CSCL-52	29-Oct	30-Oct	16-Nov	R8-11	RPV Cavity
RPV Closure Washers/Bushings	1/3 of locations		VT-1	16	N/A	10-Nov	12-Nov	17-Nov	R8-84	Refuel Floor
Recirc Pump Studs	Pump A 1-16	5365-5	VT-1	16	N/A	10-Nov	17-Nov	27-Nov		DW,315,579
Recirc Pump Studs	Pump A 1-16		UT	5	B31 Stud	10-Nov	12-Nov	19-Nov	R8-85	DW,315,579
Recirc Pump nuts, bushings, and washers	Pump A 1-16		VT-1	16	N/A	10-Nov	17-Nov	27-Nov		DW,315,579
RPV Spare Flange	0 deg.	5361-5	VT-1	16	N/A	10-Nov	17-Nov	27-Nov		Refuel Floor
RPV Spare Flange	180 deg.		VT-1	16	N/A	10-Nov	17-Nov	27-Nov		Refuel Floor
<b>B-G-2 Bolting 2" and Less</b>										
FBC-E51-2192-01	FE Flange	2192-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov		DW,360,594
FBC-B21-5352-01L	SRV Flange	5352-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov		DW,360,594
B21-F013L-VBB	SRV Bonnet	5352-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov		DW,39,613

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-G-2 Bolting</b>	<b>2" and Less</b>								01-035D	
FBC-B21-5353-01K	SRV Flange	5353-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035E	DW,39,613
B21-F013K-VBB	SRV Bonnet	5353-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035F	DW,70,613
FBC-B21-5353-01G	SRV Flange	5353-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035G	DW,70,613
B21-F013G-VBB	SRV Bonnet	5353-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035H	DW,38,613
B21-F028B-VBB	B Line Outboard MSIV	5353-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035I	DW,38,613
FBC-B21-5354-01B	SRV Flange	5354-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035J	DW,298,613
B21-F013B-VBB	SRV Bonnet	5354-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035K	DW,298,613
B21-F028D-VBB	D Line Outboard MSIV	5353-5	VT-1	16	N/A	31-Oct	17-Nov	27-Nov	01-035L	Stm,F12,599
E21-F006A-VBB	CS Inbd Check	3052-5	VT-1	16	N/A	9-Nov	17-Nov	27-Nov	01-035M	DW,210,627
E41-F003-VBB	HPCI Otbd ISO Valve	2297-5	VT-1	16	N/A	31-Oct	17-Nov	27-Nov	01-035N	Stm,F12,587
G33-F001-VBB	RWCU Inbd Iso	3096-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035O	DW,229,603
G33-F120-VBB	RWCU to FW Ck	3536-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035P	Stm,F12,587
B21-F011A-VBB	FW A Manual Iso	3537-5	VT-1	16	N/A	1-Nov	17-Nov	27-Nov	01-035D	DW,350,603
<b>B-II RPV Integral Attachment Welds</b>										
3-306/4-309 Skirt Weld	10 percent of length	5360-5	MT	2	N/A	4-Nov	6-Nov	19-Nov	R8-52	Bio Annulus
3-306/4-309 Skirt Weld	10 percent of length	5360-5	UT	7		4-Nov	6-Nov	19-Nov	R8-52	Bio Annulus
10-324A Stabilizer	Stabilizer Lug Weld	5360-5	MT	2	N/A	13-Nov	14-Nov	16-Nov	R8-94	DW,0,647

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-O CRD Housing Welds</b>										
CRDH-X02-Y27-W1	Peripheral Housing Weld		PT	1	N/A	9-Nov	10-Nov	18-Nov	R8-80	DWUV
CRDH-X02-Y27-W2	Peripheral Housing Weld		PT	1	N/A	9-Nov	10-Nov	18-Nov	R8-81	DWUV
<b>C-A Vessel</b>	<b>Shell Welds</b>		<b>Vol.</b>							
SW-E11-D2-HX-11	Shell to Flange	5370-5	UT	14	CS-80	30-Oct	2-Nov	16-Nov	R8-34	RB1,B9,
<b>C-B Vessel</b>	<b>Nozzle to Shell Welds</b>		<b>Vol. / Surf.</b>							
SW-E11-D2-HX-01	Inlet Nozzle to Head	5370-5	UT	14	CS-80	30-Oct	1-Nov	16-Nov	R8-13	RB1,B9,
SW-E11-D2-HX-01	Inlet Nozzle to Head	5370-5	MT	2		29-Oct	1-Nov	16-Nov	R8-13	RB1,B9,
<b>C-B Vessel</b>	<b>Inside Radius</b>		<b>Vol.</b>							
SW-E11-D2-HX-01 IRS	Inlet Nozzle to Head		UT	13	CS-81	30-Oct	1-Nov	15-Nov	R8-30	RB1,B9,
<b>C-C Vessel</b>	<b>Integral Attachment</b>		<b>Surf.</b>							
SW-E11-D2-HXS-05	Upper Shell Stiffener Weld		MT	2		31-Oct	1-Nov	16-Nov	R8-20	RB1,B9,
SW-E11-D2-HXS-06	Lower Shell Stiffener Weld		MT	2		31-Oct	1-Nov	16-Nov	R8-19	RB1,B9,
SW-E11-D2-HXS-07	Support Ring		MT	2		31-Oct	1-Nov	16-Nov	R8-21	RB1,B9,
SW-E11-D2-HXS-09	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-22	RB1,B9,
SW-E11-D2-HXS-10	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-23	RB1,B9,
SW-E11-D2-HXS-11	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-24	RB1,B9,
SW-E11-D2-HXS-12	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-25	RB1,B9,
SW-E11-D2-HXS-21	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-26	RB1,B9,
SW-E11-D2-HXS-22	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-27	RB1,B9,
SW-E11-D2-HXS-23	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-28	RB1,B9,
SW-E11-D2-HXS-24	Stiffener Plate		MT	2		31-Oct	1-Nov	16-Nov	R8-29	RB1,B9,
<b>C-F-1 Piping</b>	<b>Circumferential Welds</b>		<b>Surf.</b>							
FW-C41-2979-72S73	2" Elbow to Pipe	2979-5	PT	1		22-Oct	26-Oct	16-Nov	R8-02	RB4,668
FW-C41-2979-2S3	2" Elbow to Reducer	2979-5	PT	1		31-Oct	1-Nov	11-Nov	R8-33	RB2,C12,633
FW-C41-2979-1S2	2" Reducer to Pipe	2979-5	PT	1		31-Oct	1-Nov	11-Nov	R8-32	RB2,C12,633

**RF08 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>C-F-2 Piping</b>	<b>Circumferential Welds</b>									
FW-E11-3146-5W0	18" Elbow to Valve	3146-5	MT	2		25-Oct	29-Oct	16-Nov	R8-03	Tor,B13,579
FW-E11-3146-5W0		3146-5	UT	3	CS-40	25-Oct	29-Oct	16-Nov	R8-03	
SW-E11-3153-13WD	24" Pipe to Elbow	3153-5	MT	2		24-Oct	29-Oct	16-Nov	R8-07	SW Quad,543Y
SW-E11-3153-13WD	.375" Std.	3153-5	UT	3	PDII-Alt	25-Oct	29-Oct	16-Nov	R8-07	
FW-E11-3159-0W1	12" Wol to Pipe	3159-5	MT	2		26-Oct	31-Oct	16-Nov	R8-09	Tor, B13,575
FW-E11-3159-0W1	.406 Schd. 40	3159-5	UT	3	PDII-Alt	26-Oct	31-Oct	16-Nov	R8-09	
SW-E21-3145-9WD	10" Elbow to Pipe	3145-5	VT-1	17		31-Oct	31-Oct	16-Nov	R8-16	Tor,320,577
SW-E21-3147-5WJ	14" Pipe to Elbow	3147-5	MT	2		23-Oct	29-Oct	16-Nov	R8-04	SE Quad,549Y
SW-E21-3147-5WJ	.438 Schd. 40	3147-5	UT	3	PDII-Alt	24-Oct	29-Oct	16-Nov	R8-04	
SW-E21-3147-19WB	12" Elbow to Pipe	3147-5	MT	2		23-Oct	29-Oct	16-Nov	R8-05	RB2,"C11,628
SW-E21-3147-19WB		3147-5	UT	3	CS-15	27-Oct	29-Oct	16-Nov	R8-05	
SW-E21-3148-5WD	20" Pipe to WOL	3148-5	MT	2		26-Oct	27-Oct	11-Nov	R8-06	NE Quad,541
FW-E41-3162-11W0 & LD	24" Elbow to Pipe	3162-5	VT-1	17		29-Oct	31-Oct	16-Nov	R8-18	Tor,G11,560
SW-E41-3162-11WC	24" Elbow to Reducer	3162-5	VT-1	17		29-Oct	31-Oct	16-Nov	R8-17	Tor,G11,560
FW-N30-3259-4W0	24" Pipe to Valve	3259-5	MT	2		31-Oct	1-Nov	16-Nov	R8-31	TB,L12,632
FW-N30-3259-4W0		3259-5	UT	3	CS-9	31-Oct	1-Nov	16-Nov	R8-31	
FW-T48-04-2095-19W0	8" Pipe to Tee	2095-5	MT	2		19-Oct	22-Oct	11-Nov	R8-01	RB1,B13,594
SW-E11-3151-8WD	24" Pipe to Weldolet	3151-5	MT	2		26-Oct	27-Oct	16-Nov	R8-08	Tor,B12,575
SW-N30-3258-13WB	26" Pipe to Sweepolet	3258-5	MT	2		29-Oct	30-Oct	16-Nov	R8-14	Stm,F12,598
<b>ANSI B31.1</b>	<b>GL 88-01 Category D</b>									
FW-N21-3109-18W0		3109-1	UT	3/4	CS-86/SSCL-87	5-Nov	7-Nov	17-Nov	R8-56	TB3,P5,645
SW-N21-01-B002-AWSE		3109-1	UT	3/4	CS-86/SSCL-87	5-Nov	7-Nov	17-Nov	R8-55	TB3,P5,645
FW-N20-3105-0W13		3105-1	UT	3/4	CS-11/SSCL-88	10-Nov	14-Nov	15-Nov	R8-89	TB2,P4,623
SW-N20-03-B010-BWSE		3105-1	UT	3/4	CS-11/SSCL-88	10-Nov	14-Nov	15-Nov	R8-90	TB2,P4,623

**RF08 EXAMS**

Procedure	Reference Code	Procedure	Reference Code
39.NDE.001	1	ISI-UT-55	10
39.NDE.002	2	GFRM2-ISI-246	11
PDI-UT-1	3	UNIXDETC	12
PDI-UT-2	4	ISI-UT-211	13
PDI-UT-5	5	ISI-UT-215	14
PDI-UT-6	6	43.000.017	15
ISI-UT-210	7	43.000.014	16
I/UX-PDI-254	8	43.000.019	17
GFRM2-ISI-54	9		



## 2.5 Interval 2, Period 1, RF07 Examinations

### RF07 EXAMS

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>B-D Reactor Vessel</b>	<b>Nozzle Inner Radius and Bore Region</b>									
4-31C IRS	(NUREG-0619) Inner Radius	5361-5	UT	6	70287	4/17/00	4/18/00	4/20/00	R7-01	DW, 150, 642'
4-316E IRS	(NUREG-0619) Inner Radius	5361-5	UT	6	70287	4/13/00	4/18/00	4/20/00	R7-02	DW, 270, 642'
4-316F IRS	(NUREG-0619) Inner Radius	5361-5	UT	6	70287	4/17/00	4/18/00	4/20/00	R7-03	DW, 330, 642'
4-316C IBR	FW Nozz Inner Bore Region	5361-5	UT	6	70287	4/16/00	4/18/00	4/20/00	R7-01	DW, 150, 642'
4-316E IBR	FW Nozz Inner Bore Region	5361-5	UT	6	70287	4/13/00	4/18/00	4/20/00	R7-02	DW, 270, 642'
4-316F IBR	FW Nozz Inner Bore Region	5361-5	UT	6	70287	4/16/00	4/18/00	4/20/00	R7-03	DW, 330, 642'
<b>B-F RPV Piping</b>	<b>RPV Nozzle to Safe End</b>									
N5B	Dissimilar Metal Nozz-SE	3052-5	UT	5	FER-44,45	4/12/00	4/18/00	4/20/00	R7-04	DW, 240, 641'
N5B	Core Spray	3052-5	PT	1	N/A	4/11/00	4/18/00	4/20/00	R7-04	
2-303H	Dissimilar Metal Nozz-SE	5356-5	UT	5	FER-54,56	4/10/00	4/18/00	4/20/00	R7-05	DW, 270, 615'
2-303H	Recirc Inlet	5356-5	PT	1	N/A	4/5/00	4/18/00	4/20/00	R7-05	
4-303A	Dissimilar Metal Nozz-SE	5357-5	UT	5	FER-55,57	4/12/00	4/18/00	4/20/00	R7-06	DW, 0, 614'
4-303A	Recirc Suction	5357-5	PT	1	N/A	4/7/00	4/18/00	4/20/00	R7-06	
102-304A	Dissimilar Metal Nozz-SE	5361-5	UT	4	FER47, Alt.1	4/13/00	4/18/00	4/20/00	R7-07	DW, 110, 612'
102-304A	Jet Pump Instrumentation	5361-5	PT	1	N/A	4/13/00	4/18/00	4/20/00	R7-07	
5-315	Dissimilar Metal Nozz-SE	5361-5	UT	4	FER28	4/14/00	4/14/00	4/18/00	R7-08	DW, 180, 608'
5-315	Core DP and Liquid Control	R1-91	PT	1	N/A	4/14/00	4/14/00	4/18/00	R7-08	
<b>B-K-1 Integral Attachment</b>	<b>Piping, Pumps, Valves</b>									
SW-PS-2-A2-AA1	Pipe Lug Class 1	5352-5	MT	2	N/A	4/13/00	4/13/00	4/18/00	R7-09	DW, 72, 638'
SW-PS-2-A2-AA2	Pipe Lug Class 1	5352-5	MT	2	N/A	4/13/00	4/13/00	4/18/00	R7-10	
SW-PS-2-A2-AA3	Pipe Lug Class 1	5352-5	MT	2	N/A	4/13/00	4/13/00	4/18/00	R7-11	
SW-PS-2-A2-AA4	Pipe Lug Class 1	5352-5	MT	2	N/A	4/13/00	4/13/00	4/19/00	R7-12	
<b>C-C Integral Attachments</b>	<b>Piping, Pumps, Valves</b>									
PSFW-E21-3147-301	Class 2 Stanchion to pipe	3147-5	MT	2	N/A	3/30/00	3/31/00	4/11/00	R7-13	RB, SB, G10

**RF07 EXAMS**

CAT/COMP ID	DESCRIPTION	ISO	Exams	Procedure	CAL STD	COMP	L III	ANII	Report	Loc/Az/EI
<b>C-F-1 and C-F-2 Pressure Class 2 Piping Welds Retaining Welds</b>										
FW-C41-2979-P	2" pipe to coupling	2979-5	PT	1	N/A	3/30/00	4/3/00	4/11/00	R7-15	RB3, 646'
FW-C41-3361-02W1	3" valve to pipe	3361-5	PT	1	N/A	3/31/00	4/3/00	4/11/00	R7-16	RB4, SLC Mezz, E10
FW-E11-3146-6W10	20" tee to elbow	3146-5	MT	2	N/A	4/6/00	4/8/00	4/20/00	R7-17	Torus Rm, C13, 574'
FW-E11-3146-6W10	20" tee to elbow	3146-5	UT	3	FER-41	4/8/00	4/8/00	4/20/00	R7-17	
FW-E11-3146-6WH	24" tee to pipe	3146-5	MT	2	N/A	4/3/00	4/18/00	4/20/00	R7-18	Torus Rm, B13, 575
FW-E11-3146-6WH	24" tee to pipe	3146-5	UT	3	FER-43	4/4/00	4/18/00	4/20/00	R7-18	
FW-E11-3158-10WF4	20" pipe to nozzle	3158-5	MT	2	N/A	4/14/00	4/18/00	4/20/00	R7-19	RB2, B9, 629'
FW-E11-3158-10WF4	20" pipe to nozzle	3158-5	UT	3	FER-42	4/14/00	4/18/00	4/20/00	R7-19	
SW-N-30-3258-19WJ	26" pipe to reducer	3258-5	MT	2	N/A	4/7/00	4/14/00	4/19/00	R7-20	RB1, Stm Tunnel, G13
SW-N-30-3258-19WJ	26" pipe to reducer	3258-5	UT	3	FER-5	8-Apr	4/14/00	4/19/00	R7-20	
SW-N-30-3258-19WJLU	intersecting long seam weld	3258-5	MT	2	N/A	4/7/00	4/14/00	4/19/00	R7-20	
SW-N-30-3258-19WJLU	intersecting long seam weld	3258-5	UT	3	FER-5	4/8/00	4/14/00	4/19/00	R7-20	
SW-E11-3035-5WE	6" tee to reducer	3035-5	MT	2	N/A	4/8/00	4/17/00	4/19/00	R7-21	RB2, B12, 621'
FW-E11-3157-0W6	16" pump to expander	3157-5	MT	2	N/A	3/31/00	4/18/00	4/20/00	R7-22	RBSB, B17, 541'
FW-E11-3157-0W6	16" pump to expander	3157-5	UT	3	FER-40	3/31/00	4/18/00	4/20/00	R7-22	
FW-E21-3144-0W1	12" pump to expander	3144-5	MT	2	N/A	3/30/00	4/3/00	4/11/00	R7-23	RBSB, A15, 541'
FW-E21-3147-16W17	12" elbow to pipe	3147-5	MT	2	N/A	4/3/00	4/18/00	4/20/00	R7-24	RB2, C11, 628'
FW-E21-3147-16W17	12" elbow to pipe	3147-5	UT	3	PDI-1 Alt.	4/6/00	4/18/00	4/20/00	R7-24	
SW-E21-3149-4WD	20" pipe to tee	3149-5	MT	2	N/A	4/1/00	4/18/00	4/20/00	R7-25	RBSB, G10, 541
SW-E21-3149-4WD	20" pipe to tee	3149-5	UT	3	PDI-1 Alt.	4/1/00	4/18/00	4/20/00	R7-25	
FW-E41-3163-7W0	16" pipe to valve	3163-5	MT	2	N/A	4/8/00	4/14/00	4/20/00	R7-26	RBSB, G11, 541'
FW-E41-3163-7W0	16" pipe to valve	3163-5	UT	3	FER-85	4/10/00	4/14/00	4/20/00	R7-26	
FW-T48-04-2095-11W12	6" pipe to elbow	2095-5	MT	2	N/A	3/30/00	4/3/00	4/11/00	R7-27	RB2, A15, 622'
FW-T48-04-2097-8W9	6" elbow to pipe	2097-5	MT	2	N/A	3/30/00	4/3/00	4/10/00	R7-28	RB2, B11, 627'
SW-T48-04-2097-21WB	8" elbow to pipe	2097-5	VT-1	7	N/A	4/5/00	4/6/00	4/10/00	R7-29	RB2, B15, 578'
FW-T48-04-2097-20W21	8" pipe to tee	2097-5	MT	2	N/A	4/8/00	4/16/00	4/18/00	R7-30	RB2, B15, 578'
SW-T48-04-2097-25WF	10" elbow to elbow	2097-5	VT-1	7	N/A	4/5/00	4/6/00	4/10/00	R7-31	Torus Rm, X218, 558'
SW-E11-3146-5WC	24" pipe to weldolet	3146-5	MT	2	N/A	4/3/00	4/3600	4/11/00	R7-32	Torus Rm. B13, 575'
<b>ANSI B31.1 GL 88-01 Category D</b>										
FW-N20-3107-0W17	20" safe end to pipe (dm)	3107-1	UT	3,4	FER-11, 88	4/10/00	4/18/00	4/21/00	R7-33	TB2, R12, 625'
SW-N20-03-B014-BWSE	20" nozzle to safe end (dm)	3107-1	UT	3,4	FER-11, 88	4/10/00	4/18/00	4/21/00	R7-34	
FW-N20-3105-16W0	20" elbow to safe end (dm)	3105-1	UT	3,4	FER-11, 88	4/6/00	4/18/00	4/19/00	R7-35	TB2, R3, 615'
SW-N20-03-B014-AWSE	20" safe end to nozzle (dm)	3105-1	UT	3,4	FER-11, 88	4/6/00	4/18/00	4/20/00	R7-36	

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**RF07 EXAMS**

Procedure	Reference Code	Procedure	Reference Code
39.NDE.001	1	UNIXDETC	5
39.NDE.002	2	Fermi-800-1/2	6
PDI-UT-1	3	43.000.019	7
PDI-UT-2	4	43.000.004	8

**SECTION 3**

**SUMMARY OF REACTOR INTERNAL EXAMINATIONS**

Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
Fermi 2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport, MI 48166  
Commercial Service Date: 1-23-88 NB No. 21085 (RPV)

### 3.0 SUMMARY OF REACTOR INTERNAL EXAMINATIONS

Code Category  
B-N-1 and B-N-2 Inspections  
Interval 2, Period 3, RF11

Components	Technique	Requirement	Results / Remarks
Brackets			
Core Spray			
Piping / Welds	EVT-1	BWRVIP-18	NRI (Note 1)
Spargers	EVT-1 / VT-1	BWRVIP-18	NRI (Note 1)
Jet Pump			
Riser Brace (Jet Pump No.1/2)	EVT-1 / VT-1	ASME/BWRVIP-41	NRI
Risers (Jet Pump Nos. 1/2, 7/8, 9/10)	EVT-1	BWRVIP-41	RI (Note 2)
Assemblies (Jet Pump No.5)	EVT-1	BWRVIP-41	NRI (Note 4)
Diffusers/Adapter welds (Jet Pump Nos. 11, 12, 13, 14, 15, 18)	UT / VT-3	BWRVIP-41	NRI (Note 4)
Restrainer Bracket Assemblies (Jet Pump Nos. 1-20)	EVT-1 / VT-1/3	SIL 574 / SIL 629	RI (Note 5)
Sensing Lines (Jet Pump Nos. 6,7,16,17)	VT-3	SIL 420	NRI
Nozzle Inner Radius Surfaces	VT-1	Relief Request RR-A31 and RR-A31	NRI (Note 6)
Top Guide / Core Plate			
2 locations Top Guide	VT-1	SIL 554 / BWRVIP-26	NRI
Shroud			
Shroud Support	EVT-1/UT	BWRVIP-38/104	NRI (Note 3)
Gussets	EVT-1	BWRVIP-38	NRI (Note 3)
Steam Dryer			
Assembly 50%	VT-1/VT-3	SIL 474/SIL 644, Rev. 1 BWRVIP-139	RI (Note 7)
Steam Separator			
Assembly 30%	VT-3	N/A	NRI
Shroud Head Bolts 50%	VT-3	SIL 433	NRI

**Notes:**

- (1) Examined accessible areas of all selected piping welds and components to the extent possible per BWRVIP-18A requirements. Sampling inspections were also performed on sparger welds.
- (2) Reinspected indication adjacent to RS-1 weld (1.75") on Jet Pump Nos. 7 and 8 identified during RF06 (10/98), and no change in length observed. Therefore, no repair is required.

- (3) Examined H-8 and H-9 welds (EVT-1) at 0° and 180° as well as between various Jet Pumps. Percent coverage on H8 was 24% and H9 was 30%. Examined accessible areas of gussets 5, 6, 7, 8, 9, 10, 18, and 20 to EVT-1 requirements. Performed a UT examination of the H9 weld from the vessel OD surface obtaining 19.6% coverage.
- (4) All assembly welds visually inspected except for welds AD-1, AD-2 and DF-3, which are inaccessible for EVT-1 inspection. UT examination was performed on 6 Jet Pumps (17 welds) using specially designed tooling. No indications of service induced cracking were detected.
- (5) Wedge wear was identified on the main wedge for Jet Pump No. 2. As a result, all 20 wedges were inspected and additional inspections were performed on the Jet Pump No. 1/2 riser attachment welds. Auxiliary spring wedges were installed on Jet Pumps No. 1 and 2 and a slip joint clamp was installed on Jet Pump No. 2 (reference EDP 34174 and CARD 06-22334).
- (6) Inspected accessible areas of the RPV head spare nozzles (2) inside radius areas within limits of design and geometry.
- (7) No changes noted in previous indications. Inspection requirements were changed to "best effort VT-1" per SIL 644, Rev. 1 and BWRVIP-139. Indications noted at the base of several vertical welds during RF10 were re-inspected and no changes were noted.

Code Category  
B-N-1 and B-N-2 Inspections  
Interval 2, Period 2, RF10

Components	Technique	Requirement	Results / Remarks
<b>Brackets</b>			
Feedwater Spargers (3)	VT-3 /EVT-1	ASME/BWRVIP-48	NRI
Core Spray Piping (3)	VT-3/EVT-1	ASME/BWRVIP-48	NRI
Guide Rod Bracket (1)	VT-3/EVT-1	ASME/BWRVIP-48	NRI
Steam Dryer Support (4)	VT-3/EVT-1	ASME/BWRVIP-48	NRI
Steam Dryer Hold Down (4)	VT-3/VT-1	ASME/BWRVIP-48	NRI
Surveillance Holder (1)	VT-1/EVT-1	ASME/BWRVIP-48	NRI
<b>Feedwater</b>			
Spargers (3)	VT-3	NUREG-0619	NRI
Nozzles (3)	VT-3	NUREG-0619	NRI
<b>Core Spray</b>			
Piping / Welds	EVT-1	BWRVIP-18	NRI (Note 1)
Spargers	EVT-1 / VT-1	BWRVIP-18	NRI (Note 1)
<b>Jet Pump</b>			
Riser Brace (Jet Pump No.5/6)	EVT-1 / VT-1	ASME/BWRVIP-41	NRI
Risers (Jet Pump Nos. 5/6 and 7/8)	EVT-1	BWRVIP-41	RI (Note 2)
Assemblies (Jet Pump No.5)	EVT-1	BWRVIP-41	NRI (Note 4)
Diffusers/Adapter welds (Jet Pump Nos. 5,6,8,11,16,17,19)	EVT-1 / VT-3	BWRVIP-41	NRI (Note 4)
Restrainer Bracket Assemblies	EVT-1 / VT-1/3	SIL 574 / SIL 629	RI (Note 6)

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(Jet Pump Nos. 5 and 15) Sensing Lines (Jet Pump Nos. 5,6,7,16,17)	VT-3	SIL 420	NRI
Nozzle Inner Radius Surfaces	VT-1	Relief Request RR-A31 and RR-A31	NRI (Note 5)
Top Guide / Core Plate 2 locations Top Guide	VT-1	SIL 554 / BWRVIP-26	NRI
Shroud			
Shroud Support	EVT-1	BWRVIP-07 / 38	NRI (Note 3)
Gussets	VT-1	BWRVIP-07 / 38	NRI (Note 3)
Steam Dryer Assembly 50%	VT-1/VT-3	SIL 474/SIL 644, Rev. 1	RI (Note 7)
Steam Separator			
Assembly 30%	VT-3	N/A	NRI
Shroud Head Bolts 50%	VT-3	SIL 433	NRI

Notes:

- (1) Examined accessible areas of all selected piping welds and components to the extent possible per BWRVIP-18 requirements. Sampling inspections were also performed on sparger welds.
- (2) Reinspected indication adjacent to RS-1 weld (1.75") on Jet Pump Nos. 7 and 8 identified during RF06 (10/98), and no change in length observed. Therefore, no repair is required.
- (7) Examined H-8 and H-9 welds adjacent to Jet Pump No.5. Examined accessible areas of gussets 7 and 8 to VT-1 requirements.
- (8) All assembly welds visually inspected except for welds DF-3, AD-1 and AD-2, which are inaccessible for EVT-1 inspection. An access study was performed in preparation for a UT examination in the future.
- (9) Inspected accessible areas of the following nozzle inside radius areas within limits of design and geometry: Jet Pump Instrumentation (1), Reactor Recirculation inlet (1), RPV head instrumentation.
- (6) Reinspected auxiliary spring wedge installed in RF09 as a permanent repair. No changes were noted. Identified small gap on restrainer screw for Jet Pump No.5 that does not impact operability.
- (7) No changes noted in previous indications. Inspection requirements were changed to "best effort VT-1" per SIL 644, Rev. 1. Indication noted at the base of several vertical welds not previously inspected. Evaluated as acceptable for at least one cycle of operation without repair.

Code Category  
B-N-1 and B-N-2 Inspections  
Interval 2, Period 2, RF09

Components	Technique	Requirement	Results / Remarks
Brackets			
Feedwater Spargers (3)	VT-3 EVT-1	BWRVIP-48	NRI
Core Spray Piping (4)	EVT-1	BWRVIP-48	RI (PB-015 Wear)
Feedwater			
Spargers (3)	VT-3	NUREG-0619	NRI
Nozzles (3)	VT-3	NUREG-0619	NRI
Core Spray			
Piping / Welds	EVT-1	BWRVIP-18	NRI (Note 1)
Spargers	EVT-1 / VT-1	BWRVIP-18	NRI (Note 1)
Jet Pump			
Riser Brace (Jet Pump Nos. 3 and 4)	EVT-1 / VT-1	ASME/BWRVIP-41	NRI
Risers (Jet Pump Nos. 3, 4, 7)	EVT-1	BWRVIP-41	RI (Note 2)
Assemblies (Jet Pump Nos. 3 and 4)	EVT-1	BWRVIP-41	NRI (Note 4)
Restrainer Bracket Assemblies (Jet Pump Nos. 1 through 20)	EVT-1 / VT-1/3	SIL 574 / SIL 629	RI (Note 6)
Sensing Lines (Jet Pump Nos. 3 and 4)	VT-3	SIL 420	NRI
Nozzle Inner Radius Surfaces	VT-1	Relief Request RR-A31 and RR-A31	NRI (Note 5)
Top Guide / Core Plate			
6 locations Top Guide	VT-1	SIL 554 / BWRVIP-26	NRI
Shroud			
Shroud Support	EVT-1	BWRVIP-07 / 38	NRI (Note 3)
Gussets	EVT-1	BWRVIP-07 / 38	NRI (Note 3)
Steam Dryer			
Assembly 30%	VT-3	SIL 474	No change in indications noted
Steam Separator			
Assembly 30%	VT-3	N/A	NRI
Shroud Head Bolts 50%	VT-3	SIL 433	NRI



Notes:

- (1) Examined accessible areas of all selected piping welds and components to the extent possible per BWRVIP-18 requirements. Sampling inspections were also performed on sparger welds.
- (2) Reinspected indication adjacent to RS-1 weld (1.75") on Jet Pump Nos. 7 and 8 identified during RF06 (10/98), and no change in length observed.
- (3) Examined H-8 and H-9 between Jet Pump Nos. 3 and 4. Examined accessible areas of gussets 2 and 15.
- (4) All assembly welds visually inspected except for welds DF-3, AD-1 and AD-2, which are inaccessible for VT inspection. UT technique not available.
- (5) Inspected accessible areas of the following nozzle inside radius areas within limits of design and geometry: Reactor Recirculation outlet (1), Reactor Recirculation inlet (5).
- (6) Second cracked tack weld discovered on restrainer screw for Jet Pump No.15. Crimped screw and installed auxiliary spring wedge as a permanent repair.

Code Category  
B-N-1 and B-N-2 Inspections  
Interval 2, Period 1, RF08

Components	Technique	Requirement	Results / Remarks
Brackets			
Steam Dryer Support (4)	EVT-1	BWRVIP-48	NRI
Feedwater Spargers (6)	EVT-1	BWRVIP-48	NRI
Guide Rod Bracket 0° & 180°	EVT-1 / VT-3	BWRVIP-48	NRI
Core Spray Piping (4)	EVT-1	BWRVIP-48	NRI
Feedwater			
Spargers (3)	VT-3	NUREG-0619	NRI
Nozzles (3)	VT-3	NUREG-0619	NRI
Core Spray			
Piping / Welds	EVT-1	BWRVIP-18	NRI (Note 1)
Spargers	EVT-1 / VT-1	BWRVIP-18	NRI (Note 1)
Jet Pump			
Risers (Jet Pump Nos. 7 and 8)	EVT-1	BWRVIP-41	RI (Note 2)
Risers (Jet Pump Nos. 1 and 2)	EVT-1	BWRVIP-41	NRI
Assemblies (Jet Pump Nos. 1 and 2)	EVT-1	BWRVIP-41	NRI (Note 4)
Restrainer Bracket	EVT-1 / VT-1/3	SIL 574 / SIL 629	
Assemblies (Jet Pump Nos. 1 through 20)			NRI
Sensing Lines	VT-3	SIL 420	NRI
Dry Tubes			
4-SRM	VT-1	SIL 409 /	NRI
8-IRM	VT-1	RICSIL-073	NRI
Top Guide / Core Plate			
8 locations Top Guide	VT-1	SIL 554 / BWRVIP-26	NRI
Core Plate Bolts (4 locations)	VT-1	SIL 588 / BWRVIP-25	NRI (Note 6)
Shroud			
Shroud Support	EVT-1	BWRVIP-07 / 38	NRI (Note 3)
Gussets	EVT-1	BWRVIP-07 / 38	NRI (Note 3)
Steam Dryer			
Assembly 30%	VT-3	SIL 474	No change in indications noted
Steam Separator			
Assembly 30%	VT-3	N/A	NRI
Shroud Head Bolts 50%	VT-3	SIL 433	NRI

Components	Technique	Requirement	Results / Remarks
Nozzle Inside Radius Sections	VT-1 (1 mil wire)	RR-A31 and RR-A32	NRI (Note 5)
RPV Seal Surface		N/A	
Head Flange	VT-1		NRI
Vessel Flange	VT-1		NRI
O-Rings	VT-1 (Direct)		NRI
Vessel Cladding	VT-3		NRI
Control Rod Guide Tubes (10)	EVT-1/VT-3	BWRVIP-47	NRI
Surveillance Specimen Bracket / Lugs	EVT-1 / VT-3	BWRVIP-48	NRI

Notes:

- (1) Examined accessible areas of all welds and components to the extent possible. BWRVIP baseline inspections were completed during RF06 and RF07. Sampling inspections were performed on the spargers.
- (2) Reinspected indication adjacent to RS-1 weld (1.75") identified during RF06 (10/98), and no change in length observed.
- (3) Examined approximately 22% of H-8 and H-9 at 0° and 180° and between Jet Pump Nos. 2 and 3. Examined accessible areas of gussets 1, 2, 3, 11, 12, and 22.
- (4) All assembly welds visually inspected except for welds DF-3, AD-1 and AD-2, which are inaccessible for VT inspection. UT Technique not available.
- (5) Inspected accessible areas of the following nozzle inside radius areas within limits of design and geometry: Main Steam (2), Core Spray (1), CRD Hydraulic Return (1) and Reactor Recirculation (3).
- (6) Inspected top of bolts at four azimuth locations only.

Code Category  
B-N-1 and B-N-2 Inspections  
Interval 2, Period 1, RF07

Components	Technique	Requirement	Results / Remarks
<b>Brackets</b>			
Steam Dryer Support (4)	EVT-1	BWRVIP-48	NRI
Feedwater Spargers (6)	EVT-1	BWRVIP-48	NRI
Guide Rod Bracket at 180°	EVT-1 / VT-3	BWRVIP-48	NRI
Core Spray Piping (4)	EVT-1	BWRVIP-48	NRI
<b>Feedwater</b>			
Spargers	VT-3	NUREG-0619	NRI
Nozzles	EVT-1	NUREG-0619	NRI
<b>Core Spray</b>			
Piping / Welds	EVT-1	BWRVIP-18	NRI (Note 1)
Spargers	EVT-1	BWRVIP-18	NRI
<b>Jet Pump</b>			
Risers (Jet Pump Nos. 7 and 8)	EVT-1	BWRVIP-41	RI (Note 2)
Risers (Jet Pump Nos. 11 through 20)	EVT-1	BWRVIP-41	NRI
Assemblies (Jet Pump Nos. 11 through 20)	EVT-1	BWRVIP-41	NRI (Note 4)
Set Screw Tack Welds	EVT-1	SIL 574	NRI
Sensing Lines	VT-3	SIL 420	NRI
<b>Dry Tubes</b>			
4-SRM	VT-1	SIL 409 /	NRI
8-IRM	VT-1	RICSIL-073	NRI
<b>Top Guide / Core Plate</b>			
8 locations Top Guide	VT-1	SIL 554	NRI
Core Plate Bolts (4 locations)	VT-1	SIL 588 R1	NRI
<b>Shroud</b>			
H2 Indication	EVT-1	BWRVIP-07	No change in indication
Shroud Support	EVT-1	BWRVIP-07	NRI (Note 3)
Gussets	EVT-1	BWRVIP-07	NRI (Note 3)
<b>Steam Dryer</b>			
Assembly 30%	VT-3	SIL 474	No change
Previous Indications	VT-3/UT		Indications have shallow depth as expected
<b>Steam Separator</b>			
Assembly 30%	VT-3	N/A	NRI
Shroud Head Bolts 50%	VT-3	SIL 433	NRI

Components	Technique	Requirement	Results / Remarks
Control Rod Blade O2-39	EVT-1	CARD 98-17816	Relook of previous indication – no significant changes.
RPV Seal Surface		N/A	
Head Flange	VT-1		NRI
Vessel Flange	VT-1		NRI
O-Rings	VT-1 (Direct)		NRI
Vessel Cladding	VT-3		NRI
Control Rod Guide Rods	EVT-1/VT-3	BWRVIP-47	NRI

Notes:

- (1) Examined accessible areas of all welds except P-1, which was inaccessible.
- (2) Reinspected indication adjacent to RS-1 weld (1.75") identified during RF06 (10/98), and no change in length observed.
- (3) Examined H-8 and H-9 at 0° and 180° only. Examined accessible areas of gussets between Jet Pump Nos. 11 through 20.
- (4) All assembly welds visually inspected expect for welds DF-3, AD-1 and AD-2, which are inaccessible for VT inspection. UT Technique not available.

**SECTION 4**  
**SUMMARY OF COMPONENT SUPPORT EXAMINATIONS**

#### 4.0 SUMMARY OF COMPONENT SUPPORT EXAMINATIONS

VT-3 examinations were performed on various system and component supports. Functional Testing for ASME Section XI, Article IWF-5000 snubbers was performed in accordance with EF-2 Technical Requirements Manual for functional testing of snubbers (Ref. Paragraph 5.1).

- 4.1 ASME SECTION XI - IWF (Class 1 and 2) Credit for Component Supports for Interval 2, Period 3, Refuel-11.

CLASS	COMPONENT SUPPORTS
1	12
2	18
3	13
Other	

In addition to the component support inspections, 348 snubbers were visually inspected to the requirements of the Technical Requirements Manual TR 5.1.1 and ASME Section XI using Level I, II and III, VT-3 certified inspectors.

- 4.2 Technical Requirements Examinations

##### 4.2.1 Refuel-11 Examinations

1. VT-3 examinations were performed on all safety related and non-safety related snubbers selected for functional testing per Technical Requirements Manual TR 5.1.1. Total examined was 348.
2. A total of 113 safety related snubbers were functionally tested per the Technical Requirements Manual. 66 snubbers were initially selected at random and functionally tested. 6 snubbers that failed in RF10 were tested in RF11. Due to testing failures, 41 additional snubbers were functionally tested as required by the Technical Requirements Manual.
3. Service life changeout was performed on 75 snubbers.

##### 4.2.2 Refuel-10 Examinations

1. VT-3 examinations were performed on all safety related and non-safety related snubbers selected for functional testing per Technical Requirements Manual TR 5.1.1. Total examined was 545.
2. A total of 122 safety related snubbers were functionally tested per the Technical Requirements Manual. 66 snubbers were initially selected at random and

functionally tested. 8 snubbers that failed in RF09 were tested in RF10. Due to testing failures, 48 additional snubbers were functionally tested as required by the Technical Requirements Manual.

3. Seal Life Changeout was performed on 47 snubbers.

#### 4.2.3 Refuel-09 Examinations

1. VT-3 examinations were performed on all safety related and non-safety related snubbers selected for functional testing per Technical Requirements Manual TR 5.1.1. Total examined was 198.
2. A total of 149 safety related snubbers were functionally tested per the Technical Requirements Manual. 66 snubbers were initially selected at random and functionally tested. Due to testing failures, 83 additional snubbers were functionally tested as required by the Technical Requirements Manual.
3. Seal Life Changeout was performed on 24 snubbers.

#### 4.2.4 Refuel-08 Examinations

1. VT-3 examinations were performed on all safety related and non-safety related snubbers per Technical Requirements Manual TR 5.1.1. Total examined was 699.
2. A total of 66 safety related snubbers per the Technical Requirements Manual were initially selected at random and functionally tested. No snubbers failed functional testing.
3. Seal Life Changeout was performed on 31 Snubbers.

#### 4.2.5 Refuel-07 Examinations

1. VT-3 examinations were performed on all safety related and non-safety related snubbers selected for functional testing per Technical Requirements Manual TR 5.1.1. Total examined was 223.
2. A total of 66 safety related snubbers per the Technical Requirements Manual. Snubbers were initially selected at random and functionally tested. One additional snubber that failed functional testing during RF06 was also functionally tested as required by the Technical Requirements Manual.
3. Seal Life Changeout was performed on 27 snubbers.
4. An additional 124 pre-service examinations were completed, resulting from the installation of additional supports due to a plant modification.



#### 4.2.6 Pre-service Examinations

A preservice visual examination was performed for Technical Requirements Manual Snubbers and ASME Section XI supports, which were modified, replaced, added, or repaired during refueling outages RF07, RF08, RF09, RF10 and RF11 (includes seal life changeout).

**SECTION 5**

**ABSTRACT OF CONDITIONS NOTED**

**AND CORRECTIVE ACTIONS TAKEN**

## 5.0 ABSTRACT OF CONDITIONS NOTED AND CORRECTIVE ACTIONS TAKEN

### 5.1 Refuel-11

The results of the inservice inspections performed indicate that vessels, piping, and components included in the Fermi ISI-NDE Program are in good structural condition and can support safe and reliable operation during the next operating cycle.

#### 5.1.1 Reactor Pressure Vessel (RPV) Internals

During RF11, inspections were conducted on numerous reactor vessel components using the recommended inspection methods and techniques contained in ASME Section XI, various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines, as well as selected augmented inspections identified in Section 3. The intent is to perform the highest quality inspections on all reactor pressure vessel (RPV) components including some BWRVIP guidelines that have not yet been formally approved by the NRC. This proactive approach will assure the continued structural integrity of RPV components. A detailed listing of inspections is provided in Section 3.

During inspection of the source range monitor (SRM) and intermediate range monitor (IRM) Dry Tubes in RF10, it was noted that 8 of the 12 Dry Tubes had linear crack-like indications in the collar region above the pressure boundary. During RF11, all 12 Dry Tubes were replaced. A direct visual inspection was performed on each Dry Tube prior to replacement and proper engagement was verified after installation.

Inspections were completed on accessible welds on several welds on the Jet Pumps, primarily on Jet Pump No. 9/10 to comply with the BWRVIP-41 re-inspection recommendations. Re-inspection was performed on the main wedge on Jet Pumps No. 1 through 5, and No. 16 through 20. Wear was identified on the restrainer bracket on Jet Pump No. 2 and inspection scope was expanded to include all wedges and additional locations on Jet Pumps No. 1 and 2 that share a common riser pipe. Condition Assessment Resolution Document (CARD) 06-22334 was initiated and this condition was evaluated and auxiliary spring wedges were installed on Jet Pumps No. 1 and 2, and a slip joint clamp was installed on Jet Pump No. 2.

During RF06, a crack of approximately 1 ¼ inch long was identified on the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120° AZ. This indication was evaluated and found acceptable for continued operation without repair. This indication was reinspected during RF07, RF08, RF09, RF10, and again in RF11, and there continues to be no observable change in length or width. This indication is within the allowable flaw acceptance tolerance for this location and repair is not necessary. Reinspection of this indication will again be performed during RF12. This crack is similar to indications identified in at least 5 other BWR plants.

Inspections of the Steam Dryer were performed, which included VT-1 inspections, following the recommendations contained in SIL 644, Rev. 1, and BWRVIP-139. Based on these new inspection requirements, several new indications were identified on the Steam Dryer. These indications were evaluated and documented in CARD 06-21741. The Steam Dryer is acceptable for continued operation. Selected indications and conditions identified during previous outages were again reinspected during RF11 and no observable changes were noted.

The RPV internals are in very good condition. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation, and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

#### 5.1.2 RPV External Volumetric and ASME Piping Weld Examinations

Automated ultrasonic examinations were performed on the upper RPV shell course welds including the shell to flange weld and four longitudinal seam welds. The exams were performed from the inside surface using ASME Section XI, Appendix VIII/PDI qualified procedures. The examination technique substantially increased the coverage obtained on the shell to flange weld from OD surface and flange face. The vertical welds were covered for essentially 100% of the weld length. Reliance on manual pickups to obtain greater than 90% coverage due to limitations caused by the RPV cavity bellows, stabilizer brackets and behind the bio-shield is no longer necessary. No indications exceeding the criteria of IWB-3510 were detected.

During RF11, Detroit Edison performed ultrasonic examinations of ASME Class 1 piping welds using degradation mechanism specific exam volumes and methods where applicable in accordance with the Risk Informed Inservice Inspection Program. Four additional welds were selected on the reactor recirculation system due to industry operating experience (reference CARD 05-22440). All other examinations were performed as required by ASME Section XI, 1989. Ultrasonic examination procedures and personnel were qualified in accordance with ASME Section XI, Appendix VIII and the Utility Performance Demonstration Initiative. No service induced piping weld defects were detected.

No service related degradation was noted during RF11 nondestructive examination (NDE). The RPV and piping systems are in satisfactory condition to support future safe operation of the plant.

#### 5.1.3 Component Supports

Three hangers were found with discrepancies between the installed condition and the configuration document. It was determined that this condition did not affect the component's operability and was not reportable. No additional supports were inspected as a result of this observation.

Snubber functional testing found four mechanical snubbers that did not meet its acceptance criteria. Three of the failures were due to grease degradation. The other failure was due to improper rebuild in 1996. All snubbers were replaced with rebuilt and tested snubbers. Evaluation of the failed snubbers found no adverse effects on their associated piping. All required sample expansions were completed to meet the requirements of the Technical Requirements Manual TR 5.1.1. Reference the following CARDS: 06-22020, 06-22183, 06-22108 and 06-22363.

### 5.2 Refuel-10

The results of the inservice inspections performed indicate that vessels, piping, and components included in the Fermi ISI-NDE Program are in good structural condition and can support safe and reliable operation during the next operating cycle.

#### 5.2.1 RPV Internals

During RF10, inspections were conducted on numerous reactor vessel components using the recommended inspection methods and techniques contained in ASME Section XI, various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines, as well as selected augmented inspections identified in Section 3. The intent is to perform the highest quality inspections on all reactor pressure vessel (RPV) components including some BWRVIP guidelines that have not yet been formally approved by the NRC. This proactive approach will assure the continued structural integrity of RPV components. A detailed listing of inspections is provided in Section 3.

During inspection of the source range monitor (SRM) and intermediate range monitor (IRM) Dry Tubes, it was noted that 8 of the 12 Dry Tubes had linear crack-like indications in the collar region above the pressure boundary. A condition assessment resolution document (CARD) 04-25703 was initiated and evaluated, and no replacements were required during the outage. Replacement of selected Dry Tubes will be performed during future outages.

Inspections were completed on accessible welds on several welds on the Jet Pumps, primarily on Jet Pump No.5 to comply with the BWRVIP-41 reinspection recommendations. Reinspection was performed on the auxiliary spring wedge installed on Jet Pump No.15 and this revealed that the repair was effective. A slight gap was identified at a restrainer screw for Jet Pump No.5; however, no main wedge wear was present. This condition was evaluated in CARD 04-25917 and does not have any impact on plant operation.

During RF06, a crack of approximately 1 ¾ inch long was identified on the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120° AZ. This indication was evaluated and found acceptable for continued operation without repair. This indication was reinspected during RF07, RF08, RF09 and again in RF10, and there continues to be no observable change in length or width. This indication is within the allowable flaw acceptance tolerance for this location and repair is not necessary. Reinspection of this indication will again be performed during RF11. This crack is similar to indications identified in at least 5 other BWR plants.

Inspections of the Steam Dryer were performed, which included VT-1 inspections, following the recommendations contained in SIL 644, Supplement 1, and SIL 644, Rev. 1. Based on these new inspection requirements, several new indications were identified on the Steam Dryer. These indications were evaluated and documented in CARD 04-25416. The Steam Dryer is acceptable for continued operation and several indications will be reinspected during RF11. Selected indications and conditions identified during previous outages were again reinspected during RF10 and no observable changes were noted.

The RPV internals are in very good condition. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation, and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

#### 5.2.2 RPV External Volumetric and ASME Piping Weld Examinations

RPV weld ultrasonic examinations using ASME Section XI, Appendix VIII/PDI procedures continue to be performed for the first time on scheduled weld locations. These more sensitive examinations identify a significantly larger number of manufacturing flaws than reported during amplitude based examinations performed prior to RF09. A reexamination of a large slag indication/combination in weld 15-308B, which was discovered during RF09, confirmed that there has been no change. The fracture mechanics evaluation performed as part of CARD 03-

16383 determined that the flaw would not present a structural or leakage problem during the remaining service-life of the RPV with a projected 20 percent power uprate, including a 20-year life extension. Another similar RPV Shell Weld (15-308A) was also examined. The remote inspection system recorded 66 relevant weld indications. Two of the flaws had a measurable through wall dimension and were typical of those expected in welds fabricated with the sub-vert welding process. One of the flaws was accepted based on the criteria of IWB-3510 and the other was accepted based on the flaw handbook developed for Fermi in accordance with IWB-3600.

During RF10, Detroit Edison continued to implement a Risk Informed Inservice Inspection Program for ASME Class 1 piping welds using degradation mechanism specific exam volumes and methods where applicable. All other welds were examined as required in ASME Section XI. Ultrasonic examination techniques qualified in accordance with ASME Section XI, Appendix VIII and the Utility Performance Demonstration Initiative were used. No service induced piping weld defects were detected.

One ASME Class 2 piping weld that in the previous inspection interval only required a surface examination based on the nominal material thickness, now also requires a volumetric exam under the updated Code requirements. The weld was found to have an ultrasonic exam scanning limitation. The limitation was due to welded support lugs and a Code Plate that prevented obtaining greater than 90 percent coverage (CARD 04-25787). Therefore, another weld on the same line was selected. That weld had not been examined since construction. The initial surface exam detected a manufacturing processing flaw that would have been permitted by the material specification. The flaw was removed with a sanding disc and the required examinations were completed satisfactorily (CARD 04-25870).

No service related degradation was noted during RF10 nondestructive examination (NDE). The RPV and piping systems are in satisfactory condition to support future safe operation of the plant.

CARD 04-20518 was initiated well before RF10 based on Performance Engineering review of industry operating experience (OE) 17638 that identified a potential problem with pressurization of the entire Class 1 boundary during a 10-year interval hydrostatic test. The OE was determined to be applicable to Fermi, and impacted the RF06 pressure test. The Operations test lineup procedure, 24.137.21, was revised and the test was completed as required during RF10.

### 5.2.3 Component Supports

One hanger was found with a discrepancy between the installed condition and the configuration document. It was determined that this condition did not affect the component's operability and was not reportable. No additional supports were inspected as a result of this observation.

Snubber functional testing found six mechanical snubbers that did not meet its acceptance criteria. Four of the failures were due to grease degradation. The other two failures were due to overload. All snubbers were replaced with rebuilt and tested snubbers. Evaluation of the failed snubbers found no adverse effects on their associated piping. All required sample expansions were completed to meet the requirements of the Technical Requirements Manual TR 5.1.1. Reference the following CARDS: 04-25816, 04-25845, 04-25663, 04-25662, 04-25612, and 04-25275.

## 5.3 Refuel-09

The results of the inservice inspections performed indicate that vessels, piping, and components included in the Fermi ISI-NDE Program are in good structural condition and can support safe and reliable operation during the next operating cycle.

### 5.3.1 RPV Internals

During RF09, inspections were conducted on numerous reactor vessel components using the recommended inspection methods and techniques contained in various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines as well as selected augmented inspections identified in Section 3. The intent is to perform the highest quality inspections on all RPV components including some BWRVIP guidelines that have not yet been formally approved by the NRC. This proactive approach will assure the continued structural integrity of RPV components. A detailed listing of inspections is provided in Section 3.

During vessel flange inspection after disassembly and prior to flood up, it was noted that a nail had been compressed between the flanges near stud No. 54. The nail was removed leaving a depression outside of the sealing surface. A condition assessment resolution document (CARD) 03-10364 was initiated, and no repairs were required. Additionally, after O-ring removal and prior to cleaning, the grooves were inspected and heavy silver deposits were noted to have been transferred from the O-ring. The deposits were flaky in nature and were removed with scotch brite pads followed by light stoning (CARD 03-14819).

Inspections were completed on all accessible welds on two complete Jet Pump Risers and Assemblies (Nos. 3 and 4) to comply with the BWRVIP-41 reinspection recommendations. Reinspection of a previously cracked restrainer set-screw on Jet Pump No.15 revealed a second cracked tack weld (CARD 03-16929). All 20 Jet Pumps restrainer assemblies were reinspected as recommended by SIL No. 629, including the wedge, restrainer screw contact, as well as the 80 restrainer screw tack welds. No additional cracked welds were found. The set-screw on Jet Pump No.15 was staked to prevent backing out and an auxiliary spring wedge was installed per engineering design package (EDP) 32499.

During RF06, a crack of approximately 1 ¼ inches long was identified on the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120° AZ. This indication was evaluated and found acceptable for continued operation without repair. This indication was reinspected during RF07, RF08, and RF09, and there continues to be no observable change in length or width. This indication is within the allowable flaw acceptance tolerance for this location and repair is not necessary. Reinspection of this indication will again be performed during RF10. This crack is similar to indications identified in at least 5 other BWR plants.

Indications and conditions identified during previous outages were reinspected during RF09. One additional tie rod on the steam dryer was found to have a cracked tack weld (TR-E-6) similar to those noted previously. There is little or no concern that this nut, or any others, will back out during the current cycle with the remaining sound welds. No other changes were noted.

The RPV internals are in very good condition. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

### 5.3.2 RPV External Volumetric and ASME Piping Weld Examinations

During RF09, Detroit Edison implemented a Risk Informed Inservice Inspection Program for ASME Class 1 piping welds. No piping weld defects were detected.

New utility performance demonstration initiative requirements (ASME Section XI, Appendix VIII, Supplement 10) were also implemented for two dissimilar metal weld inspections. No indications of service related degradation were detected.

RPV weld ultrasonic examinations using ASME Section XI, Appendix VIII/PDI procedures continue to be performed for the first time on scheduled weld locations. These more sensitive examinations identify a significantly larger number of manufacturing flaws than reported during previous amplitude based examinations. These more sensitive inspections detected 4 indications/combinations that would have been unacceptable per IWB-3510. These pre-existing welding flaws were confirmed by review of the construction radiographs and the pre-service UT data. One large slag indication/combination was detected in lower intermediate shell course weld 15-308B and was accepted in accordance with IWB-3112 (b). However, due to its significant size, a fracture mechanics evaluation was performed as specified in CARD 03-16383 to verify the flaw will not present a structural or leakage problem during the remaining service-life of the RPV with a projected 20 percent power uprate, and including a 20-year life extension. INPO OE16421 was issued to notify other licensees.

During the performance of Category B-G-2 bolting inspections, loose nuts were detected on valve bolting at E11-F009-VBB and CARD 03-16366 was initiated. Investigation determined that the loose bolting was related to torquing practices for pressure seal bonnet bolting. An initial sample expansion was made and additional loose bolting was detected. The sample was extended to cover all pressure seal style bonnet bolting. Additional CARDS (03-16370, 03-16371, and 03-16372) were initiated for loose bolting during the expanded sample examinations of E11-F060B-VBB, B21-F011B-VBB, and E11-F008-VBB. Work requests (000Z031279, 000Z031430, 000Z031420, and 000Z0231490) were initiated to re-torque the pressure seal bonnet bolting with system pressure under the bonnets.

No service related degradation was noted during RF09 NDE. The RPV and piping systems are in satisfactory condition to support future safe operation of the plant.

### 5.3.3 Component Supports

Several hangers were found with discrepancies between the installed condition and their configuration documents. It was determined that these conditions did not affect the components' operability and were not reportable. No additional supports were inspected as a result of these observations.

Snubber functional testing found eight mechanical snubbers that did not meet its acceptance criteria. Five of the failures were due to grease degradation. The other three failures were due to overload. All snubbers were replaced with rebuilt and tested snubbers. Evaluation of the failed snubbers found no adverse effects on their associated piping. All required sample expansions were completed to meet the requirements of the Technical Requirements Manual TR 5.1.1. Reference the following CARDS: 03-16111, 03-16112, 03-16921, 03-16933, 03-16934, 03-16935, and 03-16927.



## 5.4 Refuel-08

The results of the inservice inspections performed indicate that vessels, piping, and components included in the Fermi ISI-NDE Program are in good structural condition and can support safe and reliable operation during the next operating cycle.

### 5.4.1 RPV Internals

During RF08, inspections were conducted on numerous reactor vessel components utilizing the recommended inspection methods and techniques contained in various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines as well as selected augmented inspections identified in Section 3. The intent was to perform the highest quality visual inspections on all RPV components utilizing some BWRVIP guidelines that have not yet been formally approved by the NRC. This proactive approach will assure the continued structural integrity of RPV components. A detailed listing of inspections is provided in Section 3.

Inspections were completed on all accessible welds on two complete Jet Pump Risers and Assemblies (Nos. 1 and 2) to comply with the BWRVIP-41 reinspection recommendations. These inspection points included welds previously inspected and no recordable indications were identified.

Baseline inspections had been previously completed for all Jet Pump assembly welds (Nos. 1 through 20) during RF06 and RF07, with the exception of welds DF-3, AD-1 and AD-2. Inspection of these locations will be conducted during future outages when a technique is developed and qualified.

During RF06, a crack of approximately 1 ¼ inches long was identified on the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120° AZ. This indication was evaluated and found acceptable for continued operation without repair. This indication was reinspected during RF07 and again in RF08, and there continues to be no observable change in length or width. This indication is within the allowable flaw acceptance tolerance for this location and repair is not necessary. Reinspection of this indication will again be performed during RF09. This crack is similar to indications identified in at least 5 other BWR plants.

Because of recent industry findings, all 20 Jet Pumps restrainer assemblies were inspected as recommended by SIL No. 629, including the wedge, restrainer screw contact, as well as the 80 restrainer screw tack welds. The conditions on Jet Pump No.15 were again unchanged, and it still appears to have only one of 2 tack welds cracked. No additional cracked welds were found, therefore, no repairs were required this outage. In addition, there was no wedge damage identified and full contact (no gaps) was verified on all restrainer screws on all Jet Pumps.

Extensive visual inspections of Core Spray internal piping and spargers were performed per BWRVIP-18 guidelines for reinspection. No indications of cracking were identified. All accessible areas of the welds were inspected and no recordable indications were identified.

Inspections were performed on selected integral attachments per the guidelines of BWRVIP-48 and on approximately 22 percent of the Shroud Support Ring as well as several Gussets per the guidelines of BWRVIP-38. In addition, visual inspections were performed on several nozzle

inner radius sections per Relief Request RR-A31 and A32. No recordable indications were identified on any of these inspections.

Two new indications were identified on the steam dryer assembly welds in areas not previously inspected. The indications were identical to those previously reported. These indications were evaluated and no repairs were required during RF08. Visual and ultrasonic inspections will continue to be performed during future outages.

Indications and conditions identified during previous outages were reinspected during RF08. The reinspection included the following items with no further degradation identified:

- Steam Dryer tie rod nut to washer tack welds cracks and support ring.
- RPV internal surfaces - "Bathtub Ring".
- SRM / IRM Dry Tubes.

No adverse changes in existing indications were noted. The RPV internals are in very good condition. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

#### 5.4.2 RPV External Volumetric and ASME Piping Weld Examinations

During RF08, Detroit Edison implemented a Risk Informed Inservice Inspection Program for ASME Class 1 piping welds. No piping weld defects were detected.

New utility performance demonstration initiative requirements (ASME Section XI, Appendix VIII, Supplements 4 and 6) were also implemented for RPV weld inspection. These more sensitive inspections detected existing fabrication flaws that were confirmed by review of construction radiographs.

During the performance of Class 2 weld inspections, one service related defect was detected at a stiffener plate weld adjacent to a vessel support ring on the Division 2 RHR heat exchanger. The defect appeared to have originated from a pre-existing construction flaw in the stiffener plate weld tie-in at the support ring weld and propagated into the base material in the heat affected zone of the stiffener plate. The inspection sample was expanded to include all of the stiffener plate welds at that location. No additional indications were detected. The defect was documented on CARD 01-20653, and the defect was ground out and repaired by welding. The repaired area was then reinspected to verify defect removal.

No other service related conditions were noted during RF08 inspections.

#### 5.4.3 Component Supports

Several hangers were found with discrepancies between the installed condition and their configuration documents. It was determined that these conditions did not affect the components' operability and were not reportable. No additional supports were inspected as a result of these observations.

Hanger P45-3353-G14, which was not in the sample scope, was found by plant personnel to be pulled from the wall. A new baseplate was mounted and the strut returned to design settings. An inspection scope expansion was initiated and all other supports on the P45-3353 line were

inspected. One minor discrepancy (loose jamb nut) was found and corrected. It was determined that this did not impact component operability.

## 5.5 Refuel-07

Nondestructive examinations have verified that RPV and internals piping systems and supports are in good structural condition and can support safe and reliable operation during this operating cycle.

### 5.5.1 RPV Internals

During RF07, inspections were conducted on numerous reactor vessel components utilizing the recommended inspection methods and techniques contained in various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines as well as the augmented inspections identified in Section 3. While it is true that many of the guidelines are not yet approved by the NRC, the intent was to perform the highest quality visual inspections on RPV components. This proactive approach will assure the structural integrity of RPV components.

Inspections were initially scheduled for 50 percent of the Jet Pump risers and assemblies (Nos. 11 through 20) to comply with BWRVIP-41 inspection recommendations. These inspection points included welds not previously inspected. During RF06, a crack of approximately 1 ¾ inches long was identified on the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120° AZ. This indication was evaluated and found acceptable for continued operation without repair. This indication was reinspected during RF07 and there was no observable change in length or width. This indication is within the allowable flaw acceptance tolerance for this location and repair is not necessary. Reinspection of this indication will again be performed during RF08. This crack is similar to indications identified in at least 5 other BWR plants.

All accessible welds and locations on Jet Pump assemblies Nos. 11 through 20 were inspected and no recordable indications were identified. A baseline inspection has been completed for all Jet Pump welds (Nos. 1 through 20) with the exception of welds DF-3, AD-1 and AD-2. Inspection of these locations will be conducted during future outages when a technique is developed and qualified. Reinspections on 1 of the 20 original control rod blades (02-39) identified very little change from the cracking on the sheath area near the handle on blade identified in RF06. These indications were evaluated and are not detrimental to the operation of the control blade. While not a code inspection, several blades were periodically inspected as recommended by General Electric, following the chemistry transient in 1993.

No new indications were identified on the steam dryer assembly welds in areas not previously inspected. Both ISI and General Electric previously evaluated the indications. No repairs were required during RF07. In addition, selected linear indications on the steam dryer support ring were ultrasonically inspected to determine the depth. The indications are shallow, less than ½ inch in depth, and pose no threat to the integrity of the steam dryer assembly. Visual and ultrasonic inspections will be performed during future outages.

Indications and conditions identified during previous outages were reinspected during RF06. The reinspection included the following items with no further degradation identified:

- Core Shroud ID linear indication above the H2 weld.
- Steam Dryer tie rod nut to washer tack welds cracks and support ring.

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- RPV internal surfaces - "Bathtub Ring".
- SRM / IRM Dry Tubes.

The Jet Pump restrainer screws were again inspected (80 tack welds). The conditions were unchanged this outage on Jet Pump No.15, which had one of 2 tack welds cracked. No additional cracked welds were found. The condition identified previously did not require repair this outage.

Extensive inspection of Core Spray internal piping and spargers were performed per BWRVIP-18 Guidelines. No indications of cracking were identified. All accessible areas of welds were inspected with the exception of the P-1 weld, which is inaccessible for inspection.

No adverse changes in existing indications were noted. The RPV internals are in very good condition to date. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

#### 5.5.2 RPV External Volumetric and ASME Piping Weld Examinations

No service related defects were detected by nondestructive examinations performed during RF07.

#### 5.5.3 Component Supports

Hanger E11-3184-G18 was found to have a loose jamb nut on the main strut and was tightened. It was determined that this condition did affect component's operability.

Hangers N30-3258-G02, G03, G08, G10, G11, G12, G14, G15, G16, N30-3259-G06, G07 and G08 were found with notches worn on the threaded rod at the top of the support. This condition was evaluated and it was determined that this did not impact component's operability. Hangers N30-3258-G07 and G08 the notches were blended to remove sharp edges.

Hangers N30-3258-G04 and G15 were found to be slightly outside their cold setting. It was determined that this condition did not impact component's operability. The hangers were reset to their cold position.

These conditions were not reportable.

### 5.6 Refuel-06

#### 5.6.1 RPV Internals

During RF06, inspections were conducted on numerous reactor vessel components utilizing the recommended inspection methods and techniques contained in various Boiling Water Reactor Vessel Internals Project (BWRVIP) inspection and examination guidelines. While it is true that many of the guidelines are not yet approved by the NRC, the intent was to perform the highest quality visual inspections on RPV components. This proactive approach will assure the structural integrity of RPV components.

Inspections were initially scheduled for 50 percent of the Jet Pump risers and assemblies to comply with BWRVIP inspection recommendations. These inspection points included welds not previously inspected on the risers. A crack of approximately 1 ¾ inches long was identified on

the thermal sleeve to elbow weld (RS-1) on the riser of Jet Pump Nos. 7 and 8 at 120<sup>0</sup> AZ. This indication was evaluated and found acceptable for continued operation without repair. Reinspection of this indication will be performed during RF07. This crack is similar to indications identified in at least 5 other BWR plants within the last year.

Inspections of 2 of the 20 original control rod blades identified cracking on the sheath area near the handle on blade 02-39. These indications were evaluated and are not detrimental to the operation of the control blade. However, Reactor Engineering is evaluating future inspection requirements for the additional old style blades. While not a code inspection, these blades are periodically inspected as recommended by General Electric, following the chemistry transient in 1993.

Several new indications were identified on the steam dryer assembly on welds or areas not previously inspected. These indications are similar to other previously reported indications on the dryer. Both ISI and General Electric evaluated the indications. No repairs were required during RF06; however, recommendations were made to reinspect the non-safety related dryer assembly, both visually and ultrasonically in future outages.

Indications and conditions identified during previous outages were reinspected during RF06. The reinspection included the following items with no further degradation identified:

- Core Shroud ID linear indication above the H2 weld.
- Steam Dryer tie rod nut to washer tack welds cracks and support ring.
- Shroud head bolt No.9 was replaced because it would not latch.
- RPV internal surfaces - "Bathtub Ring".

The Jet Pump restrainer screws were again inspected (80 tack welds). The conditions were unchanged this outage on Jet Pump No.15, which had one of 2 tack welds cracked. No additional cracked welds were found. The condition identified previously did not require repair this outage.

Extensive inspection of Core Spray internal piping and spargers were performed per BWRVIP-18 to address recent industry occurrences of cracking. No indications of cracking were identified.

The Core Shroud was ultrasonically inspected as required by NRC commitment in accordance with the latest techniques and methods included in the BWRVIP inspection standards. Fermi 2 surpassed eight years of hot operating time and this resulted in required inspection of the H3, H4, H5, and H7 welds. Inspections were performed using focused phased array ultrasonic techniques. This inspection identified no evidence of intergranular stress corrosion cracking (IGSCC) in the welds and because of the extensive coverage obtained with the GE tooling, reinspection will not be required for 6 years.

No adverse changes in existing indications were noted. The RPV internals are in very good condition to date. There is no service related degradation that should impact plant performance during the next operating cycle. Internal inspections are achieving their goal of detecting and monitoring degradation and effecting prudent repairs/replacement to maintain the plant in a safe and reliable manner.

#### 5.6.2 External Volumetric and ASME Piping Weld Examinations

No service related defects were detected by nondestructive examinations performed during RF06.

Examinations were encountered with physical limitations that prevented complete code coverage from being achieved. Relief requests have been prepared or are being revised to address all limitations encountered during the First Inspection Interval.

NDE examinations have verified that ASME piping systems are in good structural condition and can support safe and reliable operation during the next operating cycle.

### 5.6.3 Component Supports

Eight component supports were discovered with minor service related discrepancies from the RF06 inspection population of 138 component supports. Structural integrity evaluations were performed which concluded all component supports satisfied operability requirements. Therefore, no reportable conditions exist.

## 5.7 Refuel-05

### 5.7.1 RPV Internals

During RF05, two new concerns were identified and evaluated. Nine of the twelve SRM / IRM dry tubes were found not to be fully engaged in the top guide, but are sufficiently engaged to remain functional.

One of the two tack welds on a Jet Pump restrainer screw were found to be cracked. As a result, all 80 restrainer screw tack welds were inspected. No additional cracked welds were found. This condition did not require repair during this outage.

Extensive inspection of Core Spray internal piping and spargers was performed to address recent industry occurrences of cracking. No indications of cracking were identified.

Indications identified during previous outages were reinspected during RF05. The reinspection included the following items:

- Core Shroud ID linear indications above the H2 weld.
- Steam Dryer tie-rod nut to washer tack welds cracks.
- Steam dryer support ring.
- RPV internal surfaces at the "bathtub ring".

No adverse changes in existing indications were noted. The RPV internals are in very good condition to date. There is no service related degradation that should impact plant performance during the next operating cycle. Internals inspections are achieving their goal of detecting and monitoring degradation and effecting prudent repairs/replacements to maintain the plant in a safe and reliable manner.

Repairs or Replacements Completed	Outage(s)
Shroud Head Bolt replacement	RF04, RF05
Jet Pump Beam replacement	RF04
Steam Dryer End Panel repair welding	RF03

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### 5.7.2 Reactor Pressure Vessel External/Volumetric and ASME Piping Weld Examinations

No service related defects were detected during nondestructive examinations performed during RF05. While it is still too early to draw any global conclusions about effectiveness of IGSCC mitigation treatments (IHSI and MSIP) performed at Fermi, preliminary indications are good. No IGSCC has been detected to date in any piping welds. Additionally, no evidence of fatigue cracking has been detected in any RPV, piping system, or support welds.

### 5.7.3 Component Supports

Several component supports were found with discrepancies between the existing field configuration versus as-built hanger sketch. Deviation Event Reports (DERs) were issued to perform structural integrity calculations. These evaluations determined that the existing field configurations did not affect the component operability; no reportable configurations were found. No additional component supports were examined as a result of these observations.

## 5.8 Refuel-04

### 5.8.1 RPV Internals

During inspection of the RPV Internals/Internal Components a number of indications were reported to Detroit Edison for review/disposition. The reported conditions are listed as follows:

Core Shroud - Extensive Visual Examination of the Core Shroud outside surface welds was performed following hydrolazing of each weld. The circumferential welds on the outside surface of the Core Shroud were visually examined (VT-1) to the maximum extent possible from the H-1 weld through the H-7 weld with no indications being found. The H-8 and H-9 shroud support welds were also examined (VT-3) but from a greater distance and at a greater camera angle. No indications were found.

Core Shroud Inside Surface - The inside surface of the Core Shroud was inspected to the maximum extent on the H-2 through H-4 welds (VT-1). No indications were found on the H-3 and H-4 welds on the inside surface of the shroud. Two small indications <1 inch long were found at the 125° azimuth just above the H-2 weld but not in the H-2 weld. These indications were in a general vertical direction, jagged in nature, and tight with no visible separation. These indications appear to be different from indications found at other BWR plants and most probably is a result of cold working during the fabrication process. These indications were evaluated against established flaw screening criteria and have no significant effect on the structural integrity of the shroud (DER 94-0221).

Corrosion Deposits/Biological Growth Deposits - Unusual surface conditions were identified during IVVI examinations on the unclad feedwater nozzles and also on the RPV cladding near the steam line nozzles 360° around the vessel. As a result, a sampling dive into the RPV was performed. A diver successfully completed the necessary corrosion product sampling, visual examinations, and exploratory examinations in the RPV. Corrosion deposit samples were removed from both the "C" feedwater nozzle unclad area (150°) and the cladding at approximately the same azimuth. Based on the results of the sampling, there was no evidence of micro biologically induced corrosion (MIC) in the vessel, although the samples did test positive for the presence of bacteria (DER 94-0204).

Additionally, the diver found (loose corrosion) on the feedwater nozzles. The deposits were easy to scrape off. There was no base metal attachment to the unclad surfaces. The corrosion deposits on the vessel cladding (360°) were found to be more tightly adhered than the deposits on the feedwater nozzles. However, the vessel cladding corrosion deposits have been looked at and have been confirmed that there had been no base metal attack.

No pits or degradation of the cladding were identified. A special hydrolazing nozzle was utilized to remove the corrosion deposits on both the feedwater nozzles and the vessel cladding. The hydrolyzing was 100 percent effective in cleaning the feedwater nozzles and approximately 75 percent effective in removing the deposits on the vessel cladding.

Steam Dryer - Tie Rod Nut/Washer Tack Welds - Many of the 48 tie rod end washers/nuts protrude above the unit end plate surface. Fifteen of the protruding tie rods had cracked tack welds; however, all but 4 of these had at least 2 intact tack welds at each location. The remaining 4 tie rod nut/washers, which had failed tack welds, did not represent a structural or functional concern. There is little or no concern that these four nuts will back out during the current cycle with the remaining sound welds. Repairs made during RF03 on the hood to end panel welds were reinspected and found to be in good condition (DER 94-0194).

Steam Dryer Support Ring - Two small indications were identified on the steam dryer support ring this outage. One indication was approximately 1/2 inch in length on the vertical face of the ring, and the other indication was 4 inches - 6 inches in length on the horizontal face of the support ring. Based on experience with support ring cracking on similar dryers, these indications were caused by IGSCC. The primary source of stress is residual fabrication stress. Based on experience from similar dryers of the same design with more severe cracking, this crack does not present a concern for the structural adequacy of the support ring (DER 94-0194).

Shroud Head Bolts - All Shroud Head Bolts were examined using Improved Ultrasonic Testing procedures. Crack-like indications were found in 16 of 48 bolts. The crack location was identical to those found at other BWR plants (i.e., at the collar crevice). The 16 cracked bolts were replaced with those of a new and more IGSCC crack resistant design. A 17th bolt was replaced since it had a slight bow that precluded reinstallation. The remaining old design bolts, which had no indications, were reviewed and found to be acceptable for the next operating cycle. These bolts were reinstalled returning the configuration to the original design of 48 bolts. A design review was performed, in part, to determine the structural significance of operating with indications in 16 shroud head bolts. This review determined that only 20 bolts are required to fulfill design requirements (DER 94-0210).

Jet Pump Hold Down Beams - As a precaution, Detroit Edison replaced all 20 Jet Pump hold down beams. This was done as a conservative measure based on recent industry experience with beam cracking and possible deleterious effects from the chemistry transient. Following replacement, Detroit Edison performed a baseline pre-service examination of the installed beams prior to plant start-up using the latest available technique for cracking detection. Of the 20 Jet Pump assemblies, 12 beam bolt assemblies were changed in situ, 7 required that the inlet mixer assembly be removed, and 2 mixer assemblies were removed to permit camera access to the RPV bottom head area. Each mixer that was removed had a camera inserted for RPV bottom area examination. No discrepancies were observed (DER 93-0643).



## 5.9 Refuel-03

### 5.9.1 RPV Internals

During inspection of the RPV Internals/Internal Components, two cracks were reported to Detroit Edison for review/disposition. The reported conditions are listed as follows:

Crack Number 1 was located in hood to end plate weld HE-B-1. The crack was approximately 50 inches long, with a maximum gap of 1/2 inch. The crack ran through the throat of the weld and was caused by high cycle fatigue. This crack is not uncommon to the industry, having occurred at other plants.

Crack Number 2 is located in the end plate of dryer bank "A" just above the weld to the end plate of the drain trough. The crack is in the weld heat affected zone (HAZ) between Tie Rods TR-A-7 and TR-A-8. The crack is caused by IGSCC.

Crack Number 1 was repaired by grinding out the existing failed weld and preparing the base metal edges for the new weld, clamping the crack closed, rewelding the hood to end plate joint, and welding a new reinforcing plate over the replaced/existing weld. With the exception of the original failed weld repair, this repair process was repeated at three (3) similar locations where the potential future weld failure was high. This was performed as a preventive measure to preclude future joint failure, higher personnel exposure, and higher future repair costs.

An evaluation was performed on Crack Number 2, and it was determined that this crack did not require repair as there is low probability that this crack will propagate into weld or base metal outside the HAZ. The crack will tend to grow at a slow rate, as the stresses at this crack location during dryer operation are low. Crack Number 2 will continue to be monitored during future outages.

These indications previously identified during inspections performed in RF01 and RF02 were again reinspected with no change in conditions noted. These areas in addition to the cracks identified and repairs performed during RF03 will be monitored during further inspection of the RPV internals as required by ASME Section XI, Table IWB-2500-1 (B13.10).

### 5.9.2 Component Supports

Several hangers were found with discrepancies between the installed condition and their configuration documents. Deviation Event Report (DER) 92-0573 was initiated for evaluation. It was determined that their nature was such that it did not affect the components operability and was not reportable. No additional supports were inspected as a result of these observations.

## 5.10 Refuel-02

### 5.10.1 RPV Internals

During inspection of the RPV Internals/Internal Components, an additional indication to the ones previously identified during RF01 was reported to Detroit Edison for review/disposition. The reported indications are listed as follows:

An apparent arc strike was noted on core spray internal piping at 310°. This was not recorded in the previous inspection.

This condition and those previously identified during RF01 were evaluated using prudent engineering practices and were determined not to be non-conforming to the original design requirement or detrimental to continued service.

No corrective action was taken to repair these indications. These areas will be monitored during future inspections of the RPV internals as required by ASME Section XI, Table IWB-2500-1 (B13.10).

#### 5.10.2 Piping Welds

No service related defects were detected during the inspection of piping welds, 2 welds having rejectable indications were reported to Detroit Edison for review/disposition. The reported indications are listed as follows:

Weld SW-E11-3151-1WH had rejectable surface indications identified during the magnetic particle examination; DER 91-0262 was initiated for evaluation.

Weld SW-RD-2-B3-W5LU-B had rejectable surface indications identified during the liquid penetrant examination; DER 91-0234 was initiated for evaluation.

Both welds were subsequently blend ground to remove the indications and reexamined by both surface and volumetric techniques with acceptable results. The initial indications on both welds were most likely left over from construction. No additional welds were inspected as a result of these minor indications.

### 5.11 Refuel-01

#### 5.11.1 RPV Internals

During inspection of the RPV Internals/Internal Components, several conditions were reported to Detroit Edison for review/disposition. The reported indications are listed as follows:

Tack weld on feedwater sparger bracket at 180° for attachment nut/pin was not visible.

Unusual surface conditions (arc strikes and pitting) were noted on Loop A Core Spray Piping at approximately 140°. Additional light scratches were noted on both Loop A and Loop B Core Spray Internal Piping.

Small arc strikes were noted on the Core Spray Internal piping/sparger brackets at 15° and 150°.

A small arc strike was noted on the Upper Core Spray Sparger (shroud area) at 145°.

The above conditions were evaluated using prudent engineering practices and were determined not to be non-conforming to the original design requirement or detrimental to continued service.

No corrective action was taken to repair these indications. These areas will be monitored during future inspections of the RPV internals as require by ASME Section XI, Table IWB-2500-1 (B13.10).

### 5.11.2 Component Supports

Hanger T48-2097-G21 was found to have insufficient clearances. Deviation Event Report (DER) 89-1315 was initiated for evaluation. It was determined that this was not reportable. The hanger was reworked to provide acceptable clearances as specified on the hanger sketch. Additional adjacent supports were visually inspected with no discrepancies identified.

## **SECTION 6**

### **PROGRAM STATUS, ASME SECTION XI CREDIT – IWB, IWC & IWF**

## 6.0 PROGRAM STATUS, ASME SECTION XI CREDIT - IWB, IWC, & IWF

Interval 2, Period 3, Refuel-11 (Excludes Pressure Testing)

### 6.1 CATEGORY B-A

6.1.1 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.11 Shell Welds-Circumferential

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	4	4 (1)	0	0%
TOTALS:	4	4 (1)	0	0%

#### NOTE:

- (1) Relief Request RR-A25 was written to alleviate the need for examination of these welds beyond the overlap zone of the intersecting longitudinal seam.

6.1.2 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.12 Shell Welds - Longitudinal

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	14	14	12	85.7%
TOTALS:	14	14	12	85.7%

6.1.3 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.21 Head Welds - Circumferential

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV Closure Head	2	2	2	100%
RPV Bottom Head	2	1 (1)	1	100%
TOTALS	4	3 (1)	3	100%

NOTE:

- (1) Some of these examinations are subject to limitations as identified in ISI/NDE Program Plan, Table A. Relief Request RR-A1 documents these limitations.

6.1.4 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.22 Head Welds - Meridional

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV Closure Head	13	13	10	76.9%
RPV Bottom Head	17	10(1)	9	90.0%
TOTALS:	30	23 (1)	19	82.6%

NOTE:

- (1) Some of these examinations are subject to limitations or are inaccessible as identified in ISI/NDE Program Table A. Relief Request RR-A1 documents these limitations.

6.1.5 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.30 Shell-To-Flange

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%) (1)
RPV	1	1	1	100%
TOTALS:	1	1	1	100%

NOTE:

- (1) The examination of shell-to-flange welds may be performed during the first and third inspection periods in conjunction with the nozzle examinations of Exam. Cat. B-D (Program B). At least 50% of shell-to-flange welds shall be examined by the end of the first inspection period, and the remainder by the end of the third inspection period. (Ref. IWB-2500-1, Category B-A, Footnote (4)).

6.1.6 CATEGORY: B-A Pressure Retaining Welds in Reactor Vessel  
ITEM NO: B1.40 Head-To-Flange

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	1	1	.66	66.6%
TOTALS:	1	1	.66	66.6%

### CATEGORY B-A TOTALS

Item No.	Total Requiring Examination (3)	Examined To Date (2)	Minimum Required (%) (1)	Maximum Allowed (%) (2)
B1.11	4	N/A (4)	N/A	N/A
B1.12	14	12 (85.7%)	N/A	N/A
B1.21	3	3 (100%)	N/A	N/A
B1.22	23	19 (82.6%)	N/A	N/A
B1.30	1	1 (100%)	50% (5)	N/A
B1.40	1	.66 (66.6%)	N/A	N/A
TOTALS:	46	35.66 (77.5%)	N/A	100%

#### NOTES:

- (1) Table IWB-2500-1 allows deferral to the end of the inspection interval.
- (2) Exam percentage requirements are based on category totals, not item totals. Item percentages are provided for information only.
- (3) Some of these examinations are subject to limitations or are inaccessible as identified in ISI/NDE Program Plan A Table. Relief Request RR-A1 documents these limitations.
- (4) Category B1.11 circumferential welds are only partially examined at the intersection of the Category B1.12 longitudinal welds in accordance with RR-A25 (BWRVIP-05) and are not individually tracked.
- (5) At least 50% of the shell to flange weld (item B1.30) shall be examined by the end of the first inspection period, and the remainder by the end of the third period.



## 6.2 CATEGORY B-D

6.2.1 CATEGORY: B-D Full Penetration Welds of Nozzles in Vessels  
 ITEM NO: B3.90 Nozzle-To-Vessel Welds

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%) (1)
RPV	30	30	23	76.7%
TOTALS:	30	30	23	76.7%

### NOTE:

- (1) At least 25% but not more than 50% (credited) of the nozzles shall be examined by the end of the first inspection period and the remainder by the end of the inspection interval (Ref. Table IWB-2500-1, Category B-D, Footnote (2)).

6.2.2 CATEGORY: B-D Full Penetration Welds of Nozzles in Vessels  
 ITEM NO: B3.100 Nozzle Inside Radius Section

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%) (1)
RPV	30	30	23	76.7%
TOTALS:	30	30	23	76.7%

### NOTE:

- (1) At least 25% but not more than 50% (credited) of the nozzles shall be examined by the end of the first inspection period and the remainder by the end of the inspection interval (Ref. Table IWB-2500-1, Category B-D, Footnote (2)).

### CATEGORY B-D TOTALS

Item No.	Total Requiring Examination	Examined to Date	Minimum Required (%) (1)	Maximum Allowed (%) (1)
B3.90	30	23 (76.7%)	25%	N/A
B3.100	30	23 (76.7%)	25%	N/A
TOTALS:	60	46 (76.7%)	25%	N/A

NOTE:

- (1) At least 25% but not more than 50% (credited) of the nozzles shall be examined by the end of the first inspection period and the remainder by the end of the inspection interval (Ref. Table IWB-2500-1, Category B-D, Footnote (2)).

### 6.3 CATEGORY B-F

6.3.1 CATEGORY: B-F Pressure Retaining Dissimilar Metal Welds  
ITEM NO: B5.10 RPV Nozzle to Safe End Butt Welds  $\geq 4"$  Dia.

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RRS	12	4	2	50%
CS	2	2	2	100%
RPV	3	2	1	50%
TOTALS:	17	8	5	62.5%

6.3.2 CATEGORY: B-F Pressure Retaining Dissimilar Metal Welds  
ITEM NO: B5.20 RPV Nozzle to Safe End Butt Welds  $\leq 4"$  Dia.

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
SLC	1	1	1	100%
TOTALS:	1	1	1	100%

6.3.3 CATEGORY: B-F Pressure Retaining Dissimilar Metal Welds  
ITEM NO: B5.130 Piping Butt Welds  $\geq 4"$  Dia.

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RHR	3	2	2	100%
CS	2	2	2	100%
RWCU	2	0	0	0%
TOTALS:	7	4	4	100%

### CATEGORY B-F TOTALS

Item No.	Total Requiring Examination	Examined to Date	Minimum Required (%)	Maximum Allowed (%)
B5.10	8	5 (62.5%)	(2)	(2)
B5.20	1(3)	1 (100%)	N/A	N/A
B5.130	4	4 (100%)	(2)	(2)
TOTALS:	12 (1)	9 (75%)	50%	100%

#### NOTES:

- (1) Risk Informed Inservice Inspection (RIISI) Program sample size.
- (2) Exam percentage requirements are based on Category totals, not item totals. Item percentages are supplied for information only.
- (3) The item listed under B5.20 is a GE SIL No. 571 recommended exam and is not counted for the purposes of Code inspection percentages.

6.4 CATEGORY B-G-1

6.4.1 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
ITEM NO: B6.10 Closure Head Nuts

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	68	68	68	100%
TOTALS:	68	68	68	100%

6.4.2 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
ITEM NO: B6.20 Closure Studs in Place

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	68	64 (1)	64	100%
TOTALS:	68	64 (1)	64	100%

NOTE:

- (1) Inspections are performed in conjunction with Item No. B6.30. Four (4) studs are removed at each Reactor Refueling Outage.

6.4.3 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
ITEM NO: B6.30 Closure Head Studs when removed

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	68	4 (1)	4	100%
TOTALS:	68	4 (1)	4	100%

NOTE:

- (1) Inspections are performed in conjunction with Item No. B6.20. Four (4) studs are removed at each Reactor Refuel.

6.4.4 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
 ITEM NO: B6.40 Reactor Vessel Threads in Flange

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	68	68	68	100%
TOTALS:	68	68	68	100%

6.4.5 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
 ITEM NO: B6.50 Reactor Vessel Closure Washers, Bushings  
 (When Removed)

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
Washers				
RPV	68	68	68	100%
Bushings				
	68	68 (1)	0	0%
TOTALS:	136	72 (1)	68	94.4%

NOTE:

- (1) Inspection of bushings is only required for connections that are disassembled. Studs 48-51 are removed to facilitate fuel movement.

6.4.6 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
ITEM NO: B6.180 Pumps, Bolts and Studs

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RRS	32	32	32	100%
TOTALS:	32	32	32	100%

6.4.7 CATEGORY: B-G-1 Pressure Retaining Bolting Greater than 2" in Dia.  
ITEM NO: B6.200 Pumps, Nuts, Bushings and Washers (1)

System	Total Comp.	Total Requiring Examination	Examined To Date (1)	Examined To Date (%)
RRS	32	32	32	100%
TOTALS:	32	32	32	100%

NOTE:

- (1) Inspections are performed in conjunction with Stud UT inspection per item B6.180.

### CATEGORY B-G-1 TOTALS

Item No.	Total Requiring Examination	Examined To Date	Minimum Required (%)	Maximum Allowed (%)
B6.10	68	68 (100%)	(1)	(1)
B6.20	64	64 (100%)	(1)	(1)
B6.30	4	4 (100%)	(1)	(1)
B6.40	68	68 (100%)	(1)	(1)
B6.50	72 (2)	45 (33.1%)	(1)	(1)
B6.180	32	16 (50%)	(1)	(1)
B6.200	32	16 (50%)	(1)	(1)
TOTALS:	340	264 (77.6%)	50%	100%

**NOTES:**

- (1) Exam percentage requirement are based on Category totals, not item totals. Item percentages are shown for information only.
- (2) Inspection of bushings is only required for connections that are disassembled.



## 6.5 CATEGORY B-G-2

6.5.1 CATEGORY: B-G-2 Pressure Retaining Bolting 2" and smaller in Dia.  
 ITEM NO: B7.10 Reactor Vessel-Bolts, Studs and Nuts

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	3	3 (1)	3	100%
TOTALS:	3	3 (1)	3	100%

### NOTE:

- (1) Represents Flanged/Bolted Connections-All bolts, studs and nuts were examined for each flanged connection examined.

6.5.2 CATEGORY: B-G-2 Pressure Retaining Bolting 2" and smaller in Dia.  
 ITEM NO: B7.50 Piping-Bolts, Studs and Nuts

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
HPCI & RCIC	2	2 (1)	2	100%
TOTALS:	2	2 (1)	2	100%

### NOTE:

- (1) Represents Flanged/Bolted Connections-All bolts, studs and nuts were examined for each flanged connection examined.

6.5.3 CATEGORY: B-G-2 Pressure Retaining Bolting 2" and smaller in Dia.  
ITEM NO: B7.60 Pump Bolts, Studs and Nuts, and Seal Bolting

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RRC	2	2 (1)	1	50%
TOTALS:	2	2 (1)	1	50%

NOTE:

- (1) Represents flanged/bolted connections-all bolts, studs and nuts are examined for each connection examined.

6.5.4 CATEGORY: B-G-2 Pressure Retaining Bolting 2" and smaller in Dia.  
ITEM NO: B7.70 Valves-Bolts, Studs and Nuts

System	Total Comp.	Total Requiring Examination (1)	Examined To Date (2)	Examined To Date (%)
MS	38	38	30	78.9%
RRS	4	4	4	100%
RHR	10	10	8	80%
CS	6	6	4	66.6%
HPCI	3	3	3	100%
RCIC	3	3	3	100%
RWCU	9	9	6	66.7%
FW	8	8	7	87.5%
TOTALS:	81	81	65	80.2%

NOTES:

- (1) Represents flanged/bolted connections-all bolts, studs and nuts were examined for each flanged connection examined.
- (2) All replacement bolting material utilized was visually inspected.

6.5.5 CATEGORY: B-G-2 Pressure Retaining Bolting 2" and smaller in Dia.  
ITEM NO: B7.80 CRD Housings-Bolts, Studs and Nuts

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
CRD	185	185 (1)	89 sets*	48.1%
TOTALS:	185	185 (1)	89 sets*	48.1%

\*100% of disassembled flange bolting.

NOTE:

- (1) Inspections are only required when CRD Housing Flanges are disassembled (Ref. Table IWB-2500-1, Category B-G-2).

### CATEGORY B-G-2 TOTALS

Item No.	Total Requiring Examination	Examined To Date (2)	Minimum Required (%)	Maximum Allowed (%)
B7.10	3	3 (100%)	(1)	(1)
B7.50	2	2 (100%)	(1)	(1)
B7.60	2	1 (50%)	(1)	(1)
B7.70	81	65 (80.2%)	(1)	(1)
B7.80	185 (2)	89 (48.1%)	(1)	(1)
TOTALS:	88	71 (80.7%)	50%	100%

#### NOTES:

- (1) Exam percentage requirements are based on category totals not item totals. Item packages are supplied for information only.
- (2) Inspections are only required when CRD housing flanges are disassembled, therefore they are not counted in the Code percentage totals.

## 6.6 CATEGORY B-H

6.6.1 CATEGORY: B-H Integral Attachments for Vessels  
 ITEM NO: B8.10 Reactor Vessel-Integrally Welded Attachments

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RPV	1	1	1	100%
Support Skirt				
Stabilizer	8	1	1	100%
Bracket Welds				
Top Head	4	4	1	25%
Lifting Lugs				
TOTALS:	13	6	3	50%

## 6.7 CATEGORY B-J

6.7.1 CATEGORY: B-J Pressure Retaining Welds in Piping  
 ITEM NO: B9.11 Circumferential Welds  $\geq 4"$  Dia.

System	Total Comp.	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)
MS	113	11	9	81.8%
RRS	109	15	11	73.3%
RHR	71	5	5	100%
CS	42	3	0	0%
HPCI	14	2	2	100%
RCIC	16	2	2	100%
RWCU	70	7	7	100%
FW	123	18	12	66.7%
RPV	5	0	0	N/A
TOTALS:	563	63	48	76.2%

NOTE:

- (1) Risk Informed Inservice Inspection (RIISI) Program sample size.

### CATEGORY B-J TOTALS

Item No.	Total Requiring Examination (1)	Examined To Date	Minimum Required (%) (1)	Maximum Allowed (%) (1)
B9.11	63	48 (76.2%)	50%	100%

**NOTE:**

- (1) Fermi Risk Informed Inservice Inspection Program sample size.

6.8 CATEGORY B-K-1

6.8.1 CATEGORY: B-K-1 Integral Attachments for Piping Pumps and Valves  
 ITEM NO: B10.10/B10.20 Piping-Integrally Welded Attachments

System	Total Comp. (1)	Total Requiring Examination (2)	Examined To Date	Examined To Date (%) (3)
All Class 1 Piping B10.10	13	2 locations (8 welds)	2 locations (8 welds)	100%
Pumps B10.20	3	1	0	0%
TOTALS:	16	3	2	66.6%

NOTES:

- (1) Total component supports with integral attachments selected for examination per Code Case N-491-1.
- (2) Total examinations required for integral attachments per Code Case N-509.
- (3) One location examined each period.

## 6.9 CATEGORY B-M-2

6.9.1 CATEGORY: B-M-2 Valve Bodies  
 ITEM NO: B12.50 Valve Body, exceeding 4" Nominal Pipe Size

System	Total Comp.	Total Requiring Examination	Examined To Date (1)	Examined To Date (%)
MS	23	23	7	30.4%
RRS	4	4	1	25%
RHR	10	10	3	30%
CS	6	6	2	33.3%
HPCI	3	3	1	33.3%
RCIC	1	1	0	0%
RWCU	5	5	0	0%
FW	8	8	6	75%
TOTALS:	60	60	20	(1)

### NOTE:

- (1) Per ASME Section XI IWB-2500-1, Table B-M-2 table note, the examinations are limited to one valve within each group of valves that are of the same constructional design and perform similar functions in the system. VT-3 inspections are performed on all Class 1 valves during disassembly for maintenance. Therefore, percentages are not applicable.



## 6.10 CATEGORY B-O

6.10.1 CATEGORY: B-O Pressure Retaining Welds in Control Rod Housings  
 ITEM NO: B14.10 (2) Reactor Vessel-Welds in CRD Housings

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
RPV	40	8 (1)	6	75%	50%	100%
TOTALS:	40	8 (1)	6	75%	50%	100% (3)

### NOTES:

- (1) 10% of peripheral housings (2 welds per housing).
- (2) B14.10 is the only Item for this Category.
- (3) Examinations evenly spaced during each period of the inspection interval.

## 6.11 CATEGORY C-A

6.11.1 CATEGORY: C-A Pressure Retaining Welds in Pressure Vessel  
 ITEM NO: C1.10 Shell Circumferential Welds

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RHR	1	1	1	100%
TOTALS:	1	1	1	100%

6.11.2 CATEGORY: C-A Pressure Retaining Welds in Pressure Vessel  
 ITEM NO: C1.20 Head Circumferential Welds

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RHR	1	1	1	100%
TOTALS:	1	1	1	100%

#### CATEGORY C-A TOTALS

Item No.	Total Requiring Examination	Examined To Date	Minimum Required (%)	Maximum Allowed (%)
C1.10	1	1 (100%)	N/A	N/A
C1.20	1	1 (100%)	N/A	N/A
TOTALS:	2	2 (100%)	N/A (1)	N/A (1)

#### NOTE:

- (1) Exams scheduled for the 1<sup>st</sup> and 3<sup>rd</sup> period.

## 6.12 CATEGORY C-B

6.12.1 CATEGORY: C-B Pressure Retaining Welds in Vessels  
 ITEM NO: C2.21 Nozzle-To-Shell (or Head) Weld

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RHR	4	2	2	100%
TOTALS:	4	2	2	100%

6.12.2 CATEGORY: C-B Pressure Retaining Nozzle Welds in Vessels  
 ITEM NO: C2.22 Nozzle Inside Radius Section

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
RHR	4	2	2	100%
TOTALS:	4	2	2	100%

### CATEGORY C-B TOTALS

Item No.	Total Requiring Examination	Examined To Date	Minimum Required (%)	Maximum Allowed (%)
C2.21	2	2(100%)	N/A	N/A
C2.22	2	2(100%)	N/A	N/A
TOTALS:	4	4(100%)	N/A (1)	N/A (1)

#### NOTE:

- (1) Exams scheduled for the 1<sup>st</sup> and 3<sup>rd</sup> examination period.

## 6.13 CATEGORY C-C

6.13.1 CATEGORY: C-C Integral Attachments for Vessels, Piping, Pumps and Valves  
ITEM NO: C3.10 Pressure Vessels

System	Total Comp. (1)	Total Requiring Examination (2)	Examined To Date	Examined To Date (%)
RHR	5	1 (19 welds)	19 welds	100%
TOTALS:	5	1 (19 welds)	19 welds	100%

### NOTES:

- (1) Total component supports with integral attachment welds selected for examination per Code Case N-491-1.
- (2) Total examinations required for integral attachment welds per Code Case N-509.

6.13.2 CATEGORY: C-C Integral Attachments for Vessels, Piping, Pumps and Valves  
ITEM NO: C3.20 Piping Integrally Welded Attachments

System	Total Comp. (1)	Total Requiring Examination (2)	Examined To Date	Examined To Date (%)
All Class 2 Systems	33	4	3	75%
TOTALS:	33	4	3	75%

### NOTES:

- (1) Total component supports with integral attachment welds selected for examination per Code Case N-491-1.
- (2) Total examinations required for integral attachment welds per Code Case N-509.

### CATEGORY C-C TOTALS

Item No.	Total Requiring Examination	Examined To Date	Minimum Required (%)	Maximum Allowed (%)
C3.10	1	1 (100%)	N/A	N/A
C3.20	4	3 (75%)	N/A	N/A
TOTALS:	5	4 (80%)	50%	100%

## 6.14 CATEGORY C-F

6.14.1 CATEGORY: C-F-1 Socket Welds (1)  
 ITEM NO: N/A NRC Augmented Commitment

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
SLC	131	16	13	81.2%
TOTALS:	131	16	13	81.2%

### NOTE:

- (1) The Class 2 portion of the Standby Liquid Control System is < 4" NPS and is exempt per ASME Section XI. Fermi is committed to examine 16 of 131 system welds during each inspection interval.

6.14.2 CATEGORY: C-F-2 Pressure Retaining Welds in Carbon or Low Alloy Steel Piping  
 ITEM NO: C5.51 / C5.81 Piping Welds  $\geq 3/8$ " in Normal Wall Thickness for Piping  $\geq 4$ "NPS

System	Total Comp.	Total Requiring Examination	Examined To Date	Examined To Date (%)
MS	74	6	5	83.3%
CRD	34	3	2	66.7%
RHR	464	34	27	79.4%
CGC	113	6	6	100%
HPCI	154	12	9	75%
CS	196	15	10	66.7%
Containment Piping (1)	279	23	17	73.9%
TOTALS:	1314	99	76	76.8%

### NOTE:

- (1) Containment piping includes augmented selections made in accordance with Relief Request RR-A26.

### CATEGORY C-F TOTALS

Item No.	Total Requiring Examination (1)	Examined To Date	Minimum Required (%) (2)	Maximum Allowed (%) (2)
C-F-1 (Augmented)	16	13 (81.2%)	N/A	N/A
C-F-2 (C5.51 & C5.81)	99	76 (76.8%)	N/A	N/A
TOTALS:	115	89 (77.4%)	50%	100%

#### NOTES:

- (1) Includes Augmented Class 2 selections.
- (2) Exam percentage requirements are based on Category C-F totals, not item totals. Item percentages are supplied for information only.

6.15 CATEGORY F-A

6.15.1 CATEGORY: F-A Plate and Shell Type Supports  
ITEM NO: F1.10-F1.40

Section XI Class	System No.	System ID	Total Requiring Examination	Examined To Date	Examined To Date (%)
Class 1	B11	RPV	9	8	88.9%
	B21	Steam Supply	8	6	75%
	B31	Reactor Recirc	6	5	83.3%
	E11	RHR	3	3	100%
	E21	CS	3	2	66.7%
	E41	HPCI	1	0	0%
	E51	RCIC	1	1	100%
	G33	RWCU	4	4	100%
	N21	Feedwater	5	4	80%
CLASS 1 TOTALS			40	33	82.5%
Class 2	B21	SRV	6	5	83.3%
	C11	CRD	4	4	100%
	E11	RHR	45	36	80%
	E21	CS	16	12	75%
	E41	HPCI	14	11	78.6%
	N30	MS	6	5	83.3%
	P11	Demin	1	1	100%
	T48	GCG	16	15	93.8%
CLASS 2 TOTALS			108	89	82.4%
Class 3	E11	RHRSW	14	11	78.6%
	G33	RWCU	1	1	100%
	P42	RBCCW	1	1	100%
	P44	EECW	33	25	75.8%
	P45	EESW	17	13	76.5%
	R30	DGSW	10	10	100%
CLASS 3 TOTALS			76	61	80.3%

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**CATEGORY F-A TOTALS**

Item No.	Total Requiring Examination	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
F-A Class 1	40	33	82.5%	N/A	N/A
F-A Class 2	108	89	82.4%	N/A	N/A
F-A Class 3	76	61	80.3%	N/A	N/A
TOTALS:	224	183	81.7%	67%	100%

## **SECTION 7**

### **UPDATED PROGRAM TABLES**

## 7.1 PROGRAM TABLES

### 7.1.1 Inservice Inspection Program (Plan) Tables (NDE)

The accompanying table lists the components or areas that are to be examined during the interval as updated for this refueling outage. Listed in an order following the items presented in the ASME Section XI, Subsections IWB, IWC, and IWD, the tables contain the following information:

**Code Class:** is the ASME class as defined in accordance with the **Code of Federal Regulations (10CFR50.55a)**, Regulatory Guide 1.26, and NUREG-0800.

**Interval:** refers to the 120 month inspection interval as identified in Section 1.0 of this document.

**Page/Rev.:** indicates the consecutive and total page numbers for the NDE program. Rev. or Revision indicates the revision of the individual page or entire document.

**Code Category:** is the Examination Category as defined by ASME Section XI, Subarticles IWB-2500, IWC-2500 or IWD-2500.

**Item Number:** lists the Item No. as defined by ASME Section XI, Subarticles IWB-2500, IWC-2500, or IWD-2500. Note: all Item Numbers are addressed even though they may not be applicable to Fermi 2.

**Description and Unique Identification:** repeats the generic descriptions listed in tables IWB-2500-1, IWC-2500-1 or IWD-2500-1. The components to be examined are then listed by system and/or specific identification.

**Exam Method-Exam Method Selected:** identifies the code required method of examination, i.e., Volumetric, Surface, or Visual. The specific examination selected is shown for the component, i.e., UT, PT, MT, or VT (see list of abbreviations for expanded definitions).

**Relief Request:** if applicable, indicates the request for relief applicable in accordance with 10CFR50.55a(g)(5)(iii).

**Augmented Exam Method:** indicates the examination was required to meet a regulatory or licensing commitment and its outage code when completed or scheduled.

**Sel. Basis:** shows the abbreviation for the basis for selection of a component for examination.

**Period:** marks the 40 month period within the 120 month interval when the examination is scheduled (3 periods per interval).

## NOTE

A tentative schedule of specific examinations has been completed for the second 10 -year interval. All exams are scheduled for inspection in accordance with the rules of ASME Section - XI, IWA, IWB, IWC, IWD and IWF, and as augmented by specific commitments (i.e., NUREG-0313). Future revisions to this program (plan) shall be issued to reflect actual examinations to be performed during each refuel outage as well as all examinations completed during previous outages.

**Remarks:** are reserved for additional information to explain, amplify, or provide added details necessary to clarify the examination requirements.

7.1.1.1 Examination methods delineated in the following tables are intended to be representative of the ISI practice to be used or of preservice methods utilized. In either case, it should be recognized that either UT or RT is an acceptable volumetric exam and either PT or MT is an acceptable surface exam. Unique weld joint parameters may, of course, dictate more restrictive selection criteria (e.g., high background radiation will preclude RT, stainless materials will preclude MT, etc.). It is intended that the process which selects exam methods for inspections under this plan treat UT and RT as interchangeable and PT and MT as interchangeable with consideration given to past practice in light of the reproducibility of results.

### 7.1.1.2 List of Abbreviations

The following abbreviations are used:

#### Plant Identification System (PIS) - Codes for Plant Systems

B21	- PIS Number for the Nuclear Boiler System
B31	- PIS Number for the Reactor Recirculation System
C11	- PIS Number for the Control Rod Drive System
C41	- PIS Number for the Standby Liquid Control System
E11	- PIS Number for the Residual Heat Removal System
E21	- PIS Number for the Core Spray System
E41	- PIS Number for the High Pressure Coolant Injection System
E51	- PIS Number for the Reactor Core Isolation Cooling System
G33	- PIS Number for the Reactor Water Cleanup System
G41	- PIS Number for the Fuel Pool Cooling System
N21	- PIS Number for the Feedwater System
N30	- PIS Number for the Main Steam System
T48	- PIS Number for the Combustible Gas Control System

### Acronyms Used to Identify Plant Systems

CGC	- Combustible Gas Control
CRD	- Control Rod Drive
CS	- Core Spray
FPC	- Fuel Pool Cooling
HPCI	- High Pressure Coolant Injection
RCIC	- Reactor Core Isolation Cooling
RHR	- Residual Heat Removal
RRC	- Reactor Recirculation
RWCU	- Reactor Water Cleanup
SDV	- Scram Discharge Volume
SLC	- Standby Liquid Control

### Nondestructive Examination Method Abbreviations

MT	- Magnetic Particle Examination
PT	- Liquid Penetrant Examination
UT	- Ultrasonic Examination
VT	- Visual Examination
VT-1	- Visual Examination per IWA-2211
VT-2	- Visual Examination per IWA-2212
VT-3	- Visual Examination per IWA-2213
UT Mech.	- UT Mechanized
UT Mech./Man.	- UT Mechanized or Manual

### Weld Selection Basis Abbreviations

HCU	- High Cumulative Usage
HS	- High Stress
MS	- Moderate Stress
R	- Random selection of structural discontinuity weld
TE	- Terminal End
A	- Augmented
DM	- Dissimilar Metal Weld
RI	- Risk Informed Methodology

### Degradation Mechanisms

IGSCC	- Intergranular Stress Corrosion Cracking
CC	- Crevice Corrosion
TASCS	- Thermal Fatigue Cracking

## Plant Components and Weld Terminology Abbreviations

CRDH	- Control Rod Drive Housing
EXPJT	- Pipe Expansion
FBC	- Field Weld
HX	- Heat Exchanger
HXS	- Heat Exchanger Shell
IBR	- Inner Bore Region (Nozzle)
IIH	- Incore Instrumentation Housing
LD	- Longitudinal Downstream (Seam Weld)
LU	- Longitudinal Upstream (Seam Weld)
PAD	- Integral Attachment Weld Directly onto the Pressure Boundary of the Pipe
PSFW	- Piping Support Field Weld
PS	- Primary Steam (Nuclear Steam Supply System)
RD	- Recirculation Discharge
RS	- Recirculation Suction
SDV	- Scram Discharge Volume
SW	- Shop Weld
TRUNION	- Hanger Support Welded Directly onto the Pressure Boundary of the Pipe
VBB	- Valve Body and Bonnet Housing

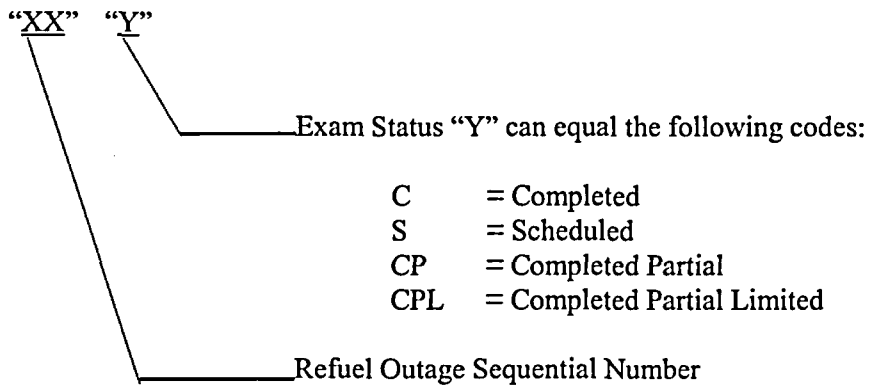
## Generic Miscellaneous Abbreviations

BWR	- Boiling Water Reactor
CRC	- Corrosion Resistant Cladding
DWG	- Drawing
DM	- Dissimilar Metal Weld
EF2	- Enrico Fermi 2
in.	- Inches
N/A	- Not Applicable
NUREG	- Nuclear Regulatory Guide
PWR	- Pressurized Water Reactor
RR	- Relief Request
RPV	- Reactor Pressure Vessel

## Component Support Abbreviations

A	- Anchor
C	- Constant Support
G	- Guide
R	- Rigid Support
SP	- Spring Hanger

## Outage Codes



<b>Example:</b>	07C	= Seventh Refueling Outage, Completed Exam
	08S	= Eighth Refueling Outage, Scheduled Exam
	08CP	= Eighth Refueling Outage, Completed Exam, Partial
	08CPL	= Eighth Refueling Outage, Completed Exam, Partial Limited

## 7.1.2 Inservice Inspection Program (Plan) Tables (Component Supports)

- 7.1.2.1 The accompanying tables list the component supports to be examined during the first inspection interval. The tables are divided into ISI Class – 1, 2, and 3 and start with Class – 1. The tables contain the following information:

**Code Class:** is the ASME class as defined in accordance with the **Code of Federal Regulations** (10CFR50.55a), Regulatory Guide 1.26, and NUREG-0800.

**Interval:** refers to the 120 month inspection interval as identified in Section 1.0 of this document.

**Page/Rev.:** indicates the consecutive and total page numbers for the NDE program. Rev. or Revision indicates the revision of the individual page or entire document.

**Code Category:** is the Examination Category as defined by ASME Section XI, Subarticle IWF.

**Item Number:** NOT USED – because IWF category is the main selection determining factor for component supports, Item No. was not used to make hanger selections. The Item Number depicts inspection points and therefore, is more appropriately addressed in inspection procedures. The Item Numbers for each category was used to identify the type of visual examination(s) each component support will receive and this information is provided in the tables.

**PIS No./System:** identifies the Plant Identification System Number (PIS No.) and the System Title for each group of component supports to be examined.

**Isometric/Multiple Loop:** identifies the specific isometric drawing applicable to a particular group of component supports and the Multiple Loop identification No., if applicable.

**Unique Identification:** identifies the specific component support subject to examination.

**Exam Method – Exam Method Selected:** identifies the code required method of examination (i.e., visual) and the specific examination selected for each component shown (i.e., VT-1, VT-3).

**Type:** identifies the type of component support to be examined.

**Relief Request:** if applicable, indicates the request for relief applicable in accordance with 10CFR50.55a(g)(5)(iii).

**Period:** marks the 40 month period within the 120 month interval when the examination is scheduled (3 periods per interval).

**Remarks:** is reserved for additional information to explain, amplify, or provide added details necessary to clarify the examination requirements.



#### 7.1.2.2 List of Abbreviations

For definitions of abbreviations used in the following tables, refer to Paragraph 10.1.2 of this document.

#### 7.1.2.3 Inservice Inspection Program (Plan) Tables (NDE)

- Table A – Class 1, 2, and 3 Welds and Components
- Table B - Supports
- Table C - Snubbers

### 7.1.3 NOTES

#### NOTE 1

Examination categories B-F and B-J contain duplicate examination requirements for dissimilar metal pressure retaining welds in piping. Category B-J does not have a separate item number for dissimilar metal (DM) welds. Because of this, all DM welds will be included in category B-F. This will aid in identifying those welds that may have additional augmented, regulatory, or PDI requirements applied to them.

#### NOTE 2

In response to Generic Letter (GL) 88-01 and NUREG-0313 Rev. 2, Detroit Edison had committed in NRC-88-0243, NRC-89-0297, and NRC-90-0103 to the inservice inspection requirements for austenitic stainless steel welds in accordance with the guidelines of Generic Letter 88-01. All applicable welds have been classified according to NUREG-0313 Rev. 2 requirements with the required percentages of welds being included in this program. The applicable category (GL 88-01) is identified in the remarks column. All inspections will be performed utilizing procedures and personnel qualified to current Utility PDI Guidelines. In correspondence letter NRC-01-0038, Detroit Edison had committed to use the NRC approved Generic Letter 88-01 alternative inspection schedule requirements of BWRVIP-75. Sample expansion will be as specified in the Fermi Risk Informed Inservice Inspection Program for Category A welds, and BWRVIP-75 for all other augmented weld selections. Methods and criteria for crack evaluation and repair shall be in conformance with IWB-3600 of Section XI of the 1989 Edition of ASME Boiler and Pressure Vessel Code. Detroit Edison requested that Non-Safety Related, Category D welds be removed from GL 88-01 scope per NRC-92-0090. The NRC response (TAC No. M84117, dated December 18, 1992) modified the inspection interval such that inspection of the subject piping welds on a sampling basis of at least 10 percent of the weld population be performed during each refueling outage.

#### NOTE 3

Per the EF-2 UFSAR Subsection 4.5.1.2.7, Detroit Edison had agreed to ultrasonically inspect the RPV Jet Pump Hold Down Beams at each Reactor Refueling Outage until

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sufficient experience was gained to change the frequency of inspection. If a cracked beam were detected, it would be replaced prior to return to power operation. Due to the failure of a jet pump hold down beams at another plant, SIL No. 330, Supplements 1 and 2, and RICSIL No. 065 were issued. As a result, all jet pump hold down beams were replaced with beam assemblies that are less susceptible to IGSCC than the original assemblies during RF04. Subsequent UT and alternative inspections will be performed at future refueling outages based on industry experiences and the recommendations provided in IE Bulletin 80-07, NUREG/CR-3052, and the latest edition of BWRVIP-41. All beams were reinspected in RF09.

#### NOTE 4

ASME Section XI Category B-E requires inspection of the external surfaces of 25 percent nozzles among each group of penetrations of comparable size and function. Fermi practice is to perform a VT-2 examination inside the RPV bioshield annulus for RPV instrumentation nozzles, and of the bottom head penetrations through the skirt hatches, and under vessel during the system leakage test each refueling outage. If leakage is identified, further investigation will be made to identify the exact location.

#### NOTE 5

Component supports and the associated integrally welded attachments are selected for examination in accordance with Code Cases N-491-1 (Alternative Requirements for Selection and Examination of Component Supports) and N-509 (Alternative Rules for the Selection and Examination of Integrally Welded Attachments).

#### NOTE 6

Visual examination of snubbers covers only the snubber unit, except for those snubber supports selected in accordance with Code Case N-491-1. The balance of the support (integral and nonintegral attachments including lugs, bolting, pins, clamps, and support steel) will be visually examined in accordance with subsection IWF requirements.

#### NOTE 7

Per SIL No. 420, an inspection will be performed on the jet pump sensing lines and support brackets when convenient. This inspection will determine if the weld between the support brackets and the vertical run of the sensing line is intact. Additionally, the inspection should concentrate on the jet pumps closest to the recirculation outlet nozzles. Inspection will be performed on the Jet Pumps scheduled for inspections during the refueling outage.

#### NOTE 8

Per NRC Information Notice No. 90-30, all dissimilar metal welds containing Inconel 600 series base materials, Alloy 82 and 182 weld butter, and/or filler metal shall be examined following the guidelines of SIL No. 455. It is essential and required that all examinations be performed by the use of multiple refracted longitudinal waves (45° and 60° recommended) for crack detection and sizing in the Alloy 182 material and the low alloy material. All scanning of welds will be performed in both an axial and circumferential direction followed by a 45° shear wave if indications are identified using refracted longitudinal techniques. Examination of nozzle welds shall include the full thickness

volume and be extended into the area of Alloy 182 Weld Material Buttering. The purpose of this additional/supplemental examination is to assure that Alloy 182 Butter Cracking in the nozzle bore has not occurred and extended into the low alloy nozzle material. Beginning with RF09, ASME Section XI, Appendix 8, Supplement 10 requirements as implemented by the Utility Performance Demonstration Initiative are mandatory.

#### NOTE 9

Per SIL No. 433, Supplement 1, an Ultrasonic (UT) inspection of the entire shroud head bolt length was performed on the 48 shroud head bolts for evidence of cracking during RF04. All bolts have been replaced with a new design that is more resistant to cracking. Based on industry experience, additional inspections will be performed at subsequent refuel outages.

#### NOTE 10

During RF06, the Reactor Recirculation pumps were modified to the 4th generation design configuration. This configuration was designed to mitigate known causes of shaft and cover cracking and provides for ultrasonic inspection of the shaft without requiring complete pump disassembly and removal. This modification also included a change out of the rotating element to a welded impeller and added rotating baffle. In addition, the hydrostatic bearing was modified to a non-welded design. The need to completely disassemble is reduced by modification to the 4th generation configuration. The following augmented inspections will be performed if the pump is disassembled. Per SIL No. 415, a supplemental liquid penetrant or volumetric inspection of the suction splitters will be performed if visual inspections identify cracking of the suction splitters or attachment welds. Per RICSIL No. 038 and NRC Information Notice 89-20, inspections will be performed on the hydrostatic bearing and baffle plate. Inspection of the heater/cooler assembly should be performed if the pump is disassembled. Disassembly of the pump for inspections will be evaluated prior to each refuel outage based upon industry experience and hours of operation.

#### NOTE 11

Per SIL No. 474, a visual inspection will be performed on steam dryer drain channel welds during refueling outages. Portions of the steam dryer assembly, dryer banks, and welds will be visually inspected each refueling outage.

#### NOTE 12

Per IE Bulletin 80-13, and SIL No. 289, Revision 1, Supplement 2, a visual inspection is performed on the core spray internal piping each refueling outage. Inspection points include those identified in IE Bulletin 80-13, SIL No. 289, Revision 1, Supplement 2, and BWRVIP-18. The inspection plan will follow the inspection recommendations and frequency provided in BWRVIP-18 as detailed in the Performance Engineering Program (PEP) 16, Appendix III.

#### NOTE 13

Per SIL No. 462, inspection of the shroud support access hole cover was performed at the end of the first 10-year interval. Subsequent reinspections will be based on industry experience and the inspection technique applied (Reference PEP16, Appendix II).

#### NOTE 14

All inservice examinations of the Reactor Pressure Vessel welds will be performed using both manual and mechanical examination techniques and will most likely be performed from the outside of the vessel. Limitations encountered that affect the examination volume as prescribed by ASME Section XI will be documented in an examination report.

All previous examinations were conducted in accordance with the requirements of Regulatory Guide 1.150, Revision 1, to the extent practical (Reference NRC-87-0078). Beginning with RF08, ASME Section XI, Appendix VIII, Supplements 4 and 6, requirements for vessel welds were implemented as specified in 10CFR50.55a.

Indications, regardless of amplitude, will be recorded on tape during the mechanized examination for analysis. Similarly, signal responses will be scrutinized during the manual examination process and indications will be recorded for further analysis and resolution.

#### NOTE 15

Visual inspections for leakage required by ASME Section XI Code Categories B-P, C-H, and D-B are performed using site procedures. Test packages for all tests performed are developed utilizing the Inservice Inspection Classification Boundary Drawings listed on Table A-5-5.1 as the basis.

All components on the following systems are included in the Class 1 inspections: B21, B31, C41, E11, E21, E41, E51, G33, N21, and P34.

All components on the following systems are included in the Class 2 inspections: C11, C41, E11, E21, E41, G41, G51, N11, N30, P34, T4804, and T50.

All components on the following systems are included in the Class 3 inspections: E11, P42, P44, P45, and R30.

#### NOTE 16

Per RICSIL No. 059 and SIL No. 554, inspection of the top guide beams should be performed at grid locations where fuel and blade guides have been removed for other reasons. Inspection of selected grid locations will be performed during refueling outages. Additionally, ultrasonic inspection should be considered if cracking is found or as recommended by SIL No. 554.

#### NOTE 17

The extent of inspection and frequency for Jet Pump components and welds will follow the recommendations provided in BWRVIP-41. BWRVIP-41 replaced/modified the recommendations of SIL Nos. 551 and 574. Inspections will continue to be performed per the recommendations of SIL No. 574 on the adjusting screw tack welds in conjunction with the inspection of those Jet Pumps scheduled for inspection each refueling outage. Repairs, if required, will be performed in accordance with the recommendations of SIL No. 574 as appropriate. In addition, verification of contact will be performed on the restrainer screws and wedge assembly to the inlet mixer on Jet Pumps selected for

inspection per the recommendations of RICSIL No. 078.

#### NOTE 18

Per recommendation of SIL No. 571, augmented inspection of this stainless steel nozzle should be performed after 15 years of operation. The inspection boundary for this weld shall be extended to include all stainless steel material accessible for ultrasonic examination. If linear surface indications are found, ultrasonic examination should be used to determine crack depth. Inspection frequency has been modified per BWRVIP-27 to a 10-year reinspection period.

#### NOTE 19

Visual inspection of the core shroud and shroud welds will be performed in accordance with the recommendations contained in BWRVIP, "BWR Core Shroud Inspection and Flaw Evaluation Guideline," (BWRVIP-01) utilizing techniques detailed in BWRVIP, "Reactor Pressure Vessel and Internals Examination Guidelines," (BWRVIP-03). SIL No. 572, Revision 1 inspection recommendations have been superseded. Fermi 2 has committed to perform future inspections per the guidance of the BWRVIP. Visual inspections will be performed as an enhanced EVT-1 inspection with the capability to resolve a 1/2-mil wire on the inspection surface. The BWRVIP has imposed additional guidelines for inspection based on years of operation, materials, and conductivity. Based on the above, during RF06, a baseline inspection of the shroud welds (H-3, H-4, H-5, and H-7) was completed (approximately 90 percent volumetric coverage) utilizing an augmented ultrasonic phased array technique with no indication of service induced flaws. Future Core Shroud inspections will be performed in accordance with the BWRVIP guidelines in BWRVIP-07 and BWRVIP-76. Core shroud support inspections will follow BWRVIP-038 and BWRVIP-104 guidelines utilizing approved techniques. Evaluation of anomalies shall be in accordance with the BWR Core Shroud Evaluation Reports (BWRVIP-01 and GENE-523-A53-0494). Additional references include SIL No. 572, Rev. 1, RICSIL No. 054, Rev. 1, RICSIL No. 068, RICSIL No. 077, Information Notices 93-079 and 94-042, and Generic Letter (GL) 94-03. GL 94-03 required advanced notification to the NRC of the proposed plan for Core Shroud inspection, evaluation and/or repair. Additional detail is provided in PEP16, Appendix I.

#### NOTE 20

Additional augmented examinations were performed during RF04 and changes were made to the inspection schedule for selected nozzle welds following the Turbine Generator event and subsequent RPV chemistry transient for detection of IGSCC initiation.

#### NOTE 21

The new containment inspection requirements of ASME Section XI 1992 Edition, 1992 Addenda, in effect for the Second Ten-year inspection interval changed the way containment system piping (between the isolation valves) are classified for ISI. IWE-1220(d) specifies that containment system piping is exempt from IWE requirements; however, it shall be examined in accordance with the appropriate classification specified in the construction Design Specifications. This varies from the assumptions made during the first interval, when no IWE requirements were imposed. Relief Request RR-A26 documents Detroit Edison's proposed alternative examination requirements.

## NOTE 22

Inspections in addition to those listed for Item Nos. B13.10, B13.20, B13.30, and B13.40 will be scheduled and performed as detailed in PEP16. Augmented inspection requirements for selected components and welds are detailed in PEP16 Appendices, including the implementation of various BWRVIP inspection recommendations.

**INSERVICE INSPECTION NDE PROGRAM**

**TABLE A**

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification		Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
						1	2	3	
B-A									
B1.11	Circumferential Shell Weld								
1-313	UT	All B-A Welds	5360-5	RR-A25	N/A	N/A	N/A	Examined only at intersecting long seams	
4-308A	UT	All B-A Welds	5360-5	RR-A25	N/A	N/A	N/A	Examined only at intersecting long seams	
4-308B	UT	All B-A Welds	5360-5	RR-A25	N/A	N/A	N/A	Examined only at intersecting long seams	
9-307	UT	All B-A Welds	5360-5	RR-A25	N/A	N/A	N/A	Examined only at intersecting long seams	
B1.12	Longitudinal Shell Weld								
1-308A	UT	All B-A Welds	5360-5		08C			Note 14 Applies to all Category B-A Welds	
1-308B	UT	All B-A Welds	5360-5		08C				
1-308C	UT	All B-A Welds	5360-5				11C		
1-308D	UT	All B-A Welds	5360-5				11C		
15-308A	UT	All B-A Welds	5360-5			10C			
15-308B	UT	All B-A Welds	5360-5			09C 10CP		CARD 03-16383, RF10 exam to size indication No. 124 only	
15-308C	UT	All B-A Welds	5360-5		08C				
15-308D	UT	All B-A Welds	5360-5				12S		
2-307A	UT	All B-A Welds	5360-5		08C				
2-307B	UT	All B-A Welds	5360-5			10C			
2-307C	UT	All B-A Welds	5360-5			09C			
2-308A	UT	All B-A Welds	5360-5			10C			
2-308B	UT	All B-A Welds	5360-5			09C			
2-308C	UT	All B-A Welds	5360-5				12S		
B1.21	Circumferential Head Weld								
4-319	UT	All B-A Welds	5360-5		08CP	09C		08 - 2-319C to 2-319E 40% 9 - 2-319E to 2-319C 60%	
5-306	UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld	
5-319	UT	All B-A Welds	5360-5				11C		



FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification		Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
						1	2	3	
<b>B-A</b>									
<b>B1.21</b>	<b>Circumferential Head Weld</b>								
6-306		UT	All B-A Welds	5360-5		08CP	10CP		One sided exam 180-360 Deg, RF08, 0-180 Deg, RF10
<b>B1.22</b>	<b>Meridional Head Weld</b>								
1-306A		UT	All B-A Welds	5360-5		08C			
1-306B		UT	All B-A Welds	5360-5			10C		
1-306C		UT	All B-A Welds	5360-5			10C		
1-306D		UT	All B-A Welds	5360-5		08C			
1-306E		UT	All B-A Welds	5360-5		08C			
1-306F		UT	All B-A Welds	5360-5				12S	
1-306G		UT	All B-A Welds	5360-5		08C			
1-306H		UT	All B-A Welds	5360-5				11C	
1-306J		UT	All B-A Welds	5360-5			09C		
1-306K		UT	All B-A Welds	5360-5		08C			
1-319A		UT	All B-A Welds	5360-5	RR-A1			12S	
1-319B		UT	All B-A Welds	5360-5		08C			
1-319C		UT	All B-A Welds	5360-5	RR-A1			12S	
1-319D		UT	All B-A Welds	5360-5			09C		
1-319E		UT	All B-A Welds	5360-5	RR-A1		10C		
1-319F		UT	All B-A Welds	5360-5			10C		
1-319G		UT	All B-A Welds	5360-5	RR-A1			12S	
1-319H		UT	All B-A Welds	5360-5		08C			
2-306A		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306B		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306C		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306D		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306E		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306F		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld
2-306G		UT	All B-A Welds	5360-5	RR-A1				Inaccessible Weld

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-A								
B1.22	Meridional Head Weld							
2-319A	UT	All B-A Welds	5360-5		08C			
2-319B	UT	All B-A Welds	5360-5		08C			
2-319C	UT	All B-A Welds	5360-5		08C			
2-319D	UT	All B-A Welds	5360-5				11C	
2-319E	UT	All B-A Welds	5360-5				11C	
B1.30	Shell to Flange Weld							
13-308 (from flange)	UT	All B-A Welds	5360-5	RR-A1	08CP		12SP	0-180 Deg, RF-08; 180- 0 Deg, RF-12
13-308 (from shell)	UT	All B-A Welds	5360-5	RR-A1	08CP		11C	~120 Deg, RF-08 ; Remainder at RF-12
B1.40	Head to Flange Weld							
3-319	UT/MT	All B-A Welds	5360-5		08CP	10CP	12SP	1/3 of weld each scheduled Inspection Period
B-D								
B3.100	RPV Nozzle Inside Radius Section							
13-314A IRS	VT	All BD-IRS	5361-5	RR-A32	08C			
13-314B IRS	VT	All BD-IRS	5361-5	RR-A32	08C			
13-314C IRS	VT	All BD-IRS	5361-5	RR-A32		10C		
13-314D IRS	VT	All BD-IRS	5361-5	RR-A32		09C		
13-314E IRS	VT	All BD-IRS	5361-5	RR-A32		09C		
13-314F IRS	VT	All BD-IRS	5361-5	RR-A32		09C		
13-314G IRS	VT	All BD-IRS	5361-5	RR-A32		09C		
13-314H IRS	VT	All BD-IRS	5361-5	RR-A32			12S	
13-314J IRS	VT	All BD-IRS	5361-5	RR-A32			12S	
13-314K IRS	VT	All BD-IRS	5361-5	RR-A32		09C		
14-316A IRS	VT	All BD-IRS	5361-5	RR-A32			12S	
14-316B IRS	VT	All BD-IRS	5361-5	RR-A32	08C			
15-315 IRS	VT	All BD-IRS	5361-5	RR-A31	08C			
19-314A IRS	VT	All BD Nozzles	5361-5	RR-A32		10C		
19-314B IRS	VT	All BD Nozzles	5361-5	RR-A32	08C			
2-318 IRS	VT	All BD Nozzles	5361-5	RR-A31		10C		

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-D								
B3.100	RPV Nozzle Inside Radius Section							
4-316A IBR	UT	A	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316A IRS	UT	All BD-IRS	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316B IBR	UT	A	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316B IRS	UT	All BD-IRS	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316C IBR	UT	A	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-316C IRS	UT	All BD-IRS	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-316D IBR	UT	A	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316D IRS	UT	All BD-IRS	5361-5		08CA			NUREG-0619/GE-NE-523-A71-594
4-316E IBR	UT	A	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-316E IRS	UT	All BD-IRS	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-316F IBR	UT	A	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-316F IRS	UT	All BD-IRS	5361-5		07CA			NUREG-0619/GE-NE-523-A71-594
4-318A IRS	VT	All BD Nozzles	5361-5	RR-A31			11C	
4-318B IRS	VT	All BD Nozzles	5361-5	RR-A31			11C	
5-314A IRS	VT	All BD-IRS	5361-5	RR-A31	08C			
5-314B IRS	VT	All BD-IRS	5361-5	RR-A31			12S	
8-316A IRS	VT	All BD-IRS	5361-5	RR-A31	08C			
8-316B IRS	VT	All BD-IRS	5361-5	RR-A31	08C			
8-316C IRS	VT	All BD-IRS	5361-5	RR-A31			12S	
8-316D IRS	VT	All BD-IRS	5361-5	RR-A31			12S	
B3.90	RPV Nozzle to Vessel Weld							
13-314A	UT	All B-D Nozzles	5361-5	RR-A6	08C			
13-314B	UT	All B-D Nozzles	5361-5	RR-A6	08C			
13-314C	UT	All B-D Nozzles	5361-5	RR-A6		10C		
13-314D	UT	All B-D Nozzles	5361-5	RR-A6	08C			
13-314E	UT	All B-D Nozzles	5361-5	RR-A6		09C		
13-314F	UT	All B-D Nozzles	5361-5	RR-A6		09C		
13-314G	UT	All B-D Nozzles	5361-5	RR-A6	08C			

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-D								
B3.90	RPV Nozzle to Vessel Weld							
13-314H	UT	All B-D Nozzles	5361-5	RR-A6			12S	
13-314J	UT	All B-D Nozzles	5361-5	RR-A6			12S	
13-314K	UT	All B-D Nozzles	5361-5	RR-A6	08C			
14-316A	UT	All B-D Nozzles	5361-5	RR-A6		10C		
14-316B	UT	All B-D Nozzles	5361-5	RR-A6	08C			
15-315	UT	All B-D Nozzles	5361-5	RR-A6		09C		
19-314A	UT	All B-D Nozzles	5361-5	RR-A6		10C		
19-314B	UT	All B-D Nozzles	5361-5	RR-A6	08C			
2-318	UT	All B-D Nozzles	5361-5	RR-A6		10C		
4-316A	UT	All B-D Nozzles	5361-5	RR-A6	08C			
4-316B	UT	All B-D Nozzles	5361-5	RR-A6	08C			
4-316C	UT	All B-D Nozzles	5361-5	RR-A6		09C		
4-316D	UT	All B-D Nozzles	5361-5	RR-A6	08C			
4-316E	UT	All B-D Nozzles	5361-5	RR-A6			12S	
4-316F	UT	All B-D Nozzles	5361-5	RR-A6			12S	
4-318A	UT	All B-D Nozzles	5361-5	RR-A6			11C	
4-318B	UT	All B-D Nozzles	5361-5	RR-A6			11C	
5-314A	UT	All B-D Nozzles	5361-5	RR-A6	08C			
5-314B	UT	All B-D Nozzles	5361-5	RR-A6			12S	
8-316A	UT	All B-D Nozzles	5361-5	RR-A6	08C			Note 14 Applies to all Category B-D Welds
8-316B	UT	All B-D Nozzles	5361-5	RR-A6	08C			
8-316C	UT	All B-D Nozzles	5361-5	RR-A6			12S	
8-316D	UT	All B-D Nozzles	5361-5	RR-A6			12S	
B-E								
B4.11	Partial Penetration Vessel Nozzles							
17-315	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
B-E								
B4.11	Partial Penetration Vessel Nozzles							
7-315	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	Each Refuel Outage - Note 4 applies to all B-E Items
B4.12	Partial Penetration CRD Nozzles							
1-310-X_-Y_	VT-2		5363-5		07C/ 08C	09C/ 10C	11C/ 12S	25% Nozzles External Surfaces - Note 4
CRDH-Y_-X_	VT-2		5363-5		07C/ 08C	09C/ 10C	11C/ 12S	
B4.13	Partial Penetration Instrumentation Nozzles							
2-315A	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	
2-315B	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	
2-315C	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	
2-315D	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	
2-315F	VT-2		5361-5		07C/ 08C	09C/ 10C	11C/ 12S	
IIH-X__-Y__ (55)	VT-2		5363-5		07C/ 08C	09C/ 10C	11C 12S	
B-F								
B5.10	Dissimilar Metal RPV Nozzle to Safe End Weld 4" NPS and Larger							
101-304E	UT	A, RI (IGSCC)	5358-5	RR-A30		10C		Notes 2 & 8 Cat. B
102-304A	UT	A (IGSCC)	5361-5		07C		12S	Notes 2 & 8 Cat. B
2-303G	UT	A, RI (IGSCC)	5356-5	RR-A30		09C		Notes 2 & 8 Cat. B
2-303H	UT	A, RI (IGSCC)	5356-5	RR-A30	07C		12S	Notes 2 & 8 Cat. B
4-303A	UT	A, RI (IGSCC)	5357-5	RR-A30	07C		12S	Notes 2 & 8 Cat. B
N5A	UT	A, (IGSCC, CC)	3053-5			10C		Notes 2 & 8 Cat. B
N5B	UT	A, RI (IGSCC, CC)	3052-5	RR-A30	08C			Notes 2 & 8 Cat. B
N-9	UT	A, RI (IGSCC)	5361-5	RR-A30		09C		Notes 2 & 8 Cat. B

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
B-F								
B5.130	Dissimilar Metal Piping Butt Weld 4" NPS and Larger							
SW-E11-2298-6WC	UT	A, RI (IGSCC)	2298-5	RR-A30	08C			Note 1 & 2, Category B
SW-E11-2327-6WC	UT	A (IGSCC)	2327-5				11C	Notes 1 & 2, Category B
SW-E21-3052-4WOX	UT	A, RI (IGSCC)	3052-5	RR-A30	08C			Notes 1 , 2 & 8 Category B (IGSCC)
SW-E21-3053-4WOX	UT	A (IGSCC)	3053-5			10C		Notes 1 , 2 & 8 Category B (IGSCC)
B5.20	Dissimilar Metal RPV Nozzle to Safe End Weld Less Than 4" NPS							
5-315	PT	A	R1-91		07C			Note 18
5-315	UT	A			07C			Note 18
B-G-1								
B6.10	RPV Closure Head Nuts Greater Than 2"							
326-02, 1 through 68	VT	>2 dia."	5362-5		08CP	09CP	11CP	1/3 Each Period, Code Case N-627
B6.180	Pump Studs Greater Than 2"							
RRC Pump A, Studs 1 through 16	UT	>2 dia."	5365-5		08C			
RRC Pump B, Studs 1 through 16	UT	>2 dia."	5365-5				11C	
B6.190	Pump Flange Surface, When Disassembled							
RRC Pump A, Flange	VT-1	>2 dia."	5365-5					Perform if disassembled
RRC Pump B, Flange	VT-1	>2 dia."	5365-5					Perform if disassembled
B6.20	RPV Closure Studs Greater Than 2", In-place							
326-01, 1 through 68	UT	>2 dia."	5362-5		08CP	10CP	11CP	1/3 Each Period
B6.200	Pump Nuts, Bushings, and Washers							
RRC Pump A Nuts, Bushings & Washers Set 1 - 16	VT-1	>2 dia."	5365-5		08C			
RRC Pump B Nuts, Bushings & Washers Set 1 - 16	VT-1	>2 dia."	5365-5				11C	
B6.30	RPV Closure Studs Greater Than 2", When Removed							
326-01, 1 through 68	MT	>2 dia."	5362-5		08C			48-51 Removed for refueling, RG 1.65 applies -- use ASME Section III Acceptance Criteria
B6.40	RPV, Threads in Flange							
1 through 68	UT	>2 dia."	5362-5		08CP	09CP	11CP	1/3 Each Period

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-G-1								
B6.50	RPV Closure Washers and Bushings							
326-03, Washers 1 through 68	VT-1	>2 dia."	5362-5		08CP	09CP	11CP	1/3 Each Period
Bushings 1 through 68	VT-1	>2 dia."	5362-5				12S	Only required when studs are removed (48-51 removed with refueling shute)
B-G-2								
B7.10	RPV Bolts, Studs, and Nuts 2" and Less							
Instrumentation Nozzle	VT-1	< 2 dia."	5361-5				11C	
Spare Flange FBC-01 (180 Deg)	VT-1	< 2 dia."	5361-5				11C	
Spare Flange FBC-02 (0 Deg)	VT-1	< 2 dia."	5361-5				11C	
B7.50	Piping Bolts, Studs, and Nuts 2" and Less							
FBC-E41-2297-01	VT-1	< 2 dia."	2297-5			09C		
FBC-E51-2192-01	VT-1	< 2 dia."	2192-5		08C			
B7.60	Pump Bolts, Studs, and Nuts 2" and Less							
RRC Pump A Seal Bolting	VT-1	< 2 dia."	5365-5			10C		
RRC Pump B Seal Bolting	VT-1	< 2 dia."	5365-5				12S	
B7.70	Valve Bolts, Studs, and Nuts 2" and Less							
B21-F010A-VBB	VT-1	< 2 dia."	3537-5				12S	
B21-F010B-VBB	VT-1	< 2 dia."	3536-5			09C		
B21-F011A-VBB	VT-1	< 2 dia."	3537-5		08C			
B21-F011B-VBB	VT-1	< 2 dia."	3536-5			09C		
B21-F013A-VBB	VT-1	< 2 dia."	5355-5		07C			
B21-F013B-VBB	VT-1	< 2 dia."	5354-5		08C			
B21-F013C-VBB	VT-1	< 2 dia."	5353-5			10C		
B21-F013D-VBB	VT-1	< 2 dia."	5353-5		07C			
B21-F013E-VBB	VT-1	< 2 dia."	5354-5			10C		
B21-F013F-VBB	VT-1	< 2 dia."	5353-5			10C		
B21-F013G-VBB	VT-1	< 2 dia."	5353-5		08C			
B21-F013H-VBB	VT-1	< 2 dia."	5354-5				12S	
B21-F013J-VBB	VT-1	< 2 dia."	5354-5		07C			

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-G-2								
B7.70	Valve Bolts, Studs, and Nuts 2" and Less							
B21-F013K-VBB	VT-1	< 2 dia."	5353-5		08C			
B21-F013L-VBB	VT-1	< 2 dia."	5352-5		08C			
B21-F013M-VBB	VT-1	< 2 dia."	5352-5		07C			
B21-F013N-VBB	VT-1	< 2 dia."	5352-5				11C	
B21-F013P-VBB	VT-1	< 2 dia."	5355-5				12S	
B21-F013R-VBB	VT-1	< 2 dia."	5354-5				12S	
B21-F022A-VBB	VT-1	< 2 dia."	5352-5				11C	
B21-F022B-VBB	VT-1	< 2 dia."	5353-5				12S	
B21-F022C-VBB	VT-1	< 2 dia."	5354-5			10C		
B21-F022D-VBB	VT-1	< 2 dia."	5355-5				12S	
B21-F028A-VBB	VT-1	< 2 dia."	5352-5			10C		
B21-F028B-VBB	VT-1	< 2 dia."	5353-5		08C			
B21-F028C-VBB	VT-1	< 2 dia."	5354-5				11C	
B21-F028D-VBB	VT-1	< 2 dia."	5355-5		08C			
B21-F032A-VBB	VT-1	< 2 dia."	3537-5			09C		
B21-F032B-VBB	VT-1	< 2 dia."	3536-5				11C	
B21-F076A-VBB	VT-1	< 2 dia."	3537-5				11C	
B21-F076B-VBB	VT-1	< 2 dia."	3536-5				11C	
B31-F023A-VBB	VT-1	< 2 dia."	5357-5			09C		
B31-F023B-VBB	VT-1	< 2 dia."	5359-5				11C	
B31-F031A-VBB	VT-1	< 2 dia."	5357-5			09C		
B31-F031B-VBB	VT-1	< 2 dia."	5359-5				11C	
E11-F008-VBB	VT-1	< 2 dia."	2299-5				12S	
E11-F009-VBB	VT-1	< 2 dia."	2299-5			09C		
E11-F015A-VBB	VT-1	< 2 dia."	2298-5		07C			
E11-F015B-VBB	VT-1	< 2 dia."	2327-5				11C	
E11-F050A-VBB	VT-1	< 2 dia."	2298-5		07C			
E11-F050B-VBB	VT-1	< 2 dia."	2327-5		07C			



FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-G-2								
B7.70 Valve Bolts, Studs, and Nuts 2" and Less								
E11-F060A-VBB	VT-1	< 2 dia."	2298-5				12S	
E11-F060B-VBB	VT-1	< 2 dia."	2327-5			10C		
E11-F067-VBB	VT-1	< 2 dia."	2299-5			09C		
E11-F608-VBB	VT-1	< 2 dia."	2299-5				11C	
E21-F005A-VBB	VT-1	< 2 dia."	3052-5			09C		
E21-F005B-VBB	VT-1	< 2 dia."	3053-5			09C		
E21-F006A-VBB	VT-1	< 2 dia."	3052-5		08C			
E21-F006B-VBB	VT-1	< 2 dia."	3053-5		07C			
E21-F007A-VBB	VT-1	< 2 dia."	3052-5				12S	
E21-F007B-VBB	VT-1	< 2 dia."	3053-5				12S	
E41-F002-VBB	VT-1	< 2 dia."	2297-5				11C	
E41-F003-VBB	VT-1	< 2 dia."	2297-5		08C			
E41-F006-VBB	VT-1	< 2 dia."	3537-5			10C		
E51-F007-VBB	VT-1	< 2 dia."	2192-5			09C		
E51-F008-VBB	VT-1	< 2 dia."	2192-5		07C			
E51-F013-VBB	VT-1	< 2 dia."	3536-5				11C	
FBC-B21-5352-01L	VT-1	< 2 dia."	5352-5		08C			
FBC-B21-5352-01M	VT-1	< 2 dia."	5352-5		07C			
FBC-B21-5352-01N	VT-1	< 2 dia."	5352-5				11C	
FBC-B21-5353-01C	VT-1	< 2 dia."	5353-5			10C		
FBC-B21-5353-01D	VT-1	< 2 dia."	5353-5		07C			
FBC-B21-5353-01F	VT-1	< 2 dia."	5353-5			10C		
FBC-B21-5353-01G	VT-1	< 2 dia."	5353-5		08C			
FBC-B21-5353-01K	VT-1	< 2 dia."	5353-5		08C			
FBC-B21-5354-01B	VT-1	< 2 dia."	5354-5		08C			
FBC-B21-5354-01E	VT-1	< 2 dia."	5354-5			10C		
FBC-B21-5354-01H	VT-1	< 2 dia."	5354-5				12S	
FBC-B21-5354-01J	VT-1	< 2 dia."	5354-5		07C			

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
B-G-2								
B7.70	Valve Bolts, Studs, and Nuts 2" and Less							
FBC-B21-5354-01R	VT-1	< 2 dia."	5354-5				12S	
FBC-B21-5355-01A	VT-1	< 2 dia."	5355-5		07C			
FBC-B21-5355-01P	VT-1	< 2 dia."	5355-5				12S	
G33-F001-VBB	VT-1	< 2 dia."	3096-5		08C			
G33-F004-VBB	VT-1	< 2 dia."	3096-5			09C		
G33-F100-VBB	VT-1	< 2 dia."	5351-5			10C		
G33-F101-VBB	VT-1	< 2 dia."	3096-5				12S	
G33-F102-VBB	VT-1	< 2 dia."	5351-5				12S	
G33-F106-VBB	VT-1	< 2 dia."	5351-5				11C	
G33-F120-VBB	VT-1	< 2 dia."	3536-5		08C			
G33-F121-VBB	VT-1	< 2 dia."	3536-5		07C			
G33-F220-VBB	VT-1	< 2 dia."	3536-5			10C		
B7.80	CRD Bolts, Studs, and Nuts 2" and Less							
185 sets of Bolts, Studs and Nuts	Visual VT-1	< 2 dia."			08CP	09CP/ 10CP		When Disassembled (24 sets, 08), (23 sets, 09), (23 sets, 10)
B-H								
B8.10	RPV Integral Attachment Weld							
10-324A	MT	B-H Weld	5360-5		08C			Code Case N-509
3-306/4-309	MT	B-H Weld	5360-5		08CP			10% of Weld length
3-306/4-309	UT	B-H Weld	5360-5		08CP			10% of Weld length
8-319A	MT	B-H Weld	5360-5				12S	Supplemental exam for weld 1-391A, RR-A1
8-319B	MT	B-H Weld	5360-5				12S	Supplemental exam for weld 1-391C, RR-A1
8-319C	MT	B-H Weld	5360-5			10C		Supplemental exam for weld 1-391E, RR-A1
8-319D	MT	B-H Weld	5360-5				12S	Supplemental exam for weld 1-391G, RR-A1
B-J								
B9.11	Circumferential Piping Weld 4" NPS or Larger							
3-316A	UT	RI (TASCS, CC)	3537-5	RR-A30	08C			

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-J								
B9.11	Circumferential Piping Weld 4" NPS or Larger							
3-316D	UT	RI (TASCS, CC)	3536-5	RR-A30			12S	
3-316E	UT	RI (TASCS, CC)	3536-5	RR-A30			12S	
7-316A	UT	RI	5352-5	RR-A30	08C			
FW-E11-2298-6W0	UT	A, (IGSCC)	2298-5		08C			Note 2, Category B
FW-E11-2299-2WF3	UT	RI	2299-5	RR-A30		09C		
FW-E11-2327-0W1	UT	RI	2327-5	RR-A30	08C			
FW-E11-2327-0W6	UT	RI	2327-5	RR-A30			11C	
FW-E11-2327-6W0	PT	A (IGSCC)	2327-5				11CL	Note 2 Category B
FW-E21-3052-4WF1	UT	RI	3052-5	RR-A30			12S	
FW-E41-2297-0W4	MT	RI	2297-5	RR-A30	08C			
FW-E41-2297-2W3	UT	RI	2297-5	RR-A30	08C			
FW-E51-2192-1W2	UT	RI	2192-5	RR-A30		09C		
FW-E51-2192-2W3	UT	RI	2192-5	RR-A30		09C		
FW-G33-3096-10WF3	UT	A, RI (IGSCC)	5351-5	RR-A30	08C			
FW-G33-3096-6WF5	UT	RI	3096-5	RR-A30			11C	
FW-G33-3096-8W11	UT	RI	5351-5	RR-A30		10C		
FW-G33-3096-8W9	UT	RI	5351-5	RR-A30		10C		
FW-G33-3096-9WF1	UT	RI	5351-5	RR-A30		10C		
FW-N21-2336-13W14	UT	RI	3537-5	RR-A30		10C		
FW-N21-2336-14WF1	UT	RI	3537-5	RR-A30		10C		
FW-N21-2336-15W0	UT	RI (TASCS)	3537-5	RR-A30	08C			
FW-N21-2336-16W19	UT	RI	3537-5	RR-A30			11C	
FW-N21-2336-3W4	UT	RI	3536-5	RR-A30		09C		RCIC Selection
FW-PS-2-A6	UT	RI	5352-5	RR-A30			12S	
FW-PS-2-C3	UT	RI	5354-5	RR-A30		10C		
FW-RD-2-A11	UT	A (IGSCC)	5356-5	RR-A30			11CL	Note 2, Category B (CRC)
FW-RD-2-A16	UT	RI, A (IGSCC)	5356-5	RR-A30		09C		Note 2, Category B (CRC)
FW-RD-2-A17	UT	RI, A (IGSCC)	5356-5				12S	Note 2, Category B(CRC)

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-J								
B9.11	Circumferential Piping Weld 4" NPS or Larger							
FW-RD-2-A1-W1	UT	RI, A (IGSCC)	5357-5	RR-A30			12S	Note No. 2, Cat. B
FW-RD-2-A9	UT	RI, A (IGSCC)	5357-5		08CA			Note 2, Category B
FW-RD-2-B19	UT	A, (IGSCC)	5358-5			10C		Note 2, Category B (CRC)
FW-RD-2-B1-W1	UT	RI, A(IGSCC)	5359-5	RR-A30			11C	Note 2, Category B UFSAR 5.2.3.2
FW-RS-2-A1	UT	A (IGSCC)	5357-5				12SA	Note No. 2, Cat. B
N4A	UT	RI (TASCS, CC)	3537-5	RR-A30	08C			
N4D	UT	RI (TASCS,CC)	3536-5	RR-A30			12S	
N4E	UT	RI (TASCS, CC)	3536-5	RR-A30			12S	
SW-E21-3053-3WN	UT	RI	3053-5	RR-A30		09C		
SW-E21-3053-3WP	UT	RI	3053-5	RR-A30		09C		
SW-G33-3096-5WD	UT	RI	3096-5	RR-A30			11C	
SW-G33-3096-5WH	UT	RI	3096-5	RR-A30			11C	
SW-N21-2335-1WD	UT	RI	3536-5	RR-A30		09C		RCIC Selection
SW-N21-2336-13WC	UT	RI	3537-5	RR-A30		10C		
SW-N21-2336-13WE	UT	RI	3537-5	RR-A30		10C		
SW-N21-2336-15WP	UT	RI (TASCS)	3537-5	RR-A30	08C			
SW-N21-2336-1WL	UT	RI (TASCS)	3536-5	RR-A30		09C		
SW-N21-2336-1WU	UT	RI	3536-5	RR-A30		09C		RCIC Selection
SW-N21-2336-3WC	UT	RI	3536-5	RR-A30		09C		RCIC Selection
SW-PS-2-A1-A	UT	RI	5352-5	RR-A30	08C			
SW-PS-2-A1-B	UT	RI	5352-5	RR-A30	08C			
SW-PS-2-A4-B	UT	RI	5352-5	RR-A30			12S	
SW-PS-2-C3-A	UT	RI	5354-5	RR-A30		10C		
SW-PS-2-C3-C	UT	RI	5354-5	RR-A30		10C		
SW-PS-2-C3-D	UT	RI	5354-5	RR-A30		10C		
SW-PS-2-C3-J	UT	RI	5354-5	RR-A30	08C			
SW-PS-2-C3-K	UT	RI	5354-5	RR-A30	08C			
SW-RD-2-A3-W7	UT	A (IGSCC)	5356-5	RR-A30			11CL	Note 2, Category B

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-J								
B9.11	Circumferential Piping Weld 4" NPS or Larger							
SW-RD-2-A4-W2	UT	RI	5356-5	RR-A30			11C	Note 2, Category A
SW-RD-2-B4-W2	UT	RI, A	5358-5	RR-A30			12S	Note 2, Category A
SW-RD-2-B8-W1	UT	RI, A	5358-5	RR-A30	08C			Note 2, Category A
SW-RD-2-B8-W2	UT	RI, A	5358-5	RR-A30	08C			Note 2, Category A
SW-RS-2A1-W1	UT	RI, A (IGSCC)	5357-5	RR-A30			12S	Note No. 2, Cat. B
SW-RS-2-A2-W1	UT	A (IGSCC)	5357-5			09C		Note No. 2, Cat. B
SW-RS-2-B1-W1	UT	RI, A (IGSCC)	5359-5	RR-A30			11C	Note 2, Category B
B-K-1								
B10.10	Piping Integral Attachment Weld							
SW-N21-2336-20WB	MT	10% of IWF Selections	3537-5			10C		ISI Eval. 99-055; Code Case N-509
SW-N21-2336-20WC	MT	10% of IWF Selections	3537-5			10C		ISI Eval. 99-055; Code Case N-509
SW-N21-2336-20WD	MT	10% of IWF Selections	3537-5			10C		ISI Eval. 99-055; Code Case N-509
SW-N21-2336-20WE	MT	10% of IWF Selections	3537-5			10C		ISI Eval. 99-055; Code Case N-509
SW-PS-2-A2-AA1	MT	10% of IWF Selections	5352-5		07C			ISI Eval. 99-055; Code Case N-509
SW-PS-2-A2-AA2	MT	10% of IWF Selections	5352-5		07C			ISI Eval. 99-055; Code Case N-509
SW-PS-2-A2-AA3	MT	10% of IWF Selections	5352-5		07C			ISI Eval. 99-055; Code Case N-509
SW-PS-2-A2-AA4	MT	10% of IWF Selections	5352-5		07C			ISI Eval. 99-055; Code Case N-509
B10.20	Pump Integral Attachment Weld							
SW-B31-5365-Pump A-WA	PT	10% of IWF Selections	5365-5				12S	ISI Eval. 99-055; Code Case N-509

**B-L-2**

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification		Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
						1	2	3	
B-L-2									
B12.20 Pump Casing									
RRC Pump A		VT-3	Visual VT-3	5365-5					Only if Disassembled, Note 10
RRC Pump B		VT-3	Visual VT-3	5365-5					Only if Disassembled, Note 10
B-M-2									
B12.50 Valve Body									
B21F010A		VT-3	>4 NPS"	3537-5		08C	09C	11C	Only if Disassembled
B21F010B		VT-3	>4 NPS"	3536-5		07C	09C/ 10C		Only if Disassembled
B21F011A		VT-3	>4 NPS"	3537-5					Only if Disassembled
B21F011B		VT-3	>4 NPS"	3536-5					Only if Disassembled
B21F013A		VT-3	>4 NPS"	5355-5			10C		SRV's (B21F013A-R) are inspected, rebuilt, and functionally tested on a rotating basis. A portion of pilots and bodies are rotated each outage. Details of VT-3 inspections completed are contained in the Purchase Order records for each outage.
B21F013B		VT-3	>4 NPS"	5354-5			10C		Only if Disassembled
B21F013C		VT-3	>4 NPS"	5353-5		08C			Only if Disassembled
B21F013D		VT-3	>4 NPS"	5353-5				11C	Only if Disassembled
B21F013E		VT-3	>4 NPS"	5354-5			10C		Only if Disassembled
B21F013F		VT-3	>4 NPS"	5353-5		08C			Only if Disassembled
B21F013G		VT-3	>4 NPS"	5353-5			09C		Only if Disassembled
B21F013H		VT-3	>4 NPS"	5354-5			09C		Only if Disassembled
B21F013J		VT-3	>4 NPS"	5354-5				11C	Only if Disassembled
B21F013K		VT-3	>4 NPS"	5353-5		08C			Only if Disassembled
B21F013L		VT-3	>4 NPS"	5352-5			09C		Only if Disassembled
B21F013M		VT-3	>4 NPS"	5352-5				11C	Only if Disassembled
B21F013N		VT-3	>4 NPS"	5352-5		08C			Only if Disassembled
B21F013P		VT-3	>4 NPS"	5355-5			09C		Only if Disassembled
B21F013R		VT-3	>4 NPS"	5354-5			09C		Only if Disassembled

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification		Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
						1	2	3	
<b>B-M-2</b>									
B12.50	Valve Body								
B21F022A		VT-3	>4 NPS"	5352-5					Only if Disassembled
B21F022B		VT-3	>4 NPS"	5353-5					Only if Disassembled
B21F022C		VT-3	>4 NPS"	5354-5					Only if Disassembled
B21F022D		VT-3	>4 NPS"	5355-5		07C			Only if Disassembled
B21F028A		VT-3	>4 NPS"	5352-5					Only if Disassembled
B21F028B		VT-3	>4 NPS"	5353-5		07C			Only if Disassembled
B21F028C		VT-3	>4 NPS"	5354-5		07C			Only if Disassembled
B21F028D		VT-3	>4 NPS"	5355-5					Only if Disassembled
B21F032A		VT-3	>4 NPS"	3537-5		07C			Only if Disassembled
B21F032B		VT-3	>4 NPS"	3536-5		07C			Only if Disassembled
B21F076A		VT-3	>4 NPS"	3537-5		07C		11C	Only if Disassembled
B21F076B		VT-3	>4 NPS"	3536-5		07C	09C		Only if Disassembled
B31F023A		VT-3	>4 NPS"	5357-5					Only if Disassembled
B31F023B		VT-3	>4 NPS"	5359-5					Only if Disassembled
B31F031A		VT-3	>4 NPS"	5357-5				11C	Only if Disassembled
B31F031B		VT-3	>4 NPS"	5359-5					Only if Disassembled
E11F008		VT-3	>4 NPS"	2299-5					Only if Disassembled
E11F009		VT-3	>4 NPS"	2299-5					Only if Disassembled
E11F015A		VT-3	>4 NPS"	2298-5		07C			Only if Disassembled
E11F015B		VT-3	>4 NPS"	2327-5					Only if Disassembled
E11F050A		VT-3	>4 NPS"	2298-5		07C	09C		Only if Disassembled
E11F050B		VT-3	>4 NPS"	2327-5		07C	09C		Only if Disassembled
E11F060A		VT-3	>4 NPS"	2298-5					Only if Disassembled
E11F060B		VT-3	>4 NPS"	2327-5					Only if Disassembled
E11F067		VT-3	>4 NPS"	2299-5					Only if Disassembled
E11F608		VT-3	>4 NPS"	2299-5					Only if Disassembled
E21F005A		VT-3	>4 NPS"	3052-5					Only if Disassembled
E21F005B		VT-3	>4 NPS"	3053-5					Only if Disassembled

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
B-M-2								
B12.50	Valve Body							
E21F006A	VT-3	>4 NPS"	3052-5		08C			Only if Disassembled
E21F006B	VT-3	>4 NPS"	3053-5		07C	09C		Only if Disassembled
E21F007A	VT-3	>4 NPS"	3052-5					Only if Disassembled
E21F007B	VT-3	>4 NPS"	3053-5					Only if Disassembled
E41F002	VT-3	>4 NPS"	2297-5					Only if Disassembled
E41F003	VT-3	>4 NPS"	2297-5					Only if Disassembled
E41F006	VT-3	>4 NPS"	5352-5			10C		Only if Disassembled
E51F013	VT-3	>4 NPS"	3536-5					Only if Disassembled
G33F001	VT-3	>4 NPS"	3096-5					Only if Disassembled
G33F004	VT-3	>4 NPS"	3096-5					Only if Disassembled
G33F100	VT-3	>4 NPS"	5351-5					Only if Disassembled
G33F102	VT-3	>4 NPS"	5351-5					Only if Disassembled
G33F106	VT-3	>4 NPS"	5351-5					Only if Disassembled
B-N-1								
B13.10	Reactor Vessel Interior - Vessel Internals are examined using remote visual techniques. Exams listed are code required exams. More detailed techniques are utilized as per BWRVIP I&E Guidelines (Note 22).							
Access Hole Cover	VT-1	Vessel Interior, A				09C	12S	Note No. 13
CDP and SLC Line	VT-3	Vessel Interior						Only if Accessible
Control Rod Drive Housings	VT-3	Vessel Interior						Only if Accessible
Core Shroud	VT-3	Vessel Interior			07CP/ 08CP			Note No. 19
Core Shroud	VT-1	Vessel Interior, A			07CP/ 08CP			Note No. 19
Core Shroud Welds	UT	Vessel Interior, A					12S	Note No. 19
Core Spray Sparger and Interior Piping	VT-3 / VT-1	Vessel Interior, A			07C/0 8CP	09CP/ 10CP	11CP /12SP	Note No. 12
Feedwater Sparger	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	12SP	NUREG 0619 at least once every 4 Cycles
Flux Monitor Housings	VT-3	Vessel Interior						Only if Accessible



FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-N-1								
B13.10	Reactor Vessel Interior - Vessel Internals are examined using remote visual techniques. Exams listed are code required exams. More detailed techniques are utilized as per BWRVIP I&E Guidelines (Note 22).							
Guide Rod Holders / Brackets	VT-3	Vessel Interior			07CP/ 08CP	10CP	12SP	
Instrumentation Lines	VT-3	Vessel Interior, A			07CP/ 08CP	09CP/ 10CP		Note No. 7
Jet Pump Components	VT-3 / UT	Vessel Interior, A			07CP/ 08CP	09CP/ 10CP		Note No. 17
Jet Pump Hold Down Beams	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP		
Jet Pump Hold Down Beams	UT	Vessel Interior, A				09C		Note No. 3
Recirculation Inlet Nozzle	VT-3	Vessel Interior			08CP	09CP/ 10CP	12SP	
Sample Holders	VT-3	Vessel Interior			08CP	10CP	12SP	
Shroud Head	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	11CP /12SP	
Shroud Head Bolts	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	11CP /12SP	
Shroud Head Bolts	UT	Vessel Interior, A						Note No. 9
Steam Dryer Assembly / Hold Downs	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	12SP	Note No. 11
Steam Separator Assy.	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	11CP /12SP	
Top Guide	VT-3	Vessel Interior			07CP/ 08CP	09CP/ 10CP	11CP /12SP	Note No. 16

**B-N-2**

**B13.20** **RPV Interior Welded Attachments Within Beltline Region - Vessel Internals are examined using remote visual techniques. Exams listed are code required exams. More detailed techniques are utilized as per BWRVIP I&E Guidelines (Note 22).**

Jet Pump Riser Brace Arms	VT-1	Vessel Interior, A			07CP/ 08CP	09CP/ 10CP	11CP /12SP	
Surveillance Specimen Bracket	VT-1	Attachment Weld			07CP/ 08CP	10CP	12SP	

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
B-N-2								
B13.30	RPV Interior Welded Attachments Beyond Beltline Region - Vessel Internals are examined using remote visual techniques. Exams listed are code required exams. More detailed techniques are utilized as per BWRVIP I&E Guidelines (Note 22).							
Core Spray Piping Brackets	VT-3	Interior Attachment Beyond Beltline			07CP/ 08CP	09C/ 10CP		
Feedwater Sparger Brackets	VT-3	Interior Attachment Beyond Beltline			07CP/ 08CP	09CP/ 10CP		
Shroud Support Welds	EVT-1 / UT	Interior Attachment Beyond Beltline				09CP/ 10CP	11CP	Note No. 19
Steam Dryer Support Lugs	VT-3	Interior Attachment Beyond Beltline			07CP/ 08CP	10C		
B13.40	Welded Core Support Structure - Vessel Internals are examined using remote visual techniques. Exams listed are code required exams. More detailed techniques are utilized as per BWRVIP I&E Guidelines (Note 22).							
Core Support Assy. & Bolts	VT-3 / UT	A			07CP/ 08CP		12SP	BWRVIP-25
Lower Core Shroud	VT-3	Core Support, A			07CP	09CP	12SP	Note No. 19
Peripheral Fuel Support	VT-3	A			07CP/ 08CP	09CP		
B-O								
B14.10	Welds in CRD Housing							
CRDH-X02-Y27-W1	PT	10% Peripheral Housing Welds	5363-5		08C			
CRDH-X02-Y27-W2	PT	10% Peripheral Housing Welds	5363-5		08C			
CRDH-X02-Y31-W1	PT	10% Peripheral Housing Welds	5363-5			10C		
CRDH-X02-Y31-W2	PT	10% Peripheral Housing Welds	5363-5			10C		
CRDH-X02-Y35-W1	PT	10% Peripheral Housing Welds	5363-5				11C	
CRDH-X02-Y35-W2	PT	10% Peripheral Housing Welds	5363-5				11C	

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
B-O								
B14.10 Welds in CRD Housing								
CRDH-X02-Y39-W1	PT	10% Peripheral Housing Welds	5363-5				12S	
CRDH-X02-Y39-W2	PT	10% Peripheral Housing Welds	5363-5				12S	
B-P								
B15.X Class 1 Pressure Retaining Boundary (Note 15)								
B11, B21, B31, C41, E11, E21, E41, E51, G33, N21, P34	VT-2	Class1 Pressure Retaining Boundary					12S	X Includes items - B15.11, B15.51, B15.61 and B15.71. Each Interval, Code Case N-498-1
B11, B21, B31, C41, E11, E21, E41, E51, G33, N21, P34	VT-2	Class1 Pressure Retaining Boundary			07C/ 08C	09C/ 10C	11C	X Includes items - B15.10, B15.50, B15.60 and B15.70. Each Refueling Outage; Note 15
C-A								
C1.10 Shell Circumferential Weld								
SW-E11-D2-HX-11	UT	Gross Structural Discontinuity	5370-5		08C			
C1.20 Head Circumferential Weld								
SW-E11-D2-HX-05	UT	Gross Structural Discontinuity	5370-5				11C	
C-B								
C2.21 Nozzle to Shell (or Head) Weld								
SW-E11-D2-HX-01	UT	Shell - T >.5"	5370-5		08C			
SW-E11-D2-HX-01	MT	Shell - T >.5"	5370-5		08C			
SW-E11-D2-HX-10	MT	Shell - T >.5"	5370-5				11C	
SW-E11-D2-HX-10	UT	Shell - T >.5"	5370-5				11C	
C2.22 Nozzle Inside Radius Section								
SW-E11-D2-HX-01 IRS	UT	Selected Nozzle			08C			
SW-E11-D2-HX-10 IRS	UT	Selected Nozzle					11C	
C-C								
C3.10 Intregally Welded Attachment (Vessel)								

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-C								
C3.10	Integally Welded Attachment (Vessel)							
SW-E11-D2-HXS-05	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-06	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-07	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-09	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-10	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-11	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-12	MT	10%	5370-5		08C			Code Case N-509
SW-E11-D2-HXS-13	MT	10%	5370-5			09C		Code Case N-509
SW-E11-D2-HXS-14	MT	10%	5370-5			09C		Code Case N-509
SW-E11-D2-HXS-15	MT	10%	5370-5			09C		Code Case N-509
SW-E11-D2-HXS-16	MT	10%	5370-5			09C		Code Case N-509
SW-E11-D2-HXS-17	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-18	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-19	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-20	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-21	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-22	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-23	MT	10%	5370-5				11C	Code Case N-509
SW-E11-D2-HXS-24	MT	10%	5370-5				11C	Code Case N-509
C3.20	Integally Welded Attachment (Piping)							
C11-50-2113-G262A	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262B	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262C	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262D	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262E	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262F	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262G	MT	10%	5375-5				11C	Code Case N-509
C11-50-2113-G262H	MT	10%	5375-5				11C	Code Case N-509

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-C								
C3.20 Intregally Welded Attachment (Piping)								
PSFW-E21-3147-301	MT	10%	3147-5		07C			Code Case N-509
PSFW-E41-3167-IWE	MT	10%	3167-5			10C		Code Case N-509
PSFW-E41-3167-IWF	MT	10%	3167-5			10C		Code Case N-509
PSFW-E41-3167-IWG	MT	10%	3167-5			10C		Code Case N-509
PSFW-E41-3167-IWH	MT	10%	3167-5			10C		Code Case N-509
SW-E11-3151-4WE	MT	10%	3151-5				12S	Code Case N-509
SW-E11-3151-4WF	MT	10%	3151-5				12S	Code Case N-509
SW-E11-3151-4WG	MT	10%	3151-5				12S	Code Case N-509
SW-E11-3151-4WH	MT	10%	3151-5				12S	Code Case N-509
SW-E11-3151-4WJ	MT	10%	3151-5				12S	Code Case N-509
SW-E11-3151-4WK	MT	10%	3151-5				12S	Code Case N-509
C-F-1								
Augmented NRC Commitment								
FW-C41-2979-11S12	PT	A	2979-5			10C		EF2-53.873
FW-C41-2979-17S18	PT	A	2979-5				12S	EF2-53.873
FW-C41-2979-1S2	PT	A	2979-5		08C			EF2-53.873
FW-C41-2979-2S3	PT	A	2979-5		08C			EF2-53.873
FW-C41-2979-50S51	PT	A	2979-5				11C	EF2-53.873
FW-C41-2979-63S64	PT	A	2979-5			09C		EF2-53.873
FW-C41-2979-64S65	PT	A	2979-5			09C		EF2-53.873
FW-C41-2979-72S73	PT	A	2979-5		08C			EF2-53.873
FW-C41-2979-81S82	PT	A	2979-5				12S	EF2-53.873
FW-C41-2979-L	PT	A	2979-5			10C		EF2-53.873
FW-C41-2979-P	PT	A	2979-5		07C			EF2-53.873
FW-C41-3361-02W1	PT	A	3361-5		07C			EF2-53.873
FW-C41-3361-1WF22	PT	A	3361-5				12S	EF2-53.873
FW-C41-3361-1WF25	PT	A	3361-5				11C	EF2-53.873
FW-C41-5058-54S55	PT	A	5374-5			09C		EF2-53.873

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-F-1								
Augmented NRC Commitment								
FW-C41-5058-65S66	PT	A	5374-5				11C	EF2-53.873
C-F-2								
C5.51 Circumferential Weld								
FW-C11-2113-249-B	MT	R	5372-5				12S	
FW-C11-2113-249-B	UT	R	5372-5				12S	
FW-E11-3146-5WO	MT	MS	3146-5		08C			
FW-E11-3146-5WO	UT	MS	3146-5		08C			
FW-E11-3146-6W10	UT	MS	3146-5		07C			
FW-E11-3146-6W10	MT	MS	3146-5		07C			
FW-E11-3146-OW1	UT	TE	3146-5				11C	
FW-E11-3146-OW1	MT	TE	3146-5				11C	
FW-E11-3151-10W0	UT	TE	3151-5				11C	
FW-E11-3151-10W0	MT	TE	3151-5				11C	
FW-E11-3151-3WF2	UT	MS	3151-5			09C		
FW-E11-3151-3WF2	MT	MS	3151-5			09C		
FW-E11-3151-7W11	UT	MS	3151-5			10C		
FW-E11-3151-7W11	MT	MS	3151-5			10C		
FW-E11-3154-13WO	UT	TE	3154-5			09C		
FW-E11-3154-13WO	MT	TE	3154-5			09C		
FW-E11-3154-4WO	MT	TE	3154-5				12S	
FW-E11-3154-4WO	UT	TE	3154-5				12S	
FW-E11-3157-OW6	MT	TE	3157-5		07C			
FW-E11-3157-OW6	UT	TE	3157-5		07C			
FW-E11-3158-10WF4	UT	TE	3158-5		07C			
FW-E11-3158-10WF4	MT	TE	3158-5		07C			
FW-E11-3158-1W2	UT	R	3158-5			09C		
FW-E11-3158-1W2	MT	R	3158-5			09C		
FW-E11-3158-9WF2	MT	R	3158-5			09C		

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
C-F-2								
C5.51	Circumferential Weld							
FW-E11-3158-9WF2	UT	R	3158-5			09C		
FW-E11-3159-OW1	MT	HS	3159-5		08C			
FW-E11-3159-OW1	UT	HS	3159-5		08C			
FW-E11-3160-OW2	VT-1	R	3160-5	RR-A26			11C	Note 21
FW-E11-3161-4WF5	VT-1	R	3161-5	RR-A26			12S	Note 21
FW-E11-3164-4W5	MT	R	3164-5				12S	
FW-E11-3164-4W5	UT	R	3164-5				12S	
FW-E11-4611-1W2	VT-1	R	4611-5	RR-A26			12S	Note 21
FW-E11-4611-1WF2	VT-1	R	4611-5	RR-A26			12S	Note 21
FW-E11-4612-3WF4	VT-1	R	4612-5	RR-A26			12S	Note 21
FW-E11-4612-4W5	VT-1	R	4612-5	RR-A26		10C		Note 21
FW-E11-4612-4WF1	VT-1	R	4612-5	RR-A26			12S	Note 21
FW-E11-4612-7W8	VT-1	R	4612-5	RR-A26		10C		Note 21
FW-E11-4612-8WF3	VT-1	R	4612-5	RR-A26		10C		Note 21
FW-E11-4612-9WO	VT-1	R	4612-5	RR-A26			11C	Note 21
FW-E21-3144-0W4	UT	TE	3144-5			10C		
FW-E21-3144-0W4	MT	TE	3144-5			10C		
FW-E21-3144-OW1	MT	TE	3144-5		07C			
FW-E21-3145-11WO	MT	R	3145-5			10C		
FW-E21-3147-16W17	MT	R	3147-5		07C			
FW-E21-3147-16W17	UT	R	3147-5		07C			
FW-E21-3148-0W8	UT	TE	3148-5				12S	
FW-E21-3148-0W8	MT	TE	3148-5				12S	
FW-E21-3148-7W0	MT	TE	3148-5			09C		
FW-E21-3148-7W0	UT	TE	3148-5			09C		
FW-E41-3162-11WF1	VT-1	R	3162-5	RR-A26		09C		Note 21
FW-E41-3162-11WF4	VT-1	R	3162-5	RR-A26		09C		Note 21
FW-E41-3162-11WF5	VT-1	R	3162-5	RR-A26		09C		Note 21

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
<b>C-F-2</b>								
<b>C5.51 Circumferential Weld</b>								
FW-E41-3162-11W0	VT-1	R	3162-5	RR-A26	08C			Note 21
FW-E41-3162-1W2	UT	R	3162-5			10C		
FW-E41-3162-1W2	MT	R	3162-5			10C		
FW-E41-3162-9WF0	UT	TE	3162-5				12S	
FW-E41-3162-9WF0	MT	TE	3162-5				12S	
FW-E41-3163-7W0	MT	TE	3163-5		07C			
FW-E41-3163-7W0	UT	TE	3163-5		07C			
FW-E41-3163-8W0	UT	TE	3163-5				11C	
FW-E41-3163-8W0	MT	TE	3163-5				11C	
FW-E41-3167-1W2	MT	R	3167-5				12S	
FW-E41-3167-1W2	UT	R	3167-5				12S	
FW-E41-3167-9W0	UT	TE	3167-5				11C	
FW-E41-3167-9W0	MT	TE	3167-5				11C	
FW-E41-3167-OW1	MT	TE	3167-5			09C		
FW-E41-3167-OW1	UT	TE	3167-5			09C		
FW-E41-3169-2W0	MT	R	3167-5			09C		
FW-E41-3169-2W0	UT	R	3169-5			09C		
FW-E41-3172-0W1	MT	TE	3172-5			10C		
FW-E41-3172-0W1	UT	TE	3172-5			10C		
FW-E41-3172-0W8	UT	R	3172-5				12S	
FW-E41-3172-0W8	MT	R	3172-5				12S	
FW-G41-3669-0W9	MT	MS	3669-5				12S	
FW-N30-3259-4W0	MT	TE	3259-5		08C			
FW-N30-3259-4W0	UT	TE	3259-5		08C			
FW-T48-04-2095-11W12	MT	R	2095-5		07C			
FW-T48-04-2095-19W0	MT	MS	2095-5	RR-A26	08C			Note 21
FW-T48-04-2095-7W8	MT	R	2095-5			10C		
FW-T48-04-2097-20W21	MT	MS	2097-5	RR-A26	07C			Note 21



FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-F-2								
C5.51	Circumferential Weld							
FW-T48-04-2097-8W9	MT	R	2097-5		07C			
SW-C11-2113-172-A	MT	R	5375-5			09C		
SW-C11-2113-172-A	UT	R	5375-5			09C		
SW-C11-2113-303-A	MT	R	5372-5				11C	
SW-C11-2113-303-A	UT	R	5372-5				11C	
SW-E11-3035-5WE	MT	R	3035-5		07C			
SW-E11-3035-7WB	MT	R	3035-5			09C		
SW-E11-3146-6WE	MT	HS	3146-5			10C		
SW-E11-3146-6WE	UT	HS	3146-5			10C		
SW-E11-3146-6WH	UT	HS	3146-5		07C			
SW-E11-3146-6WH	MT	HS	3146-5		07C			
SW-E11-3153-13WD	MT	R	3153-5		08C			
SW-E11-3153-13WD	UT	R	3153-5		08C			
SW-E11-3154-4WC	MT	R	3154-5			09C		
SW-E11-3154-4WC	UT	R	3154-5			09C		
SW-E11-3157-1WB	MT	R	3157-5				12S	
SW-E11-3157-1WB	UT	R	3157-5				12S	
SW-E11-3158-4WD	MT	R	3158-5				11C	
SW-E11-3158-4WD	UT	R	3158-5				11C	
SW-E11-3158-8WG	UT	R	3158-5				11C	
SW-E11-3158-8WG	MT	R	3158-5				11C	
SW-E11-3161-1WH	MT	R	3161-5				12S	
SW-E11-3161-4WB	VT-1	R	3161-5	RR-A26		10C		Note 21
SW-E11-3161-4WK	VT-1	R	3161-5	RR-A26			12S	Note 21
SW-E11-3177-6WD	UT	R	3177-5				11C	
SW-E11-3177-6WD	MT	R	3177-5				11C	
SW-E11-3177-9WE	UT	R	3177-5			09C		
SW-E11-3177-9WE	MT	R	3177-5			09C		

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period 123	Remarks
C-F-2						
C5.51	Circumferential Weld					
SW-E21-3145-9WD	VT-1	R	3145-5	RR-A26	08C	Note 21
SW-E21-3147-15WF	MT	R	3147-5			11C
SW-E21-3147-15WF	UT	R	3147-5			11C
SW-E21-3147-15WG	MT	R	3147-5		10C	
SW-E21-3147-15WG	UT	R	3147-5		10C	
SW-E21-3147-19WB	UT	R	3147-5		08C	
SW-E21-3147-19WB	MT	R	3147-5		08C	
SW-E21-3147-5WJ	UT	R	3147-5		08C	
SW-E21-3147-5WJ	MT	R	3147-5		08C	
SW-E21-3148-5WD	MT	R	3148-5		08C	
SW-E21-3149-4WD	UT	R	3149-5		07C	
SW-E21-3149-4WD	MT	R	3149-5		07C	
SW-E21-3149-6WC	MT	R	3149-5			12S
SW-E21-3149-6WC	UT	R	3149-5			12S
SW-E21-3149-6WL	MT	R	3149-5			11C
SW-E21-3149-6WL	UT	R	3149-5			11C
SW-E41-3162-11WC	VT-1	R	3162-5	RR-A26	08C	Note 21
SW-E41-3162-2WC	MT	R	3162-5		10C	Replaced SW-E41-3162-1WU
SW-E41-3162-2WC	UT	R	3162-5		10C	CARD 04-25787
SW-E41-5373-GW3	MT	R	5373-5		09C	
SW-E41-5373-GW3	UT	R	5373-5		09C	
SW-G41-3669-3WB	MT	R	3669-5		10C	
SW-N30-3258-13WJ	UT	MS	3258-5			12S
SW-N30-3258-13WJ	MT	MS	3258-5			12S
SW-N30-3258-19WJ	UT	MS	3258-5		07C	
SW-N30-3258-19WJ	MT	MS	3258-5		07C	
SW-N30-3258-1WJ	MT	MS	3258-5		10C	
SW-N30-3258-1WJ	UT	MS	3258-5		10C	

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-F-2								
C5.51	Circumferential Weld							
SW-N30-3258-7WK	UT	MS	3258-5			09C		
SW-N30-3258-7WK	MT	MS	3258-5			09C		
SW-T48-04-2095-5WD	MT	R	2095-5				11C	
SW-T48-04-2095-WSW3	MT	R	2095-5				11C	
SW-T48-04-2097-18WC	MT	R	2097-5			10C		
SW-T48-04-2097-20WD	MT	MS	3258-5	RR-A26			11C	Note 21
SW-T48-04-2097-21WB	VT-1	R	2097-5	RR-A26	07C			Note 21
SW-T48-04-2097-25WF	VT-1	R	2097-5	RR-A26	07C			Note 21
C5.52	Longituinal Weld							
SW-E41-3162-11WOLD	VT-1	R	3162-5	RR-A26	08C			Note 21
SW-N30-3258-13WJLU	MT		3258-5				12S	
SW-N30-3258-13WJLU	UT		3258-5				12S	
SW-N30-3258-19WJLU	UT		3258-5		07C			
SW-N30-3258-19WJLU	MT		3258-5		07C			
SW-N30-3258-1WJLU	MT		3258-5			10C		
SW-N30-3258-7WKLU	MT		3258-5			09C		
SW-N30-3258-7WKLU	UT		3258-5			09C		
C5.81	Branch Connection Weld							
FW-E11-3146-15FW01	MT	MS	3146-5				12S	
FW-E11-3157-4WF01	MT	R	3157-5				12S	
SW-E11-3146-5WC	MT	MS	3146-5		07C			
SW-E11-3146-5WM	MT	HS	3146-5			10C		
SW-E11-3146-7WC	MT	HS	3146-5				12S	
SW-E11-3151-8WD	MT	HS	3151-5		08C			
SW-E11-3160-1WD	MT	HS	3160-5			09C		
SW-E21-3144-5WE	MT	R	3144-5				11C	
SW-N30-3258-13WB	MT	R	3258-5		08C			

C-H

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection 1	Period 2	3	Remarks
<b>C-H</b>								
<b>C.7X</b>	<b>Class 2 Pressure Retaining Boundary (Note 15)</b>							
B21 Main Steam	VT-2	Class 2 Boundary	5808-1 5808-2		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
E11 Residual Heat Removal System	VT-2	Class 2 Boundary	5813-1 5813-2 5813-3		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
E21 Core Spray System	VT-2	Class 2 Boundary	5814		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
E41 High Pressure Coolant Injection	VT-2	Class 2 Boundary	5815		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
G41 Fuel Pool Cooling & Cleanup System	VT-2	Class 2 Boundary	5819		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
G51 Torus Water Management System	VT-2	Class 2 Boundary	5820		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
N30 Main & Reheat Steam System	VT-2	Class 2 Boundary	5822		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
P34 Post Accident Sampling	VT-2	Class 2 Boundary, Code Case N-522	5824		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
T48-04 Containment Atmosphere, Control System	VT-2	Class 2 Boundary, Code Case N-522	5830-1 5830-2		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
T50 Primary Containment Monitoring System	VT-2	Class 2 Boundary, Code Case N-522	5831		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
<b>C7.X</b>	<b>Class 2 Pressure Retaining Boundary (Note 15)</b>							
B21 Main Steam	VT-2	Class 2 Boundary	5808-1 5808-2				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
C11 Control Rod Drive System	VT-2	Class 2 Boundary	5810-1		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period
C11 Control Rod Drive System	VT-2	Class 2 Boundary	5810-1				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
C41 Standby liquid Control System	VT-2	Class 2 Boundary	5811				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
C41 Standby liquid Control System	VT-2	Class 2 Boundary	5811		08C	10C	12S	X includes items C7.10, C7.30, C7.50 and C7.70. Perform each Period

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
C-H								
C7.X	Class 2 Pressure Retaining Boundary (Note 15)							
E11 Residual Heat Removal System	VT-2	Class 2 Boundary	5813-1 5813-2 5813-3	RR-A19			12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
E21 Core Spray System	VT-2	Class 2 Boundary	5814				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
E41 High Pressure Coolant Injection	VT-2	Class 2 Boundary	5815				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
G41 Fuel Pool Cooling & Cleanup System	VT-2	Class 2 Boundary	5819				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
G51 Torus Water Management System	VT-2	Class 2 Boundary	5820				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
N30 Main & Reheat Steam System	VT-2	Class 2 Boundary	5822				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
P34 Post Accident Sampling	VT-2	Class 2 Boundary	5824				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
T48-04 Containment Atmosphere, Control System	VT-2	Class 2 Boundary	5830-1 5830-2				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
T50 Primary Containment Monitoring System	VT-2	Class 2 Boundary	5831				12S	X includes items C7.20, C7.40, C7.60 and C7.80. Perform each Interval; Code Case N498-1
D-B								
D2.10	Pressure Retaining Components							
E11 Residual Heat RemovalSystem Functional Boundary	Visual, VT-2	System Function	Class 3 Systems		08C	10C	12S	Note 15 Perform Each Period; Code Case 498-1
P44 Emergency Equipment Cooling Water	Visual, VT-2	System Function	Class 3 Systems		08C	10C	12S	Note 15 Perform Each Period; Code Case 498-1
P45 Emergency Equipment Service Water	Visual, VT-2	System Function	Class 3 Systems		08C	10C	12S	Note 15 Perform Each Period; Code Case 498-1
R30 Emergency Diesel Generator & Service Water	Visual, VT-2	System Function	Class 3 Systems		08C	10C	12S	Note 15 Perform Each Period; Code Case 498-1
D2.20	Integral Attachment (Supports and Restraints)							
E11-2179-G20	VT-1	10% Selection	2179-2		07C			Code Case N-509

## FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
D-B								
D2.20	Intregal Attachment (Supports and Restraints)							
E11-2184-G12	VT-1	10% Selection	2184-2			10C		Code Case N-509
E11-3184-G08	VT-1	10% Selection	3184-2			09C		Code Case N-509
E11-3185-G40	VT-1	10% Selection	3185-2			09C		Code Case N-509
P44-3084-G10	VT-1	10% Selection	3084-2		07C			Code Case N-509
P44-3336-G01	VT-1	10% Selection	3336-2			09C		Code Case N-509
P44-3337-G13	VT-1	10% Selection	3337-2				12S	Code Case N-509
P44-3347-G14	VT-1	10% Selection	3347-2				12S	Code Case N-509
P44-3348-G12	VT-1	10% Selection	3348-2		07C			Code Case N-509
P44-3559-G12	VT-1	10% Selection	3559-2			10C		Code Case N-509
P45-2178-G09	VT-1	10% Selection	MN-2178			09C		Code Case N-509
P45-2204-G11	VT-1	10% Selection	2204-2				11C	Code Case N-509
P45-3352-G06	VT-1	10% Selection	3352-2		07C			Code Case N-509
P45-3353-G05	VT-1	10% Selection	3353-2			10C		Code Case N-509
P45-4626-G08	VT-1	10% Selection	4626-2				12S	Code Case N-509
P45-4627-G06	VT-1	10% Selection	4627-2				12S	Code Case N-509
R30-2176-G28	VT-1	10% Selection	MN-2176			10C		Code Case N-509
D2.40	Intregal Attachment							
P44-3048-G10	VT-1	10% Selection	3048-2		07C			Code Case N-509
N/A								
N/A	ANSI B31.1 Augmented							
FW-N20-3105-22WO	UT	NUREG 0313	3105-1			09C		Note 2, Category D
FW-N20-3105-0W13	UT	NUREG 0313	3105-1		08C			Note 2, Category D
FW-N20-3105-0W15	UT	NUREG 0313	3105-1				12S	Note 2, Category D
FW-N20-3105-0W23	UT	NUREG 0313	3105-1			09C		Note 2, Category D
FW-N20-3105-14WO	UT	NUREG 0313	3105-1				12S	Note 2, Category D
FW-N20-3105-16W0	UT	NUREG 0313	3105-1		07C			Note 2, Category D
FW-N20-3105-24W0	UT	NUREG 0313	3105-1			10C		Note 2, Category D
FW-N20-3105-OW21	UT	NUREG 0313	3105-1				11C	Note 2, Category D

FERMI 2 NUCLEAR POWER PLANT

Category / Item Identification	Exams Required	Selection Basis	Isometric	Relief Request	Inspection Period			Remarks
					1	2	3	
N/A								
N/A      ANSI B31.1 Augmented								
FW-N20-3107-0W1	UT	NUREG 0313	3107-1			10C		Note 2, Category D
FW-N20-3107-0W17	UT	NUREG 0313	3107-1		07C			Note 2, Category D
FW-N21-3109-18W0	UT	NUREG 0313	3109-1		08C			Note 2, Category D
FW-N21-3109-29W0	UT	NUREG 0313	3109-1				11C	Note 2, Category D
SW-N20-03-B009-BWSE	UT	NUREG 0313	3105-1				11C	Note 2, Category D
SW-N20-03-B010-BWSE	UT	NUREG 0313	3105-1		08C			Note 2, Category D
SW-N20-03-B011-AWSE	UT	NUREG 0313	3105-1			09C		Note 2, Category D
SW-N20-03-B011-BWSE	UT	NUREG 0313	3105-1			09C		Note 2, Category D
SW-N20-03-B012-AWSE	UT	NUREG 0313	3105-1				12S	Note 2, Category D
SW-N20-03-B012-BWSE	UT	NUREG 0313	3105-1				12S	Note 2, Category D
SW-N20-03-B013-AWSE	UT	NUREG 0313	3105-1			10C		Note 2, Category D
SW-N20-03-B013-BWSE	UT	NUREG 0313	3107-1			10C		Note 2, Category D
SW-N20-03-B014-AWSE	UT	NUREG 0313	3105-1		07C			Note 2, Category D
SW-N20-03-B014-BWSE	UT	NUREG 0313	3107-1		07C			Note 2, Category D
SW-N21-01-B001-AWSE	UT	NUREG 0313	3109-1				11C	Note 2, Category D
SW-N21-01-B002-AWSE	UT	NUREG 0313	3109-1		08C			Note 2, Category D

**INSERVICE INSPECTION NDE PROGRAM**

**TABLE B**



## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
1	B11-5360-Skirt	VT-3	A		08C			RPV Skirt & Bolting
1	B11-5360-STAB-A	VT-3	G				11C	RPV Stabilizer Supports
1	B11-5360-STAB-B	VT-3	G		08C			RPV Stabilizer Supports
1	B11-5360-STAB-C	VT-3	G				11C	RPV Stabilizer Supports
1	B11-5360-STAB-D	VT-3	G				11C	RPV Stabilizer Supports
1	B11-5360-STAB-E	VT-3	G				11C	RPV Stabilizer Supports
1	B11-5360-STAB-F	VT-3	G				12S	RPV Stabilizer Supports
1	B11-5360-STAB-G	VT-3	G				11C	RPV Stabilizer Supports
1	B11-5360-STAB-H	VT-3	G				11C	RPV Stabilizer Supports
1	B21-2192-G02	VT-3	SP				12S	
1	B21-2192-G13	VT-3	G				12S	
1	B21-2297-G14	VT-3	G			10C		
1	B21-5352-HA1	VT-3	SP		07C			
1	B21-5353-HB2	VT-3	SP		08C			
1	B21-5354-AC1	VT-3	A				11C	
1	B21-5354-HC3	VT-3	SP		08C			
1	B21-5355-GD1	VT-3	G		07C			
1	B31-5356-HA4	VT-3	SP				12S	
1	B31-5357-HA1	VT-3	SP			10C		
1	B31-5357-HA7	VT-3	C		08C			
1	B31-5358-HB3	VT-3	SP		07C			
1	B31-5359-HB6	VT-3	C			10C		
1	B31-5359-HB7	VT-3	C			09C		
1	E11-2298-G01	VT-3	SP				11C	
1	E11-2299-G03	VT-3	SP				11C	
1	E11-2327-G03	VT-3	R			09C		
1	E21-3052-G02	VT-3	SP			09C		
1	E21-3053-G01	VT-3	SP			09C		
1	E21-3053-G03	VT-3	R				12S	

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
1	E41-2297-G05	VT-3	SP				12S	
1	E51-2192-G11	VT-3	SP		07C			
1	G33-3096-G01	VT-3	SP			10C		
1	G33-3096-G04	VT-3	SP		07C			
1	G33-3096-G10	VT-3	SP				11C	
1	G33-3096-G32	VT-3	G				11C	
1	N21-3536-G02	VT-3	SP			09C		
1	N21-3536-G03	VT-3	SP				12S	
1	N21-3536-G07	VT-3	SP				11C	
1	N21-3537-G04	VT-3	SP			10C		
1	N21-3537-G06	VT-3	SP			10C		
2	B21-2586-G02	VT-3	R				12S	Augmented exam - See ISI 99-056
2	B21-2587-G06	VT-3	SP				11C	Augmented exam - See ISI 99-056
2	B21-2590-G12	VT-3	SP			10C		Augmented exam - See ISI 99-056
2	B21-2592-G04	VT-3	R		07C			Augmented exam - See ISI 99-056
2	B21-2594-G06	VT-3	SP			09C		Augmented exam - See ISI 99-056
2	B21-4095-G06	VT-3	R		07C			Augmented exam - See ISI 99-056
2	C11-2113-G262	VT-3	G				11C	
2	C11-2113-G266	VT-3	R			09C		
2	C11-2113-G274	VT-3	G			09C		
2	C11-2113-G294	VT-3	G		07C			
2	E11-3035-G02	VT-3	R			10C		
2	E11-3035-G05	VT-3	SP			09C		
2	E11-3035-G19	VT-3	G			10C		
2	E11-3035-G24	VT-3	R				12S	
2	E11-3146-G30	VT-3	G				12S	
2	E11-3146-G32	VT-3	SP			09C		
2	E11-3146-G36	VT-3	R			10C		
2	E11-3151-G05	VT-3	SP				11C	

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
2	E11-3151-G25A	VT-3	R		07C			
2	E11-3151-G29	VT-3	R			09C		
2	E11-3153-G10	VT-3	G		08C			
2	E11-3153-G12	VT-3	SP			09C		
2	E11-3153-G16	VT-3	R				12S	
2	E11-3154-G05	VT-3	SP			10C		
2	E11-3154-G09	VT-3	R		08C			
2	E11-3154-G22	VT-3	R				11C	
2	E11-3154-G28	VT-3	R			09C		
2	E11-3157-G04	VT-3	SP		07C			
2	E11-3157-G24	VT-3	R			09C		
2	E11-3157-G29	VT-3	R			10C		
2	E11-3158-G33	VT-3	R			09C		
2	E11-3158-G46	VT-3	R			09C		
2	E11-3158-G50	VT-3	SP				12S	
2	E11-3159-G06	VT-3	R		07C			
2	E11-3159-G09	VT-3	R				11C	
2	E11-3160-G01	VT-3	SP		08C			
2	E11-3160-G19	VT-3	G				12S	
2	E11-3161-G11	VT-3	R				12S	
2	E11-3161-G15	VT-3	R		08C			
2	E11-3164-G11	VT-3	G		07C			
2	E11-3164-G17A	VT-3	R				12S	
2	E11-3164-G21	VT-3	SP		08C			
2	E11-3177-G18	VT-3	R			10C		
2	E11-3177-G19	VT-3	R		08C			
2	E11-3177-G30	VT-3	G			10C		
2	E11-4611-G04	VT-3	SP				12S	
2	E11-4611-G09	VT-3	R				12S	

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
2	E11-4611-G15	VT-3	R		08C			
2	E11-4612-G10	VT-3	R				11C	
2	E11-4612-G12	VT-3	G		08C			
2	E11-5370-G01	VT-3	G				11C	Div 2 RHR HTX Supports
2	E11-5370-G02	VT-3	G		08C			Div 2 RHR HTX Supports
2	E11-5370-G03	VT-3	G			09C		Div 2 RHR HTX Supports
2	E11-5370-G04	VT-3	G				11C	Div 2 RHR HTX Supports
2	E11-5370-G05	VT-3	A		08C			Div 2 RHR HTX Supports
2	E21-3144-G03	VT-3	SP		07C			
2	E21-3144-G06	VT-3	A				11C	
2	E21-3144-G11	VT-3	R				12S	
2	E21-3144-G16	VT-3	R		08C			
2	E21-3144-G20	VT-3	R				11C	
2	E21-3145-G05	VT-3	SP				12S	
2	E21-3147-G13	VT-3	R				12S	
2	E21-3147-G20	VT-3	G			09C		
2	E21-3147-G35	VT-3	R		07C			
2	E21-3147-G39	VT-3	SP			10C		
2	E21-3148-G29	VT-3	R			09C		
2	E21-3148-G37	VT-3	SP			10C		
2	E21-3148-G48	VT-3	R				12S	
2	E21-3149-G05	VT-3	SP				11C	
2	E21-3149-G06	VT-3	R				11C	
2	E21-3150-G02	VT-3	R		07C			
2	E41-3162-G01	VT-3	SP			09C		
2	E41-3162-G03	VT-3	R			09C		
2	E41-3162-G13	VT-3	G				12S	
2	E41-3163-G01	VT-3	SP		08C			
2	E41-3163-G12	VT-3	R				12S	

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
2	E41-3167-G01	VT-3	R		07C			
2	E41-3167-G13	VT-3	SP			10C		
2	E41-3167-G15	VT-3	R				12S	
2	E41-3169-G100	VT-3	G		08C			
2	E41-3169-G13	VT-3	SP			09C		
2	E41-3169-G17	VT-3	R			10C		
2	E41-3172-G01	VT-3	SP		07C			
2	E41-3172-G14	VT-3	R				11C	
2	E41-3172-G18	VT-3	G				11C	
2	N30-3258-G02	VT-3	C		07C			
2	N30-3258-G07	VT-3	C		07C			
2	N30-3258-G17(A-D)	VT-3	R			10C		
2	N30-3259-G02	VT-3	C		07C			
2	N30-3259-G25	VT-3	R			09C		
2	N30-3259-G73	VT-3	SP				12S	
2	P11-3566-G10	VT-3	SP		07C			
2	T48-2095-G01	VT-3	SP		08C			
2	T48-2095-G07B	VT-3	R				11C	
2	T48-2095-G10A	VT-3	R			10C		
2	T48-2095-G19	VT-3	G				11C	
2	T48-2095-G22	VT-3	R			09C		
2	T48-2095-G24A	VT-3	R			10C		
2	T48-2095-G25	VT-3	R		07C			
2	T48-2095-G26A	VT-3	R				12S	
2	T48-2097-G07	VT-3	R			10C		
2	T48-2097-G13B	VT-3	R		07C			
2	T48-2097-G17	VT-3	R				11C	
2	T48-2097-G19	VT-3	G				11C	
2	T48-2097-G21	VT-3	R		07C			

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
2	T48-2097-G22A	VT-3	R			09C		
2	T48-2097-G25A	VT-3	R		08C			
2	T48-2097-G34	VT-3	G			09C		
3	E11-2179-G20	VT-3	R		07C			
3	E11-2180-G14	VT-3	G				12S	
3	E11-2183-G07	VT-3	G			10C		
3	E11-2183-G15	VT-3	R		08C			
3	E11-2184-G12	VT-3	R			10C		
3	E11-2184-G22	VT-3	G		08C			
3	E11-3184-G04	VT-3	G				12S	
3	E11-3184-G08	VT-3	R			09C		
3	E11-3184-G10	VT-3	R				11C	
3	E11-3184-G18	VT-3	R		07C			
3	E11-3185-G40	VT-3	R			09C		
3	E11-3185-G53	VT-3	SP			09C		
3	E11-3185-G58	VT-3	SP				12S	
3	E11-3185-G60	VT-3	G			09C		
3	G33-3096-G09	VT-3	R			10C		
3	P42-3340-G06	VT-3	SP			09C		
3	P44-3047-G28	VT-3	G				11C	
3	P44-3048-G10	VT-3	SP		07C			
3	P44-3084-G10	VT-3	R		07C			
3	P44-3084-G15	VT-3	R			10C		
3	P44-3189-G38	VT-3	SP		08C			
3	P44-3189-G42	VT-3	R			10C		
3	P44-3189-G47	VT-3	R		07C			
3	P44-3336-G01	VT-3	A			09C		
3	P44-3336-G15	VT-3	R				11C	
3	P44-3337-G13	VT-3	R				12S	

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
3	P44-3337-G16	VT-3	R			10C		
3	P44-3345-G02	VT-3	G		08C			
3	P44-3345-G08	VT-3	R			09C		
3	P44-3346-G02	VT-3	G				11C	
3	P44-3346-G12	VT-3	R				12S	
3	P44-3347-G10	VT-3	R		07C			
3	P44-3347-G14	VT-3	R				12S	
3	P44-3348-G12	VT-3	A		07C			
3	P44-3351-G28	VT-3	R		08C			
3	P44-3351-G41	VT-3	SP				12S	
3	P44-3368-G31	VT-3	R				11C	
3	P44-3368-G38	VT-3	R				12S	
3	P44-3558-G14	VT-3	R				12S	
3	P44-3559-G12	VT-3	R			10C		
3	P44-4624-G01	VT-3	G				11C	
3	P44-4624-G12	VT-3	R				12S	
3	P44-4625-G03	VT-3	G				11C	
3	P44-4625-G13	VT-3	R			09C		
3	P44-4628-G02	VT-3	R			10C		
3	P44-4629-G05	VT-3	G			09C		
3	P44-4629-G08	VT-3	R		08C			
3	P44-EECW Head Tank Sprts (Div. 2)	VT-3			08C			
3	P44-EECW Htr Sprts (Div. 1)	VT-3					12S	
3	P45-2178-G09	VT-3	R			09C		
3	P45-2204-G11	VT-3	R				11C	
3	P45-3352-G02	VT-3	G				12S	
3	P45-3352-G06	VT-3	R		07C			
3	P45-3353-G05	VT-3	R			10C		
3	P45-3359-G03	VT-3	G		08C			

INSERVICE INSPECTION NDE PROGRAM  
TABLE B

## FERMI 2 NUCLEAR POWER PLANT

Code Class	Identification Number	Exams Method	Component Support Type	Relief Request	Inspection Period			Remarks
					1	2	3	
3	P45-3360-G04	VT-3	R			10C		
3	P45-3360-G07	VT-3	G			09C		
3	P45-4626-G03	VT-3	G				12S	
3	P45-4626-G08	VT-3	A				12S	
3	P45-4627-G06	VT-3	A				12S	
3	P45-4627-G12	VT-3	R				11C	
3	P45-4630-G04	VT-3	R			09C		
3	P45-4631-G04	VT-3	R			09C		
3	P45-4631-G13	VT-3	G				11C	
3	P45-4632-G08	VT-3	R			10C		
3	P45-4632-G10	VT-3	G				11C	
3	R30-2176-G17	VT-3	G		07C			
3	R30-2176-G28	VT-3	A			10C		
3	R30-2176-G31	VT-3	G		08C			
3	R30-2177-G04	VT-3	R			09C		
3	R30-2177-G27	VT-3	R				11C	
3	R30-2177-G31	VT-3	G		08C			
3	R30-2181-G04	VT-3	R				11C	
3	R30-2181-G15	VT-3	R			10C		
3	R30-2182-G02	VT-3	G			09C		
3	R30-2182-G14	VT-3	R		07C			



## **SECTION 8**

### **SUMMARY OF CONTAINMENT INSPECTIONS (IWE)**

#### **ABSTRACT OF CONDITIONS NOTED AND CORRECTIVE ACTIONS TAKEN**

#### **UPDATED PROGRAM TABLES**

## 8.0 SUMMARY OF CONTAINMENT INSPECTIONS (IWE)

### 8.1 PROGRAM STATUS, ASME SECTION XI CREDIT – IWE

8.1.1 CATEGORY: E-A Containment Surfaces  
ITEM NO: E1.11 Accessible Surface Areas (each period)

Description	Total Com	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Accessible Liner Surfaces	3	3	3	100%	100%	100%
TOTAL	3	3	3	100%	100%	100%

NOTE:

- (1) Per 10CFR50.55a, 100% of the accessible surfaces of the containment were required to be inspected (General Visual) during the first period (RF07) and once every period after. During RF09, a 100% inspection was completed of the accessible areas of the primary containment, which completed the inspection requirement for the 2<sup>nd</sup> period. During RF11, again 100% of the accessible surface was inspected. The RF11 inspection completes the requirements for the 3<sup>rd</sup> period (ISI/IST Evaluation 06-038).

8.1.2 CATEGORY: E-A Containment Surfaces  
ITEM NO: E1.12 Accessible Surface Areas

Description	Total Comp.	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Accessible Liner Surfaces	1	1	1	91%	80%	100%
TOTAL	1	1	1	91%	80%	80%

NOTE:

- (1) Inspections (VT-3) will be performed during the 3<sup>rd</sup> Period, RF11 and RF12 (91% of containment surface inspected during RF11). IWE-1230(a)(4) requires that 80% of the surface area identified in Table IWE-2500-1, Examination Category E-A be inspected. Inspections completed through RF11 are 78% (ISI/IST Evaluation 06-035).

8.1.3      CATEGORY:      E-A      Containment Surfaces  
                  ITEM NO:      E1.20      Vent System - Accessible Surface Areas

Description	Total Comp.	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Accessible Liner Surfaces	1	1	1	25%	80%	100%
TOTAL	1	1	1	25%	80%	100%

NOTE:

- (1) Inspections (VT-3) will be performed during the 3<sup>rd</sup> Period, RF11 and RF12 (25% of Vent System surface inspected during RF11). IWE-1230(a)(4) requires that 80% of the surface area identified in Table IWE-2500-1, Examination Category E-A be inspected. Inspections completed through RF11 are 78% (ISI/IST Evaluation 06-035).

8.1.4      CATEGORY:      E-B      Pressure Retaining Welds  
                  ITEM NO:      E3.10      Containment Penetration Welds

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Visual Surfaces	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

- (1) 10CFR50.55a(b)(2)(x)(c) lists this as an optional inspection because there is no currently identified degradation mechanism. Current visual examinations are satisfactory.

8.1.5      CATEGORY:      E-B      Pressure Retaining Welds  
ITEM NO:      E3.20      Flange Welds

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Visual Surfaces	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

- (1) 10CFR50.55a(b)(2)(x)(c) lists this as an optional inspection because there is no currently identified degradation mechanism. Current visual examinations are satisfactory.

8.1.6      CATEGORY:      E-B      Pressure Retaining Welds  
ITEM NO:      E3.30      Nozzle To Shell Welds

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Visual Surfaces	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

- (1) 10CFR50.55a(b)(2)(x)(c) lists this as an optional inspection because there is no currently identified degradation mechanism. Current visual examinations are satisfactory.

8.1.7 CATEGORY: E-C Containment Surfaces Requiring Augmented Examination  
ITEM NO: E4.11 Visible Surface

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Visual Surfaces	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

(1) No Visual augmented examinations have been identified through RF11.

8.1.8 CATEGORY: E-C Containment Surfaces Requiring Augmented Examination  
ITEM NO: E4.12 Surface Area Grid, Min Wall Thickness Locations

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Surface Area Grid	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

(1) No Visual augmented examinations have been identified through RF11.

8.1.9 CATEGORY: E-D Seals, Gaskets, and Moisture Barriers  
 ITEM NO: E5.10 Seals

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Seals	61	61	(1)	N/A	N/A	N/A
TOTAL	61	61	(1)	N/A	N/A	N/A

NOTE:

- (1) Code requires a visual examination, VT-3, of all seals, gaskets, and other devices once each interval. Request for Relief CISI-001 has been approved to verify the leak tightness of seals and gaskets in accordance with the 10CFR50, Appendix J Program.

8.1.10 CATEGORY: E-D Seals, Gaskets, and Moisture Barriers  
 ITEM NO: E5.20 Gaskets

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Gasket	31	31	(1)	N/A	N/A	N/A
TOTAL	31	31	(1)	N/A	N/A	N/A

NOTE:

- (1) Code requires a visual examination, VT-3, of all seals, gaskets, and other devices once each interval. Request for Relief CISI-001 has been approved to verify the leak tightness of seals and gaskets in accordance with the 10CFR50, Appendix J Program.

8.1.11 CATEGORY: E-D Seals, Gaskets, and Moisture Barriers  
ITEM NO: E5.30 Moisture Barrier

Description	Total Comp	Total Requiring Examination	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Moisture Barrier	1	1	1	100%	35%	67%
TOTAL	1	1	1	100%	35%	67%

NOTE:

During RF07, 100% of the moisture barrier was inspected and replaced. There was no damage to the liner at this location. During RF08, RF09 and RF10, it was inspected again with no degradation identified. 67% credited for RF08, RF09 and RF10. During RF11, again 100% of the moisture seal was inspected with no damage noted. 100% credited for RF11.

8.1.12 CATEGORY: E-F Pressure Retaining Dissimilar Metal Welds  
ITEM NO: E7.10 Dissimilar Metal Welds

Description	Total Comp	Total Requiring Examination (1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Visual Surfaces	0	0	0	N/A	N/A	N/A
TOTAL	0	0	0	N/A	N/A	N/A

NOTE:

- (1) 10CFR50.55a(b)(2)(x)(c) lists this as an optional inspection because there is no currently identified degradation mechanism. Current visual examinations are satisfactory.

8.1.13 CATEGORY: E-G Pressure Retaining Bolting  
ITEM NO: E8.10 Bolting Connections

Description	Total Comp	Total Requiring Examination	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Bolting Connections	89	89	87	97%	34%	67%
TOTAL	89	89	87	97%	34%	67%

8.1.14 CATEGORY: E-G Pressure Retaining Bolting  
ITEM NO: E8.20 Bolting Connections

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Bolting Connections Torque	89	89	(1)	N/A	N/A	N/A
TOTAL	89	89	(1)	N/A	N/A	N/A

NOTE:

- (1) Code requires a bolt torque or tension test for bolted connections not disassembled. Request for Relief CISI-007 has been approved to verify the leak tightness of bolted connections in accordance with the 10CFR50, Appendix J Program.

8.1.15 CATEGORY: E-P Pressure Retaining Components  
ITEM NO: E9.10 Pressure Retaining Boundary

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Pressure Retaining Boundary	1	1	(1)	N/A	N/A	N/A
TOTAL	1	1	(1)	N/A	N/A	N/A

NOTE:

- (1) Will be tested in accordance with the 10CFR50, Appendix J Program.



8.1.16 CATEGORY: E-P Pressure Retaining Components  
ITEM NO: E9.20 Containment Penetration Bellows

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Containment Penetration Bellows	29	29	(1)	N/A	N/A	N/A
TOTAL	29	29	(1)	N/A	N/A	N/A

NOTE:

(1) Will be tested in accordance with the 10CFR50, Appendix J Program.

8.1.17 CATEGORY: E-P Pressure Retaining Components  
ITEM NO: E9.30 Airlocks

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Airlock	1	1	(1)	N/A	N/A	N/A
TOTAL	1	1	(1)	N/A	N/A	N/A

NOTE:

(1) Will be tested in accordance with the 10CFR50, Appendix J Program.

8.1.18 CATEGORY: E-P Pressure Retaining Components  
ITEM NO: E9.40 Seals and Gaskets

Description	Total Comp	Total Requiring Examination(1)	Examined To Date	Examined To Date (%)	Minimum Required (%)	Maximum Allowed (%)
Seals And Gaskets	92	92	(1)	N/A	N/A	N/A
TOTAL	92	92	(1)	N/A	N/A	N/A

NOTE:

(1) Will be tested in accordance with the 10CFR50, Appendix J Program.

## 8.2 Refuel-11

This is a summary of the IWE inspection activities at Fermi 2 that were completed on-line during cycle 11, and during Refueling Outage 11 (RF11). On-line inspections include VT-3 inspections of 100% of the torus exterior and portions of the drywell to torus expansions bellows. The inspection scope during RF11 consisted of VT-3 inspections of 100% of the exposed drywell interior and exterior, percentages of the containment bellows, and of the containment vent system. Also, 100% to the drywell floor to containment liner moisture seal was inspected, as well as, a representative sample of the primary containment bolting was examined.

During all VT-3 inspections, the protective coatings as well as the metallic shell was examined. The on-line inspections, as well as the refuel inspections were completed by using both the direct and remote visual inspection methods.

General inspections during RF10 identified six areas as requiring coating repairs in the drywell basement area. These repairs were completed during RF11 under Work Request 000Z043787. After the repairs were completed, the areas received baseline general visual inspections of the protective coating.

### ABSTRACT OF CONDITION NOTED AND CORRECTED ACTIONS TAKEN

During Cycle 11 and RF11, the following inspections were performed:

- VT-3 inspection of 100% of the torus exteriors protection coatings and metallic shell.
- VT-3 inspection of 100% of the drywell exposed interior and exterior protection coatings and metallic shell.
- VT-3 inspection of 100% of the drywell floor to metallic shell moisture seal.
- VT-3 inspection of four drywell to torus downcomers expansion bellows.
- VT-3 inspection of eight drywell expansion bellows.
- VT-1 inspection of 26 primary containment bolted connections.
- General visual inspection of coating repairs in the drywell basement.

The following discrepancies were identified during the above inspections:

- Degraded protective coatings on the torus exterior, 16 locations identified for repair (CARD 05-25459). The identified areas have been repaired by restoring the protective coating.
- Minor tool punch marks on torus exterior, CARD 05-25341 was generated to document this condition, no repair required.

## Refuel-10

This is a summary of the IWE inspection activities completed at Fermi 2 during the tenth refueling outage. RF10 concluded the second period in the interval and now aligns with the ISI NDE Program. The inspection scope was limited as the majority of the second period inspections were completed during RF09. Inspections consisted of the protective coating areas that were repaired during RF09, the drywell basement moisture seal, primary containment bolting on relief valves that were removed for testing, along with other miscellaneous bolting.

### ABSTRACT OF CONDITION NOTED AND CORRECTED ACTIONS TAKEN

During RF10, the following inspections were performed:

- A general visual inspection of the protective coatings in the drywell basement area.
- The moisture seal at the drywell basement floor to steel liner was inspected.
- 18 bolted primary containment connections were inspected, 9 while the bolting material was under tension and 9 while the flanged connection was disassembled.
- While not credited, an inspection was also performed of the interior of the torus vent header during its closeout.
- During the cycle, the exterior of the torus was inspected.

The following discrepancies were identified during the above inspections:

- Degraded protective coating in the drywell basement area, eight locations were identified (CARD 04-26062).
- Degraded protective coatings in the torus vent header (CARD 04-26143).
- Evaluation of degraded protective coating in the drywell basement (CARD 04-26144).

Additionally, in preparation for torus diving inspections and coating repairs schedule for RF10, past inspection reports were reviewed. In the RF08 Torus Desludge, Inspection & Coating Repair Report, the review identified a corrosion pit in the torus shell that had not previously been brought to the attention of Fermi 2 personnel. The corrosion pit is located in Bay 3, Quadrant 2. The pit is ¼ inch in diameter and has a depth of 0.0285 inches. The pit and the surrounding area was cleaned and the protective coating was reapplied. The pit was evaluated and accepted in CARD 04-21434.

### 8.3 Refuel-09

This is a summary of the IWE inspection activities completed at Fermi 2 during the ninth refueling outage. The RF09 scope included the required 2<sup>nd</sup> period 100 percent inspection of the accessible surfaces of the primary containment and a representative sample of VT-1 and VT-3 inspections of primary containment bolted components. This is the second refueling outage of the 2<sup>nd</sup> period, which consist of three refueling outages, with RF09 containing the majority of the inspections.

#### ABSTRACT OF CONDITION NOTED AND CORRECTED ACTIONS TAKEN

Locations where degraded coating was identified during RF07 and RF08 were reinspected prior to repair. Areas identified showed no further degradation in their condition. These areas had a thin layer of surface rust, which was a result of condensation from overhead lines dripping down onto the primary containment shell.

During RF09, 11 locations below the 583 feet elevation had their protective coating replaced. During the protective coating prep work, no material loss of the primary containment shell was noted. In addition to these 11 areas, a pit at the I-Beam weld, at elevation 583 feet, azimuth 77 deg, was cleaned and repainted. Finally, seven arc strikes, which had been previously blend ground, were recoated.

During RF09, areas that were repaired during RF07 were reinspected with particular attention given to the moisture seal located at the concrete floor to drywell shell interface and the painted surface in this area. These inspections identified no new or unexpected degradation.

The inspections of the remainder of the primary containment resulted in the issuance of 7 condition assessment resolution documents (CARDs). CARD 03-14450, "Water Accumulation in Torus Downcomer to Vent Header Tee Connections," was generated to address the water accumulation in the ring header. None of the other CARDs were an operability concern and were issued for trending and cleanliness issues.

#### 8.4 Refuel-08

This is a summary of the IWE inspection activities completed at Fermi 2 during the eighth refueling outage. The RF08 inspection scope was limited. This was a result of 10CFR50.55a being reissued with the requirement that IWE be implemented on an expedited basis and that all of the 1<sup>st</sup> period inspections be completed by September 2001. As a result, Fermi 2 was required to complete all the 1<sup>st</sup> period inspections during RF07. This resulted in the 2<sup>nd</sup> period consisting of three refueling outages, with RF09 containing the majority of the inspections.

#### ABSTRACT OF CONDITION NOTED AND CORRECTED ACTIONS TAKEN

Locations where degraded coating was identified during RF07 were reinspected to reassess their condition. No further degradation was identified. These areas were mapped and will be scheduled for re-coating during RF09.

During RF08, areas that were repaired during RF07 were reinspected with particular attention given to the moisture seal located at the concrete floor to drywell shell interface and the painted surface in this area. These inspections identified no new degradation since the repair work was completed.

During RF08, the immersed areas of the torus was desludged, after which both the immersed and vapor spaces were inspected by certified VT inspectors. All areas of coating degradations were recorded. None of the areas where the protective coating was degraded exhibited any pitting or degradation of the containment liner. After the initial VT inspections, locations with degraded protective coating were repaired.

## 8.5 Refuel-07

This is a summary of the IWE inspection completed at Fermi 2 during the seventh refueling outage. 10CFR50.55a was reissued with the requirement that IWE be implemented on an expedited basis and that all of the 1<sup>st</sup> period inspections be completed by September 2001. As a result, Fermi 2 was required to complete all the 1<sup>st</sup> period inspections during the seventh refueling outage as the eighth refueling outage is not scheduled until October 2001.

### ABSTRACT OF CONDITION NOTED AND CORRECTED ACTIONS TAKEN

During the general visual inspections of the containment liner, several conditions were reported which required corrective actions. The reported conditions are listed as follows:

- Degradation of the moisture seal at the drywell floor to drywell liner interface.
- Loose protective coating in the area of the drywell floor to steel liner interface, from the floor and up one foot.
- Penetration radiation shield plate was found wedged into the penetration without the required tack welds.
- Outer drywell airlock seal had a crack in the rubber gasket.
- Material loss on a single tie-down eyebolt on the north equipment hatch.

All of the above conditions were repaired or replaced by corrective maintenance activities.

- Arc strikes on the south equipment hatch sealing area.
- Degradation of the protective coating at various locations on the containment liner, both interior and exterior.
- A pit of 0.093 inches in depth at the liner to I beams interface.

The above conditions were evaluated using prudent engineering analysis and were determined to be acceptable for the eighth operating cycle. Corrective maintenance for the above is being planned for future refueling outages.

# IWE Containment Program

## Component Examination Schedule

ISI-NDE Program  
Rev.5; Change 0  
Appendix F4.7

					Period 1	Period 2			Period 3		Appendix F4.7	
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
E1.11												
1	Drywell (Drywell inspections consisted of items 3 through 35.)	E-A	E1.11	VT-G	GC	-	GC	-	GC	GS	N/A	Once per Period, Prior to each Type A Test
2	Suppression Chamber (Torus) (Torus inspections consisted of items 36 through 120.)	E-A	E1.11	VT-G	GC	-	GC	-	GC	GS	N/A	Once per Period, Prior to each Type A Test
E1.12												
3	Drywell Interior 563' to 583' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	GC	-	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
4	Drywell Interior 563' to 583' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	GC	-	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
5	Drywell Interior 563' to 583' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	GC	-	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
6	Drywell Interior 563' to 583' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	GC	-	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
7	Drywell Interior 583' to 613' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
8	Drywell Interior 583' to 613' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
9	Drywell Interior 583' to 613' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
10	Drywell Interior 583' to 613' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
11	Drywell Interior 613' to 641' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
12	Drywell Interior 613' to 641' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
13	Drywell Interior 613' to 641' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings

# Component Examination Schedule

ISI-NDE Program  
Rev.5; Change 0  
Appendix F4.7

					Period 1	Period 2				Period 3		Appendix F4.7	
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks	
14	Drywell Interior 613' to 641' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
15	Drywell Interior 641' to 659' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
16	Drywell Interior 641' to 659' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
17	Drywell Interior 641' to 659' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
18	Drywell Interior 641' to 659' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
19	Drywell Dome Interior and Exterior	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
20	Drywell Exterior 563' to 583' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
21	Drywell Exterior 563' to 583' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
22	Drywell Exterior 563' to 583' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
23	Drywell Exterior 563' to 583' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
24	Drywell Exterior 583' to 613' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
25	Drywell Exterior 583' to 613' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
26	Drywell Exterior 583' to 613' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
27	Drywell Exterior 583' to 613' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
28	Drywell Exterior 613' to 641' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	



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Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks	
29	Drywell Exterior 613' to 641' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
30	Drywell Exterior 613' to 641' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
31	Drywell Exterior 613' to 641' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
32	Drywell Exterior 641' to 659' (Az 0 to 90)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
33	Drywell Exterior 641' to 659' (Az 90 to 180)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
34	Drywell Exterior 641' to 659' (Az 180 to 270)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
35	Drywell Exterior 641' to 659' (Az 270 to 0)	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
36	Torus Interior Bay 1	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
37	Torus Interior Bay 2	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
38	Torus Interior Bay 3	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
39	Torus Interior Bay 4	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
40	Torus Interior Bay 5	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
41	Torus Interior Bay 6	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
42	Torus Interior Bay 7	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	
43	Torus Interior Bay 8	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings	

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					Period 1	Period 2		Period 3		Appendix F4.7		
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
44	Torus Interior Bay 9	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
45	Torus Interior Bay 10	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
46	Torus Interior Bay 11	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
47	Torus Interior Bay 12	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
48	Torus Interior Bay 13	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
49	Torus Interior Bay 14	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
50	Torus Interior Bay 15	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
51	Torus Interior Bay 16	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
52	Torus Exterior Bay 1	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
53	Torus Exterior Bay 2	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
54	Torus Exterior Bay 3	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
55	Torus Exterior Bay 4	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
56	Torus Exterior Bay 5	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
57	Torus Exterior Bay 6	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
58	Torus Exterior Bay 7	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings

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				Period 1	Period 2		Period 3				
Item	Exam Area Identification	Cat.	Code NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
59	Torus Exterior Bay 8	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
60	Torus Exterior Bay 9	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
61	Torus Exterior Bay 10	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
62	Torus Exterior Bay 11	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
63	Torus Exterior Bay 12	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
64	Torus Exterior Bay 13	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
65	Torus Exterior Bay 14	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
66	Torus Exterior Bay 15	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
67	Torus Exterior Bay 16	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
100	Drywell Penetration Expansion Bellow X-007A	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
101	Drywell Penetration Expansion Bellow X-007B	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
102	Drywell Penetration Expansion Bellow X-007C	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
103	Drywell Penetration Expansion Bellow X-007D	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
104	Drywell Penetration Expansion Bellow X-008	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
105	Drywell Penetration Expansion Bellow X-009A	E-A	E1.12 VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers

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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1		Period 2		Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
106	Drywell Penetration Expansion Bellow X-009B	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
107	Drywell Penetration Expansion Bellow X-010	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
108	Drywell Penetration Expansion Bellow X-011	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
109	Drywell Penetration Expansion Bellow X-012	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
110	Drywell Penetration Expansion Bellow X-013A	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
111	Drywell Penetration Expansion Bellow X-013B	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	VTC	-	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
112	Drywell Penetration Expansion Bellow X-016A	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
113	Drywell Penetration Expansion Bellow X-016B	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
114	Drywell Penetration Expansion Bellow X-017	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
115	Drywell Penetration Expansion Bellow X-035B	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
116	Drywell Penetration Expansion Bellow X-035C	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
117	Drywell Penetration Expansion Bellow X-035D	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
118	Drywell Penetration Expansion Bellow X-035E	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
119	Drywell Penetration Expansion Bellow X-035F	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
120	Drywell Penetration Expansion Bellow X-043	E-A	E1.12	VT-3 VT-G	GC	-	GC	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers

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Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
68	Drywell to Torus Downcomer to Bay 2 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
69	Drywell to Torus Downcomer to Bay 4 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
70	Drywell to Torus Downcomer to Bay 6 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
71	Drywell to Torus Downcomer to Bay 8 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
72	Drywell to Torus Downcomer to Bay 10 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
73	Drywell to Torus Downcomer to Bay 12 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
74	Drywell to Torus Downcomer to Bay 14 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
75	Drywell to Torus Downcomer to Bay 16 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
76	Drywell to Torus Expansion Bellows Downcomer to Bay 2	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
77	Drywell to Torus Expansion Bellows Downcomer to Bay 4	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
78	Drywell to Torus Expansion Bellows Downcomer to Bay 6	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
79	Drywell to Torus Expansion Bellows Downcomer to Bay 8	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
80	Drywell to Torus Expansion Bellows Downcomer to Bay10	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
81	Drywell to Torus Expansion Bellows Downcomer to Bay12	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	-	VTS	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
82	Drywell to Torus Expansion Bellows Downcomer to Bay14	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings

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Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
83	Drywell to Torus Expansion Bellows Downcomer to Bay16	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	-	N/A	Includes parts of reinforcing structure, stiffing rings, manhole covers and reinforcement around openings
84	Flow Channeling Devices (Ring Header) In Bay 1 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
85	Flow Channeling Devices (Ring Header) In Bay 2 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
86	Flow Channeling Devices (Ring Header) In Bay 3 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
87	Flow Channeling Devices (Ring Header) In Bay 4 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
88	Flow Channeling Devices (Ring Header) In Bay 5 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
89	Flow Channeling Devices (Ring Header) In Bay 6 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
90	Flow Channeling Devices (Ring Header) In Bay 7 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
91	Flow Channeling Devices (Ring Header) In Bay 8 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
92	Flow Channeling Devices (Ring Header) In Bay 9 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
93	Flow Channeling Devices (Ring Header) In Bay 10 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
94	Flow Channeling Devices (Ring Header) In Bay 11 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
95	Flow Channeling Devices (Ring Header) In Bay 12 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
96	Flow Channeling Devices (Ring Header) In Bay 13 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
97	Flow Channeling Devices (Ring Header) In Bay 14 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTS	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers

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				Period 1	Period 2		Period 3					
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
98	Flow Channeling Devices (Ring Header) In Bay 15 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
99	Flow Channeling Devices (Ring Header) In Bay 16 - Exterior	E-A	E1.20	VT-3 VT-G	GC	-	GC	-	VTPC	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
401	Flow Channeling Devices (Ring Header) In Bay 1 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
402	Flow Channeling Devices (Ring Header) In Bay 2 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
403	Flow Channeling Devices (Ring Header) In Bay 3 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
404	Flow Channeling Devices (Ring Header) In Bay 4 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
405	Flow Channeling Devices (Ring Header) In Bay 5 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
406	Flow Channeling Devices (Ring Header) In Bay 6 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
407	Flow Channeling Devices (Ring Header) In Bay 7 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
408	Flow Channeling Devices (Ring Header) In Bay 8 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
409	Flow Channeling Devices (Ring Header) In Bay 9 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
410	Flow Channeling Devices (Ring Header) In Bay 10 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
411	Flow Channeling Devices (Ring Header) In Bay 11 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
412	Flow Channeling Devices (Ring Header) In Bay 12 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
413	Flow Channeling Devices (Ring Header) In Bay 13 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTs	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers

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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1	Period 2			Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
414	Flow Channeling Devices (Ring Header) In Bay 14 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
415	Flow Channeling Devices (Ring Header) In Bay 15 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
416	Flow Channeling Devices (Ring Header) In Bay 16 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
417	Drywell to Torus Downcomer to Bay 2 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
418	Drywell to Torus Downcomer to Bay 4 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
419	Drywell to Torus Downcomer to Bay 6 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
420	Drywell to Torus Downcomer to Bay 8 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
421	Drywell to Torus Downcomer to Bay 10 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
422	Drywell to Torus Downcomer to Bay 12 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
423	Drywell to Torus Downcomer to Bay 14 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
424	Drywell to Torus Downcomer to Bay 16 - Interior	E-A	E1.20	VT-3 VT-G	-	-	-	-	-	VTG	N/A	Includes all welds, reinf. plates shell surfaces on the ventline, the vent header and downcomers
<b>E4.11</b>												
121	Drywell Interior	E-C	E4.11	VT-1	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
123	Drywell Exterior	E-C	E4.11	VT-1	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
125	Suppression Chamber Interior	E-C	E4.11	VT-1	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
127	Suppression Chamber Exterior	E-C	E4.11	VT-1	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
<b>E4.12</b>												
122	Drywell Interior	E-C	E4.12	VOLU	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time



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					RF07	RF08	RF09	RF10	RF11	RF12		
124	Drywell Exterior	E-C	E4.12	VOLU	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
126	Suppression Chamber Interior	E-C	E4.12	VOLU	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
128	Suppression Chamber Exterior	E-C	E4.12	VOLU	-	-	-	-	-	-	N/A	No areas identified for augmented exams at this time
<b>E5.10</b>												
129	Drywell Head Flange Seal X-001A	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
130	South Equipment Hatch Seal X-001B	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
131	North Equipment Hatch Seal X-001C	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
132	Drywell Personnel Airlock Seals (2) X-001D	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
133	Reactor Vessel Stablization Manhole Seal X-001E	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
134	Reactor Vessel Stablization Manhole Seal X-001F	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
135	Reactor Vessel Stablization Manhole Seal X-001G	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
136	Reactor Vessel Stablization Manhole Seal X-001H	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
137	Reactor Vessel Stablization Manhole Seal X-001J	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
138	Reactor Vessel Stablization Manhole Seal X-001K	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
139	Reactor Vessel Stablization Manhole Seal X-001L	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
140	Reactor Vessel Stablization Manhole Seal X-001M	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
141	CRD Hatch Seal X-006	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
142	TIP Penetration Seal X-035A	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
143	TIP Penetration Seal (2) X-035B	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
144	TIP Penetration Seal (2) X-035C	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
145	TIP Penetration Seal (2) X-035D	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
146	TIP Penetration Seal (2) X-035E	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
147	TIP Penetration Seal (2) X-035F	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program

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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1		Period 2		Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
148	Electrical Penetration Bolting X-100A (X-100A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
149	Electrical Penetration Seal X-100B (X-102A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
150	Electrical Penetration Seal (100C)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
151	Electrical Penetration Seal (X-100E)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
152	Electrical Penetration Seal X-100F (X-103B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
153	Electrical Penetration Seal X-100G (X-100G)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
154	Electrical Penetration Seal X-101A (X-101A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
155	Electrical Penetration Seal X-101B (X-101B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
156	Electrical Penetration Seal X-101C (X-101C)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
157	Electrical Penetration Seal X-101D (X-101D)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
158	Electrical Penetration Seal X-101E (X-101E)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
159	Electrical Penetration Seal X-101F (X-101F)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
160	Electrical Penetration Seal X-102A (X-105B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
161	Electrical Penetration Seal X-102B (X-102B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
162	Electrical Penetration Seal X-102C (X-100B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
163	Electrical Penetration Seal X-102D (X-105C)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
164	Electrical Penetration Seal X-103A (X-103A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
165	Electrical Penetration Seal X-103B (X-107B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
166	Electrical Penetration Seal X-104A (X-104A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
167	Electrical Penetration Seal X-104B (X-104B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
168	Electrical Penetration Seal X-104C (X-104C)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
169	Electrical Penetration Seal X-104D (X-104D)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program

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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1		Period 2		Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
170	Electrical Penetration Seal X-104E (X-104E)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
171	Electrical Penetration Seal X-104F (X-104F)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
172	Electrical Penetration Seal X-105A (X-105A)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
173	Electrical Penetration Seal X-105D (X-105D)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
174	Electrical Penetration Seal X-106A (X-100D)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
175	Electrical Penetration Seal X-106B (X-106B)	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
176	South Torus Hatch Seal Penetration X-200A	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
177	North Torus Hatch Seal Penetration X-200B	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
178	Electrical Penetration Seal X-209A	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
179	Electrical Penetration Seal X-209C	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
180	Vacuum Breaker-Electrical Penetration Seal X-228A	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
181	Vacuum Breaker-Electrical Penetration Seal X-228B	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
182	Vacuum Breaker-Electrical Penetration Seal X-228C	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
183	Vacuum Breaker-Electrical Penetration Seal X-228D	E-D	E5.10	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
<b>E5.20</b>												
184	Penetration Flange Rupture Disk Gasket X-018	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
185	Penetration Flange Rupture Disk Gasket X-019	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
186	Spectacle Flange Gasket X-020	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
187	Penetration Flange Gasket X-039A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
188	Penetration Flange Gasket X-039B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
189	Butterfly Valve Flange Gasket Penet. X-205C	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
190	Butterfly Valve Flange Gasket Penet. X-205D	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
191	RHR Test Line Orifice D008B Gasket Penetration X-210A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program

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					Period 1	Period 2				Period 3		Appendix F4.7	
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks	
192	RHR Test Line Orifice D009B Gasket Penetration X-210A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
193	Relief Valve Flange Gasket E1100F001B Penetration X-210A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
194	Relief Valve Flange Gasket E1100F025B Penetration X-210A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
195	RHR Blind Flange Gasket Penetration X-210A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
196	RHR Test Line Orifice D008A Gasket Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
197	RHR Test Line Orifice D009A Gasket Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
198	Relief Valve Flange Gasket E1100F001A Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
199	Relief Valve Flange Gasket E1100F025A Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
200	Relief Valve Flange Gasket E1100F029 Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
201	RHR Blind Flange Gasket Penetration X-210B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
202	TWMS Spool Gasket 4055-1 Penetration X-213A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
203	TWMS Spool Gasket 4055-2 Penetration X-213A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
204	TWMS Spool Gasket 4056-1 Penetration X-213B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
205	TWMS Spool Gasket 4056-2 Penetration X-213B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
206	Relief Valve Flange Gasket T4804F016A Penetration X-218	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
207	Relief Valve Flange Gasket T4804F016B Penetration X-218	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
208	Relief Valve Flange Gasket E1100F030D Penetration X-223A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
209	Relief Valve Flange Gasket E1100F030B Penetration X-223B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
210	Relief Valve Flange Gasket E1100F030C Penetration X-223C	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
211	Relief Valve Flange Gasket E1100F030A Penetration X-223D	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
212	Relief Valve Flange Gasket E2100F011B Penetration X-227A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	
213	Relief Valve Flange Gasket E2100F012B Penetration X-227A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program	

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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1		Period 2		Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
214	Relief Valve Flange Gasket E2100F032B Penetration X-227A	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
215	Relief Valve Flange Gasket E2100F011A Penetration X-227B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
216	Relief Valve Flange Gasket E2100F012A Penetration X-227B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
217	Relief Valve Flange Gasket E2100F032A Penetration X-227B	E-D	E5.20	VT-3	-	-	-	-	-	-	CISI-001	No Examinations Required, In Appendix J Program
<b>E5.30</b>												
218	Drywell Moisture Seal (Drywell concrete floor to metal liner)	E-D	E5.30	VT-3	34% Complete	-	67% Complete	-	100% Complete	-	N/A	
<b>E8.10</b>												
219	Drywell Head Flange Bolting X- 001A	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
220	South Equipment Hatch Bolting X- 001B	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
221	North Equipment Hatch Bolting X- 001C	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
222	Drywell Personnel Airlock Bolting X-001D	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
223	Reactor Vessel Stablization Manhole Bolting X-001E	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
224	Reactor Vessel Stablization Manhole Bolting X-001F	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
225	Reactor Vessel Stablization Manhole Bolting X-001G	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
226	Reactor Vessel Stablization Manhole Bolting X-001H	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
227	Reactor Vessel Stablization Manhole Bolting X-001J	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
228	Reactor Vessel Stablization Manhole Bolting X-001K	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
229	Reactor Vessel Stablization Manhole Bolting X-001L	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
230	Reactor Vessel Stablization Manhole Bolting X-001M	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
231	CRD Hatch Bolting X-006	E-G	E8.10	VT-1	-	VTC	VTC	-	-	-	N/A	
232	Penetration Flange Rupture Disk Bolting X-018	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
233	Penetration Flange Rupture Disk Bolting X-019	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
234	Spectacle Flange Bolting X-020	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
235	TIP Penetration Bolting X-035A	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	

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					Period 1	Period 2		Period 3				
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
236	TIP Penetration Bolting X-035B	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
237	TIP Penetration Bolting X-035C	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
238	TIP Penetration Bolting X-035D	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
239	TIP Penetration Bolting X-035E	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
240	TIP Penetration Bolting X-035F	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
241	Penetration Flange Bolting X-039A	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
242	Penetration Flange Bolting X-039B	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
243	Electrical Penetration Bolting X-100A (X-100A)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
244	Electrical Penetration Bolting X-100B (X-102A)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
245	Electrical Penetration Bolting (X-100C)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
246	Electrical Penetration Bolting (X-100E)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
247	Electrical Penetration Bolting X-100F (X-103B)	E-G	E8.10	VT-1	-	-	-	-	-	VTS	N/A	
248	Electrical Penetration Bolting X-100G (X-100G)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
249	Electrical Penetration Bolting X-101A (X-101A)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
250	Electrical Penetration Bolting X-101B (X-101B)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
251	Electrical Penetration Bolting X-101C (X-101C)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
252	Electrical Penetration Bolting X-101D (X-101D)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
253	Electrical Penetration Bolting X-101E (X-101E)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
254	Electrical Penetration Bolting X-101F (X-101F)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
255	Electrical Penetration Bolting X-102A (X-105B)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
256	Electrical Penetration Bolting X-102B (X-102B)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
257	Electrical Penetration Bolting X-102C (X-100B)	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
258	Electrical Penetration Bolting X-102D (X-105C)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
259	Electrical Penetration Bolting X-103A (X-103A)	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
260	Electrical Penetration Bolting X-103B (X-107B)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	

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					Period 1	Period 2		Period 3		Appendix F4.7		
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261	Electrical Penetration Bolting X-104A (X-104A)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
262	Electrical Penetration Bolting X-104B (X-104B)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
263	Electrical Penetration Bolting X-104C (X-104C)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
264	Electrical Penetration Bolting X-104D (X-104D)	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
265	Electrical Penetration Bolting X-104E (X-104E)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
266	Electrical Penetration Bolting X-104F (X-104F)	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
267	Electrical Penetration Bolting X-105A (X-105A)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
268	Electrical Penetration Bolting X-105D (X-105D)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
269	Electrical Penetration Bolting X-106A (X-100D)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
270	Electrical Penetration Bolting X-106B (X-106B)	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
271	South Torus Hatch Bolting Penetration X-200A	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
272	North Torus Hatch Bolting Penetration X-200B	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
273	Butterfly Valve Flange Bolting Penet. X-205C	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
274	Butterfly Valve Flange Bolting Penet. X-205D	E-G	E8.10	VT-1	-	-	-	-	-	VTS	N/A	
275	Electrical Penetration Bolting X-209A	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
276	Electrical Penetration Bolting X-209C	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
277	RHR Test Line Orifice D008B Bolting Penetration X-210A	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
278	RHR Test Line Orifice D009B Bolting Penetration X-210A	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
279	Relief Valve Flange Bolting E1100F001B Penetration X-210A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
280	Relief Valve Flange Bolting E1100F025B Penetration X-210A	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
281	RHR Blind Flange Bolting Penetration X-210A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
282	RHR Test Line Orifice D008A Bolting Penetration X-210B	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	

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					Period 1	Period 2		Period 3		Appendix F4.7		
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
283	RHR Test Line Orifice D009A Bolting Penetration X-210B	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
284	Relief Valve Flange Bolting E1100F001A Penetration X-210B	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
285	Relief Valve Flange Bolting E1100F025A Penetration X-210B	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
286	Relief Valve Flange Bolting E1100F029 Penetration X-210B	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
287	RHR Blind Flange Bolting Penetration X-210B	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
288	TWMS Spool Bolting 4055-1 Penetration X-213A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
289	TWMS Spool Bolting 4055-2 Penetration X-213A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
290	TWMS Spool Bolting 4056-1 Penetration X-213B	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
291	TWMS Spool Bolting 4056-2 Penetration X-213B	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
292	Relief Valve Flange Bolting T4804F016A Penetration X-218	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
293	Relief Valve Flange Bolting T4804F016B Penetration X-218	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
294	Relief Valve Flange Bolting E1100F030D Penetration X-223A	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
295	Relief Valve Flange Bolting E1100F030B Penetration X-223B	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
296	Relief Valve Flange Bolting E1100F030C Penetration X-223C	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
297	Relief Valve Flange Bolting E1100F030A Penetration X-223D	E-G	E8.10	VT-1	-	VTC	-	-	-	-	N/A	
298	Relief Valve Flange Bolting E2100F011B Penetration X-227A	E-G	E8.10	VT-1	-	-	-	VTC	-	-	N/A	
299	Relief Valve Flange Bolting E2100F012B Penetration X-227A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
300	Relief Valve Flange Bolting E2100F032B Penetration X-227A	E-G	E8.10	VT-1	-	-	VTC	-	-	-	N/A	
301	Relief Valve Flange Bolting E2100F011A Penetration X-227B	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
302	Relief Valve Flange Bolting E2100F012A Penetration X-227B	E-G	E8.10	VT-1	VTC	-	-	-	-	-	N/A	
303	Relief Valve Flange Bolting E2100F032A Penetration X-227B	E-G	E8.10	VT-1	VTC	-	VTC	-	-	-	N/A	
304	Vacuum Breaker-Electrical Penetration Bolting X-228A	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	



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Item	Exam Area Identification	Cat.	Code	NDE Method	Period 1		Period 2		Period 3		Relief Request	Remarks
					RF07	RF08	RF09	RF10	RF11	RF12		
305	Vacuum Breaker-Electrical Penetration Bolting X-228B	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
306	Vacuum Breaker-Electrical Penetration Bolting X-228C	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
307	Vacuum Breaker-Electrical Penetration Bolting X-228D	E-G	E8.10	VT-1	-	-	-	-	VTC	-	N/A	
<b>E8.20</b>												
308	Drywell Head Flange Bolting X-001A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
309	South Equioment Hatch Bolting X-001B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
310	North Equioment Hatch Bolting X-001C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
311	Drywell Personnel Airlock Bolting X-001D	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
312	Reactor Vessel Stablization Manhole Bolting X-001E	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
313	Reactor Vessel Stablization Manhole Bolting X-001F	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
314	Reactor Vessel Stablization Manhole Bolting X-001G	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
315	Reactor Vessel Stablization Manhole Bolting X-001H	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
316	Reactor Vessel Stablization Manhole Bolting X-001J	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
317	Reactor Vessel Stablization Manhole Bolting X-001K	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
318	Reactor Vessel Stablization Manhole Bolting X-001L	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
319	Reactor Vessel Stablization Manhole Bolting X-001M	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
320	CRD Hatch Bolting X-006	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
321	Penetration Flange Rupture Disk Bolting X-018	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
322	Penetration Flange Rupture Disk Bolting X-019	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
323	Spectacle Flange Bolting X-020	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
324	TIP Penetration Bolting X-035A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
325	TIP Penetration Bolting X-035B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
326	TIP Penetration Bolting X-035C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40

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					Period 1	Period 2		Period 3				
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
327	TIP Penetration Bolting X-035D	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
328	TIP Penetration Bolting X-035E	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
329	TIP Penetration Bolting X-035F	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
330	Penetration Flange Bolting X-039A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
331	Penetration Flange Bolting X-039B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
332	Electrical Penetration Bolting X-100A (X-100A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
333	Electrical Penetration Bolting X-100B (X-102A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
334	Electrical Penetration Bolting (100C)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
335	Electrical Penetration Bolting (X-100E)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
336	Electrical Penetration Bolting X-100F (X-103B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
337	Electrical Penetration Bolting X-100G (X-100G)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
338	Electrical Penetration Bolting X-101A (X-101A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
339	Electrical Penetration Bolting X-101B (X-101B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
340	Electrical Penetration Bolting X-101C (X-101C)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
341	Electrical Penetration Bolting X-101D (X-101D)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
342	Electrical Penetration Bolting X-101E (X-101E)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
343	Electrical Penetration Bolting X-101F (X-101F)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
344	Electrical Penetration Bolting X-102A (X-105B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
345	Electrical Penetration Bolting X-102B (X-102B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
346	Electrical Penetration Bolting X-102C (X-100B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
347	Electrical Penetration Bolting X-102D (X-105C)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
348	Electrical Penetration Bolting X-103A (X-103A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40

# Component Examination Schedule

ISI-NDE Program  
Rev.5; Change 0  
Appendix F4.7

				Period 1	Period 2		Period 3					
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
349	Electrical Penetration Bolting X-103B (X-107B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
350	Electrical Penetration Bolting X-104A (X-104A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
351	Electrical Penetration Bolting X-104B (X-104B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
352	Electrical Penetration Bolting X-104C (X-104C)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
353	Electrical Penetration Bolting X-104D (X-104D)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
354	Electrical Penetration Bolting X-104E (X-104E)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
355	Electrical Penetration Bolting X-104F (X-104F)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
356	Electrical Penetration Bolting X-105A (X-105A)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
357	Electrical Penetration Bolting X-105D (X-105D)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
358	Electrical Penetration Bolting X-106A (X-100D)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
359	Electrical Penetration Bolting X-106B (X-106B)	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
360	South Torus Hatch Bolting Penetration X-200A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
361	North Torus Hatch Bolting Penetration X-200B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
362	Butterfly Valve Flange Bolting Penet. X-205C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
363	Butterfly Valve Flange Bolting Penet. X-205D	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
364	Electrical Penetration Bolting X-209A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
365	Electrical Penetration Bolting X-209C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
366	RHR Test Line Orifice D008B Bolting Penetration X-210A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
367	RHR Test Line Orifice D009B Bolting Penetration X-210A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
368	Relief Valve Flange Bolting E1100F001B Penetration X-210A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
369	Relief Valve Flange Bolting E1100F025B Penetration X-210A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
370	RHR Blind Flange Bolting Penetration X-210A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40

# Component Examination Schedule

ISI-NDE Program  
Rev.5; Change 0  
Appendix F4.7

					Period 1	Period 2			Period 3		Appendix F4.7	
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
371	RHR Test Line Orifice D008A Bolting Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
372	RHR Test Line Orifice D009A Bolting Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
373	Relief Valve Flange Bolting E1100F001A Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
374	Relief Valve Flange Bolting E1100F025A Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
375	Relief Valve Flange Bolting E1100F029 Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
376	RHR Blind Flange Bolting Penetration X-210B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
377	TWMS Spool Bolting 4055-1 Penetration X-213A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
378	TWMS Spool Bolting 4055-2 Penetration X-213A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
379	TWMS Spool Bolting 4056-1 Penetration X-213B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
380	TWMS Spool Bolting 4056-2 Penetration X-213B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
381	Relief Valve Flange Bolting T4804F016A Penetration X-218	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
382	Relief Valve Flange Bolting T4804F016B Penetration X-218	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
383	Relief Valve Flange Bolting E1100F030D Penetration X-223A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
384	Relief Valve Flange Bolting E1100F030B Penetration X-223B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
385	Relief Valve Flange Bolting E1100F030C Penetration X-223C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
386	Relief Valve Flange Bolting E1100F030A Penetration X-223D	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
387	Relief Valve Flange Bolting E2100F011B Penetration X-227A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
388	Relief Valve Flange Bolting E2100F012B Penetration X-227A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
389	Relief Valve Flange Bolting E2100F032B Penetration X-227A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
390	Relief Valve Flange Bolting E2100F011A Penetration X-227B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
391	Relief Valve Flange Bolting E2100F012A Penetration X-227B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
392	Relief Valve Flange Bolting E2100F032A Penetration X-227B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40

# Component Examination Schedule

ISI-NDE Program  
Rev.5; Change 0  
Appendix F4.7

				Period 1	Period 2		Period 3					
Item	Exam Area Identification	Cat.	Code	NDE Method	RF07	RF08	RF09	RF10	RF11	RF12	Relief Request	Remarks
393	Vacuum Breaker-Electrical Penetration Bolting X-228A	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
394	Vacuum Breaker-Electrical Penetration Bolting X-228B	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
395	Vacuum Breaker-Electrical Penetration Bolting X-228C	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
396	Vacuum Breaker-Electrical Penetration Bolting X-228D	E-G	E8.20	Torque/Tension	-	-	-	-	-	-	CISI-007	To Be Inspected In Accordance With E8.10 and Tested Per E9.40
<b>E9.10</b>												
397	Pressure Retaining Boundary	E-P	E9.10	VT-2	-	-	-	-	-	-		After repair, modification or replacement.
<b>E9.20</b>												
398	Containment Penetration Bellows	E-P	E9.20	App. J	-	-	-	-	-	-		10CFR50.AppendixJ
<b>E9.30</b>												
399	Airlock	E-P	E9.30	App. J	-	-	-	-	-	-		10CFR50.AppendixJ
<b>E9.40</b>												
400	Seals and Gaskets	E-P	E9.40	App. J	-	-	-	-	-	-		10CFR50.AppendixJ

*GS = General Inspection Scheduled    GC = General Inspection Complete    VTS = VT Inspection Scheduled    VTC = VT Inspection Complete*  
*VTPC = VT Inspection Partical Complete*

## **SECTION 9**

### **SECTION XI REPAIR/REPLACEMENT NIS-2 FORMS INDEX**

## 9.0 NIS-2 DATA REPORT INDEX

LOG No.	WORK PKG. No.	COMPONENT No.	ASME CLASS	DESCRIPTION
04-010	F523040100	E1151C001A	3	Replace Pump.
04-012C	000Z040909	R3000A003	3	Modify Chemistry Sampling Connections per EDP-32343.
04-012D	000Z040910	R3000A004	3	Modify Chemistry Sampling Connections per EDP-32343.
04-014	000Z034614	C1102D (VARIOUS LOCATIONS)	1	Refurbish CRDM's removed during RF10 for installation in RF11.
05-002	000Z050309 000Z050310 000Z050311	T4700B006 T4700B007 T4700B010	2	Install lifting lugs on Drywell Cooler heads.
05-003	VARIOUS	T4700B001 T4700B002 T4700B003 T4700B004 T4700B006 T4700B007 T4700B010	2	Install replacement (longer) fasteners.
05-005	000Z050407 THRU 000Z050418	C51N001A - D C51N002A - H	1	Install replacement SRM/IRM Dry Tubes.
05-006	A498060100 A519060100	VARIOUS MECHANICAL SNUBBERS	N/A	Mechanical Snubber Refurbishment.
05-007	A497060100 A514060100	VARIOUS HYDRAULIC SNUBBERS	N/A	Hydraulic Snubber Refurbishment.
05-008	B273060200	B2104F013A - R	1	Refurbish Main Steam Safety Relief Valves for installation in RF11.
05-009	VARIOUS	B2104F013A - R	1	Replace Main Steam Safety Relief Valve Pilots and main bodies in RF11.
05-010	VARIOUS	C1102D (VARIOUS LOCATIONS)	1	Install refurbished CRDM at select locations during RF11.
05-012	H605040100	B2100F080C	2 (D+)	Install replacement Stem/disc assembly, cage and seat ring.

Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
Fermi 2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport, MI 48166  
Commercial Service Date: 1-23-88 NB No. 21085 (RPV)

LOG No.	WORK PKG. No.	COMPONENT No.	ASME CLASS	DESCRIPTION
05-013	000Z051979	N30-3256-G51 N30-3256-G55 N30-3256-G57	N/A1	Install 3 replacement mechanical snubbers in Drywell.
05-014	VARIOUS	T4700B001 T4700B002 T4700B003 T4700B004 T4700B010	2	Install replacement fasteners and plug leaking tube in T4700B003.
05-015	000Z044256	P44F402B	3	Install replacement Stem and Disc Assembly.
05-016	000Z042033	R3000F140B	3	Install replacement Disc.
05-017A	000Z043607	E1100F031A	2	Install replacement check valve per ERE-33795.
05-017B	000Z050737	E1100F031B	2	Install replacement check valve per ERE-33795.
05-020	000Z040063	E5150F019	2	Install replacement Valve per EDP-32366.
05-023	000Z050487 000Z053190	B3105F031A	1	Install replacement Bonnet Bolting material.
05-024	000Z042035	R3000F140D	3	Install replacement valve.
05-025	000Z043604	R30F401	3	Install replacement stem/disc assembly.
06-001	000Z042034	R3000F140C	3	Install refurbished replacement disc.
06-002	VARIOUS	T4700B004	2	Replace Drywell Cooler T4700B004 per EDP-33690.
06-005	000Z031475	R3000F139B	3	Replace valve.
06-009	H599040100	B2100F080A	2 (D+)	Install replacement Stem/disc assembly, cage and seat ring.
06-010	H600040100	B2100F080B	2 (D+)	Install replacement Stem/disc assembly, cage and seat ring.
06-012	A035060100	T2300F410	2	Restore damaged seal weld on valve.
06-013	000Z051606	T4803F602	2	Install replacement shaft and disc

Detroit Edison Co., 2000 2nd Ave., Detroit, MI 48226  
Fermi 2 Nuclear Power Plant, 6400 N. Dixie Hwy., Newport, MI 48166  
Commercial Service Date: 1-23-88 NB No. 21085 (RPV)



LOG No.	WORK PKG. No.	COMPONENT No.	ASME CLASS	DESCRIPTION
				assembly.
06-014	000Z061322	B2103A001C	3	Remove/Blend Grind Arc Strike.
06-015	000Z061423	B1100G000A	1	Clean damaged threads on RPV closure studs and blend grind several gouges in closure head holes.
06-016	F011060100	T2302X200A	2	Replace damaged nuts on SE Torus hatch.
06-017	F032060100	B1100Y000	1	Replaced 2 short studs in RPV Head Vent Line.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**04-010**

1. Owner <u>Detroit Edison Company</u>	Date <u>November 21, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 5</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>T &amp; B N5 —3 (Residual Heat Removal Service Water (RHRSW) Pump E1151C001A</u>	
5. (a) Applicable Construction Code <u>ASME III, 19 74 Edition (Pumps)</u>	
<u>Class 3 19 71 Edition</u>	<u>71</u> Addenda <u>N/A</u> Code Case
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements	<u>1992-92 Addenda</u>

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
E1151C001A	Goulds Pumps	N30123-1	N/A	N/A	1975	Replaced	Y
E1151C001A	Enertech	11343	N/A	N/A	2004	Replacement	Y

7. Description of Work Replace existing RHRSW Pump with a new pump manufactured to the original design requirements per ERE 32781. Components replaced included all pump columns, column bolting, and pump assembly with stuffing box. The discharge head/flange portion was not replaced.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒   
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Replacement components / materials installed included the following: Pump Assembly Serial No. #11343 procured per PO# 384407, Pump Column Assemblies, Serial No. 997, 1002, 1005, 1006, 1007, 1008, 1009, and 1010, SA106 Grade B / SA516 Grade 70, were procured per PO# 384311, Pump Bolting Material, SA193 Grade B7, Procured per PO# 384317 and PO# 384407

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B -3 to be supplemented by Owners Section XI Program 04-010

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date November 21, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 06-24-04 to 11-21-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions MT610  
National Board, State, Province, and  
Endorsements

Date Nov. 21 20 05

(10/94)

For complete work package, see Work Request F523040100

**FORM NPV-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES\***  
As Required by the Provisions of the ASME Code, Section III, Division 1

1. Manufactured and certified by Enertech, A Div. of Curtiss-Wright Flow Control Corp.; 2950 Birch St.; Brea, CA 92821  
(name and address of N Certificate Holder)

2. Manufactured for Detroit Edison; 2000 2nd Avenue; Detroit, MI 48226-1279  
(name and address of Purchaser)

3. Location of installation Detroit Edison; Fermi EF2; 6400 Dixie Hwy.; Newport, MI 48166  
(name and address)

4. Model No., Series No., or Type VITZ-SD12"x18" HMC Drawing MD21146 Rev. B CRN N/A

5. ASME Code, Section III, Division 1: 1971 W72 3 none  
(edition) (addenda date) (class) (Code Case no.)

6. Pump or valve Pump Nominal inlet size 18 Outlet size 12  
(in.) (in.)

7. Material: Body \* Bonnet N/A Disk N/A Bolting N/A

[illegible]

\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

Certificate Holder's Serial No. 113438. Design conditions 150 psi 104 °F or valve pressure class N/A (1)  
(pressure) (temperature)9. Cold working pressure N/A psi at 100°F10. Hydrostatic test N/A psi. Disk differential test pressure N/A psi

11. Remarks: Qty. 1, Enertech Project Number 840027 Tag Number 6026 (Serial No. 11343)

\* Spiders: (S/N 4930 thru 4937) SA516 Gr. 70

\* Stuffing Box: (S/N 5878) SA216 Gr. WCB

\* Top Intern. Bowl, Intern. Bowl: (S/N 5992, 5993) SA216 Gr. WCB

\* Top Column Assy, Intern. Column, Bott. Column Assy. (S/N 997, 1005 thru 1010, 1002) SA106 Gr. B/SA516 Gr. 70

## CERTIFICATION OF DESIGN

Design Specification certified by Michael S. Williams P.E. State MI Reg. no. 31686  
Design Report certified by N/A P.E. State N/A Reg. no. N/A

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump or valve conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2825 Expires 10/11/05Date 7/6/04 Name Enertech Signed Loretta Anaya  
(N Certificate Holder) (authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of California and employed by HSB, CT of Connecticut have inspected the pump, or valve, described in this Data Report on 7-6-04, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III, Division 1.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 7-6-04 Signed David R. [Signature] Commissions LB 9455N CA1526  
(Authorized Inspector) [Nat'l. Bd. (incl. endorsements) and state or prov. and no.]

(1) For manually operated valves only.

04-010  
3 of 5

# FORM N-2 N OR NPT CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL NUCLEAR PARTS AND APPURTENANCES\*

As Required by the Provisions of the ASME Code, Section III, Division 1  
Not To Exceed One Day's Production

Pg 1 of 2

1. Manufactured and certified by Enertech, A Div. of Curtiss-Wright Flow Control Corp.; 2950 Birch St.; Brea, CA 92821  
(name and address of certificate holder)

2. Manufactured for Detroit Edison; 2000 2nd Avenue; Detroit, MI 48226-1279  
(name and address of purchaser)

3. Location of installation Detroit Edison; Fermi EF2; 6400 Dixie Hwy.; Newport, MI 48166  
(name and address)

4. Type D1360 Rev. G SA-106-B/SA-516-70 60,000 / 70,000 PSI N/A 2003  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)

5. ASME Code, Section III: 1971 W 72 3 None  
(edition) (addenda) (class) (Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(No.)

7. Remarks: Qty. 1 Column, Top (P/N: 641) for Goulds Model VITX-SD 12x18HMC 2-Stage Pump -  
Enertech Item No.: C9176N, Project No.: 840010

8. Nom. thickness (in.) .330 Min. design thickness (in.) .230 Dia. ID (ft. & in.) 12.0" Length overall (ft. & in.) 1'-5 1/2"

9. When applicable, Certificate Holders' data reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. In Numerical Order	Part or Appurtenance Serial Number	National Board Number In Numerical Order
(1) 997	N/A	(26)	
(2)		(27)	
(3)		(28)	
(4)		(29)	
(5)		(30)	
(6)		(31)	
(7)		(32)	
(8)		(33)	
(9)		(34)	
(10)		(35)	
(11)		(36)	
(12)		(37)	
(13)		(38)	
(14)		(39)	
(15)		(40)	
(16)		(41)	
(17)		(42)	
(18)		(43)	
(19)		(44)	
(20)		(45)	
(21)		(46)	
(22)		(47)	
(23)		(48)	
(24)		(49)	
(25)		(50)	

10. Design pressure 150 psi Temp. 104 °F. Hydro. test pressure 225 at temp. °F.  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 X 11, (2) information in items  
on this data report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of

## FORM N-2 (back)

Mfr. Serial No. 997

## CERTIFICATE OF DESIGN

Design specifications certified by Michael S. Williams P. E. state MI Reg. no. 31686  
(when applicable)  
Design report\* certified by N/A P. E. state \_\_\_\_\_ Reg. no. \_\_\_\_\_  
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Top Column  
conform to the rules of construction of the ASME Code, Section III.

NPT Certificate of Authorization no. N-2827 Expires October 11, 2005  
Date 3/5/04 Name Enertech, A Div. of Curtiss-Wright Flow Control Corp. Signed Shretta Amaya  
(NPT Certificate Holder) (authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of California and employed by HSB CT  
of Connecticut have inspected these items described in this data report on 2-27-04, and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has been authorized for stamping on the date shown above.  
By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 3-5-04 Signed Tim F. Reyes Commissions CA1526 NB9435N  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state or prov. and no.)

04-010  
4 of 5

FORM N-2 N OR NPT CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*

As Required by the Provisions of the ASME Code, Section III, Division 1  
Not To Exceed One Day's Production

Page 1 of 2

1. Manufactured and certified by Enertech, A Div. of Curtiss-Wright Flow Control Corp.; 2950 Birch St.; Brea, CA 92821  
(name and address of certificate holder)

2. Manufactured for Detroit Edison; 2000 2nd Avenue; Detroit, MI 48226-1279  
(name and address of purchaser)

3. Location of installation Detroit Edison; Fermi EF2; 6400 Dixie Hwy.; Newport, MI 48166  
(name and address)

4. Type D1360 Rev. G SA-106-B/SA-516-70 60,000 / 70,000 PSI N/A 2003  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)

5. ASME Code, Section III: 1971 W 72 3 None  
(edition) (addenda) (class) (Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(No.)

7. Remarks: Qty. 6 Column, Intermediate (P/N: 642) for Goulds Model VITX-SD 12x18HMC 2-Stage Pump -  
Enertech Item No.: C9177N. Project No.: 840010

8. Nom. thickness (in.) .330 Min. design thickness (in.) .230 Dia. ID (ft. & in.) 12.0" Length overall (ft. & in.) 4'-11"

9. When applicable, Certificate Holders' data reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. in Numerical Order	Part or Appurtenance Serial Number	National Board Number in Numerical Order
(1) 1005 ✓	N/A	(26)	
(2) 1006 ✓	N/A	(27)	
(3) 1007 ✓	N/A	(28)	
(4) 1008 ✓	N/A	(29)	
(5) 1009 ✓	N/A	(30)	
(6) 1010 ✓	N/A	(31)	
(7)		(32)	
(8)		(33)	
(9)		(34)	
(10)		(35)	
(11)		(36)	
(12)		(37)	
(13)		(38)	
(14)		(39)	
(15)		(40)	
(16)		(41)	
(17)		(42)	
(18)		(43)	
(19)		(44)	
(20)		(45)	
(21)		(46)	
(22)		(47)	
(23)		(48)	
(24)		(49)	
(25)		(50)	

10. Design pressure 150 psi Temp. 104 °F. Hydro. test pressure 225 at temp. °F.  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 X 11, (2) information in items 1 and 2 on this data report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of



## FORM N-2 (back)

Mfr. Serial No. 1005 thru 1010

## CERTIFICATE OF DESIGN

Design specifications certified by Michael S. Williams P. E. state MI Reg. no. 31686  
 (when applicable)  
 Design report\* certified by N/A P. E. state \_\_\_\_\_ Reg. no. \_\_\_\_\_  
 (when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Intermediate Column  
 conform to the rules of construction of the ASME Code, Section III.

NPT Certificate of Authorization no. N-2827 Expires October 11, 2005  
 Date 3/5/04 Name Enertech, A Div. of Curtiss-Wright Flow Control Corp. Signed Loretta Quaya  
 (NPT Certificate Holder) (authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of California and employed by HSB CT  
 of Connecticut have inspected these items described in this data report on 2-27-04, and state that to the

best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 3-5-04 Signed Cecil F. Reys Commissions CA 1520 NB 94351  
 (Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state or prov. and no.)

04-010  
5 of 5

# FORM N-2 N OR NPT CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL NUCLEAR PARTS AND APPURTENANCES\*

As Required by the Provisions of the ASME Code, Section III, Division 1  
Not To Exceed One Day's Production

Pg 1 of 2

1. Manufactured and certified by Enertech, A Div. of Curtiss-Wright Flow Control Corp.; 2950 Birch St.; Brea, CA 92821  
(name and address of certificate holder)

2. Manufactured for Detroit Edison; 2000 2nd Avenue; Detroit, MI 48226-1279  
(name and address of purchaser)

3. Location of installation Detroit Edison; Fermi EF2; 6400 Dixie Hwy.; Newport, MI 48166  
(name and address)

4. Type D1360 Rev. G SA-106-B/SA-516-70 60,000 / 70,000 PSI N/A 2003  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)

5. ASME Code, Section III: 1971 W 72 3 None  
(edition) (addenda) (class) (Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(No.)

7. Remarks: Qty. 1 Column, Bottom (P/N: 644) for Goulds Model VITX-SD 12x18HMC 2-Stage Pump -  
Enertech Item No.: C9178N, Project No.: 840010

8. Nom. thickness (in.) .330 Min. design thickness (in.) .230 Dia. ID (ft. & in.) 12.0" Length overall (ft. & in.) 4'-11"

9. When applicable, Certificate Holders' data reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. In Numerical Order	Part or Appurtenance Serial Number	National Board Number In Numerical Order
(1) <u>1002</u>	<u>N/A</u>	(26)	
(2)		(27)	
(3)		(28)	
(4)		(29)	
(5)		(30)	
(6)		(31)	
(7)		(32)	
(8)		(33)	
(9)		(34)	
(10)		(35)	
(11)		(36)	
(12)		(37)	
(13)		(38)	
(14)		(39)	
(15)		(40)	
(16)		(41)	
(17)		(42)	
(18)		(43)	
(19)		(44)	
(20)		(45)	
(21)		(46)	
(22)		(47)	
(23)		(48)	
(24)		(49)	
(25)		(50)	

10. Design pressure 150 psi Temp. 104 °F. Hydro. test pressure 225 at temp. °F.  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 X 11, (2) information in items is included on this data report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of

## FORM N-2 (back)

Mfr. Serial No. 1002

## CERTIFICATE OF DESIGN

Design specifications certified by Michael S. Williams P. E. state MI Reg. no. 31686  
 (when applicable)  
 Design report\* certified by N/A P. E. state \_\_\_\_\_ Reg. no. \_\_\_\_\_  
 (when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Intermediate Column  
 conform to the rules of construction of the ASME Code, Section III.

NFT Certificate of Authorization no. N-2827 Expires October 11, 2005  
 Date 3/5/04 Name Enertech, A Div. of Curtiss-Wright Flow Control Corp. Signed Loretta Anaya  
 (NFT Certificate Holder) (authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of California and employed by HSB CT  
 of Connecticut have inspected these items described in this data report on 2-27-04 and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has been authorized for stamping on the date shown above.  
 By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 2-5-04 Signed Circle F. Reiss Commissions CA1526 NB9435N  
 (Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**04-012C**

1. Owner <u>Detroit Edison Company</u>	Date <u>November 16, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 1</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>T &amp; B No. 18 Emergency Diesel Generator #13 Fuel Oil System</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 3</u> <u>19</u> <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R3000A003	Graver Tank	60907N-3	8229	N/A	1977	Replacement	Y

7. Description of Work Modify Storage tank by installing sampling taps at various locations and install a modified cover to support Chemistry sampling activities as detailed in EDP-32343.

8. Tests Conducted: Hydrostatic [ ] Pneumatic [ ] Nominal Operating Pressure [X] Ref. Code Case N-416-2  
Other [ ] Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement material consisting of :
- 18" 150# Blind Flange, ASME III Class 3, procured per PO# 389352, SA-105, HT # 3216ANF
  - 3" ASME III Class 2 Sch 40 Pipe procured per PO# 402420, SA-106, HT# A80004.
  - 3" 150# ASME III Class 2 Raised Face Flange procured per PO#402420, SA 105, HT# A24
  - 3" 150# ASME III Class 2 Blind Flange procured per PO# 359180, SA 105, HT# S1210
  - (8) - 5/8" Nuts procured per PO# 892857, SA194 Grade 2H, HT# J269
  - (8) - 5/8" studs procured per PO#898850, SA193 Grade B7, HT#P123
  - Additional ASME material installed <1" NPT is detailed in work request.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 18 to be supplemented by Owners Section XI Program # 04-012C

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date November 16, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 5-17-04 to 11-18-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mandula  
Inspector's Signature

Commissions MI 610  
National Board, State, Province, and  
Endorsements

Date Nov. 18 20 05

(10/94)

Reference WR # 000Z040909 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**04-012D**

1. Owner <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Date <u>March 16, 2006</u> Sheet <u>1 of 1</u> Unit <u>2</u>
2. Plant <u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Deco Maintenance Repair Organization P.O. No., Job No., etc. Type Code Symbol <u>N/A</u> Stamp Authorization No. <u>N/A</u> Expiration Date <u>N/A</u>
3. Work Performed by <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address	
4. Identification of System <u>T &amp; B No. 16 Emergency Diesel Generator #14 Fuel Oil System</u>	
5. (a) Applicable Construction Code <u>ASME III</u> Class <u>3</u> 19 <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case (b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R3000A004	Graver Tank	60907N-4	8230	N/A	1977	Replacement	Y

7. Description of Work Modify Storage tank by installing sampling taps at various locations and install a modified cover to support Chemistry sampling activities as detailed in EDP-32343.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Ref. Code Case N-416-2.  
 Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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.

9. Remarks Replacement material consisting of :
- 18" 150# Blind Flange, ASME III Class 3, Previously installed on EDG #13 tank, R3000A004.
  - 3" ASME III Class 2 Sch 40 Pipe procured per PO# 402420, SA-106, HT# A80004.
  - 3" 150# ASME III Class 2 Raised Face Flange procured per PO#394694, SA 105, HT# S1063
  - 3" 150# ASME III Class 2 Blind Flange procured per PO# 357114, SA 105, HT# S1251
  - (8) - 5/8" Nuts procured per PO# 892857, SA194 Grade 2H, HT# J269
  - (8) - 5/8" studs procured per PO#893250, SA193 Grade B7, HT#P123
  - Additional ASME material installed <1" NPT is detailed in work request.

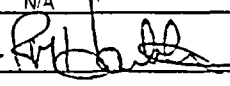
Applicable Manufacturer's Data Reports to be attached

### CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 18 to be supplemented by Owners Section XI Program # 04-012D

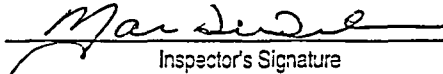
Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer  Date March 17, 2006  
Owner or Owner's Designee, Title

### CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 05-17-06 to 03-18-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

  
Inspector's Signature

Commissions MT610

National Board, State, Province, and  
Endorsements

Date March 18, 2006

(10/94)

Reference WR # 000Z040910 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**04-014**

1. Owner <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Date <u>3-16-2006</u> Sheet <u>1 of 34</u> Unit <u>2</u>
2. Plant <u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Deco Maintenance Repair Organization P.O. No., Job No., etc. Type Code Symbol Stamp <u>N/A</u> Authorization No. <u>N/A</u> Expiration Date <u>N/A</u>
3. Work Performed by <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address	
4. Identification of System <u>(N5-J120-N5-1) Control Rod Drive System</u>	
5. (a) Applicable Construction Code <u>ASME III, Class 1</u> 19 <u>71</u> Edition <u>Winter 1971</u> Addenda, <u>N/A</u> Code Case (b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992- W '92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Control Rod Drive Mechanisms	General Electric	Various	N/A	C1102D@	Various	Replacement	Yes

7. Description of Work <u>Refurbish Control Rod Drive Mechanisms for installation in RF11.</u>
8. Tests Conducted:    Hydrostatic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Nominal Operating Pressure <input type="checkbox"/> Other <input checked="" type="checkbox"/> Pressure                      psi                      Test Temp. _____ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Refurbished Control Rod Drive Mechanisms for Installation in RF-11. Replacement parts were procured per various Purchase Orders as detailed on attached sheet 2. Copies of available Code Data Reports are attached.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code Data Reports for each Control Rod Drive will be supplemented by Owners Section XI Program Plan 04-014 and work request 000Z034514 as listed on attached Sheet 2. For tracking purposes CRDM information will be maintained in N5-J120-N5-1

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MARCH 16 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 10-21-04 to 03-20-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions NI 610  
National Board, State, Province, and Endorsements

Date MARCH 20 2006

Serial No.	Rebuild WR	(1) Cylinder Tube/ Flange (480-8571)	Piston Tube	Other ASME Parts
3698	000Z034614			None
4565	000Z034614		#0673, PO # 371815	None
3160	000Z034614		#0509, PO # 371815	None
3950	000Z034614		#0513, PO # 371815	None
4585	000Z034614			None
4594	000Z034614	#5466	#0550, PO # 371815	None
6556	000Z034614	#6236		None
3345	000Z034614	#5555	#0506, PO # 371815	None
4498	000Z034614	#6192	#0512, PO # 371815	None
5222	000Z034614	#5977	#W2452N removed from SN. 4594	None
4047	000Z034614		#0623, PO # 371815	None
3320	000Z034614			None
4544	000Z034614		#0624, PO # 371815	None
3972	000Z034614	#5980	#0516, PO # 371815	None
4354	000Z034614			None
3177	000Z034614	#6161	#0564, PO # 371815	None
4377	000Z034614		#0707, PO # 371815	None
6314	000Z034614	#5984	#0353, PO # 314524	None
4287	000Z034614	#4982	#0568, PO # 371815	None
3960	000Z034614		#0667, PO # 371815	None
4540	000Z034614	#5673	#0657, PO # 371815	None
4281	000Z034614			None
3969	000Z034614	#6179	#0575, PO # 371815	None

- 1) Replacement Cylinder Tube/Flange assemblies were utilized from Shoreham Nuclear Station Control Rod Drive Mechanisms that were procured per P.O. 266443. Product Quality Certifications were supplied, however, manufacturers data reports were not supplied with these items. The CRDM's obtained were disassembled and inspected and the usable parts were put into the Fermi stock system.

04014  
2

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0506 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1625 psi. min.

( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 05/28/91

Signed GE - NEBG - NF & CM - QA  
( NPT Certificate Holder )

By

SC QA Representative

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

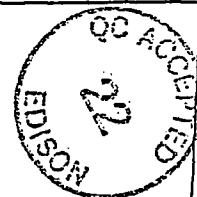
Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Bjorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/27, 1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28, 1991  
Date

Norm P. Evans  
Inspector's Signature

NC 1231, Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

(87/m)

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Positively Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

04-014  
4

**FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\***  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

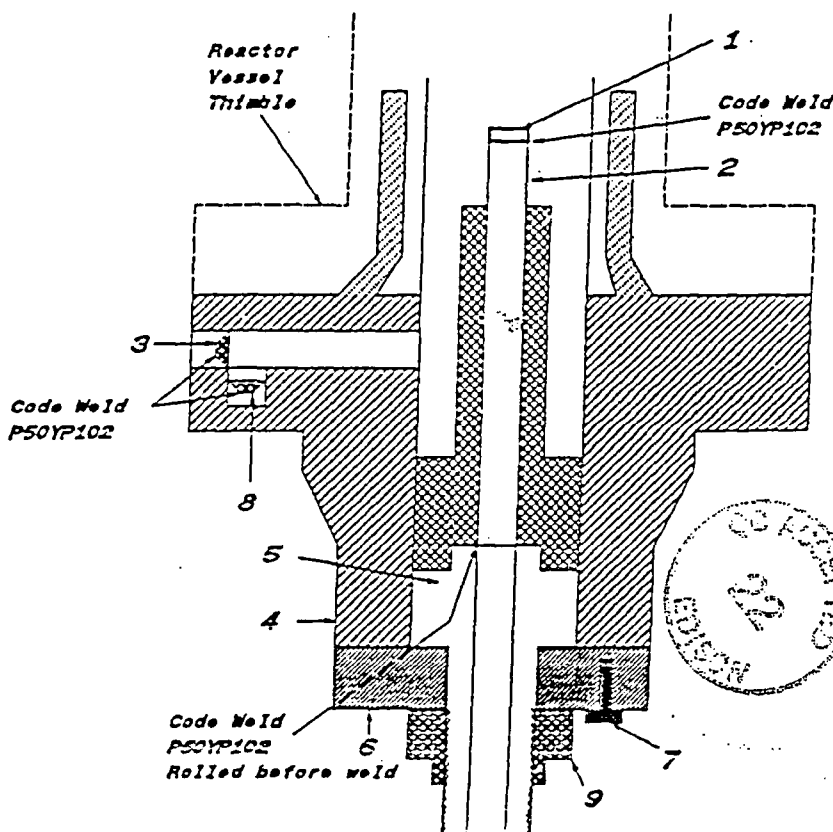
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0506 Nat'l Bd. No. N/A
  - (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
  - (b) Description of Part Inspected: Piston Tube Assembly
  - (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

*Serial # and tester stamp is an alternate method of marking.*

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B8  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1 0 1 5 . 8 4 5 0 1 2 4 3 7

04-014  
5

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0509 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III , Edition 1974 , Addenda Date W75 , Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 05/28/91 Signed GE-NEBG-NF & CM-OA By [Signature]  
( NPT Certificate Holder ) ( SC QA Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

**Certification of Design for Appurtenance**

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A5253 Rev. 1  
Design specification certified by Bjorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A5254 Rev 1  
Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018546



**Certification of Shop Inspection**

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/27, 1991 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28, 1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

( 67/96 )

1 0 1 6 . 2 . 1 3 . 0 1 2 . 4 5 . 2 .

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )

(a) \_\_\_\_\_  
(b) \_\_\_\_\_

If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_

(Material, Spec. No., T.S. Size Number)

(Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_

(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

Drop Weight \_\_\_\_\_ ft-lb  
Charpy Impact \_\_\_\_\_ ° F

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 Incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )

(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_

If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_

(Describe or attach sketch)

Drop Weight \_\_\_\_\_ ft-lb  
Charpy Impact \_\_\_\_\_ ° F

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) \_\_\_\_\_ Number \_\_\_\_\_ Dia. or Size \_\_\_\_\_ Type \_\_\_\_\_ Material \_\_\_\_\_ Thickness \_\_\_\_\_ Reinforcement Material \_\_\_\_\_ How Attached \_\_\_\_\_

17. Inspection Manholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

04014  
6

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28451  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0509 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD

2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.

3. Plug 155A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD

4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD

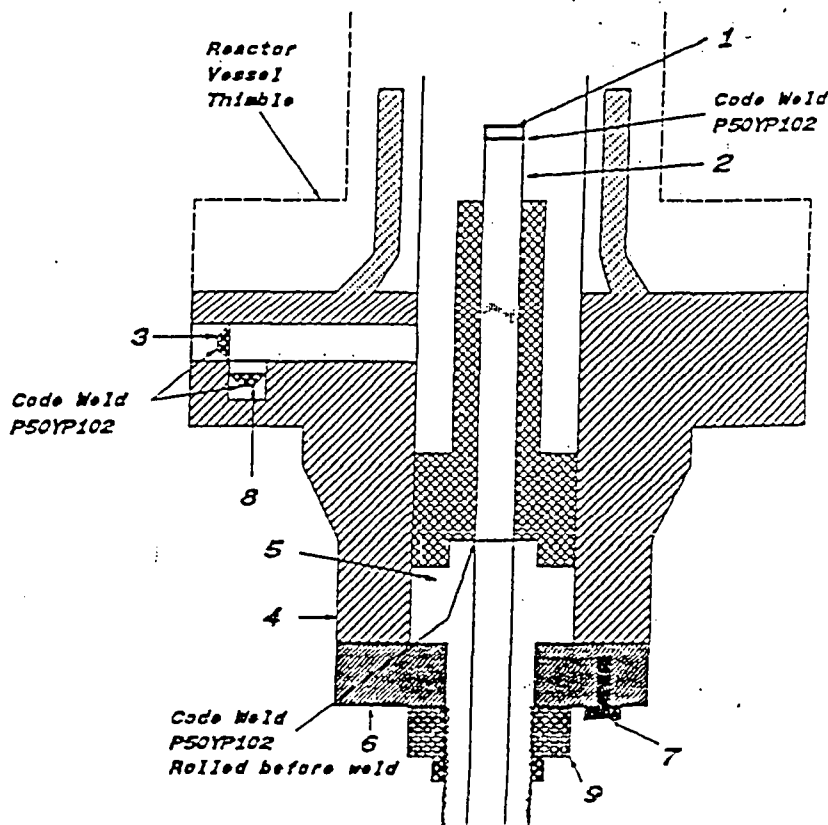
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.

6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID

7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle

8. Plug 175A7961P001  
SA182 - F304  
0.36" thick x 1.307" dia.

9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



106 6400 2418



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

04-014  
7

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0512 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D.L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1625 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 06/28/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( ASME Code Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Blom Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/28, 1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28, 1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

(67/96)

3 016 2.4 2.01 2.4 2.01

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open end weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat Treated.

2 - Use other internal or external pressure with coincident temperature when applicable.

1018 24 201 24 70

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

04014  
8

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0512 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

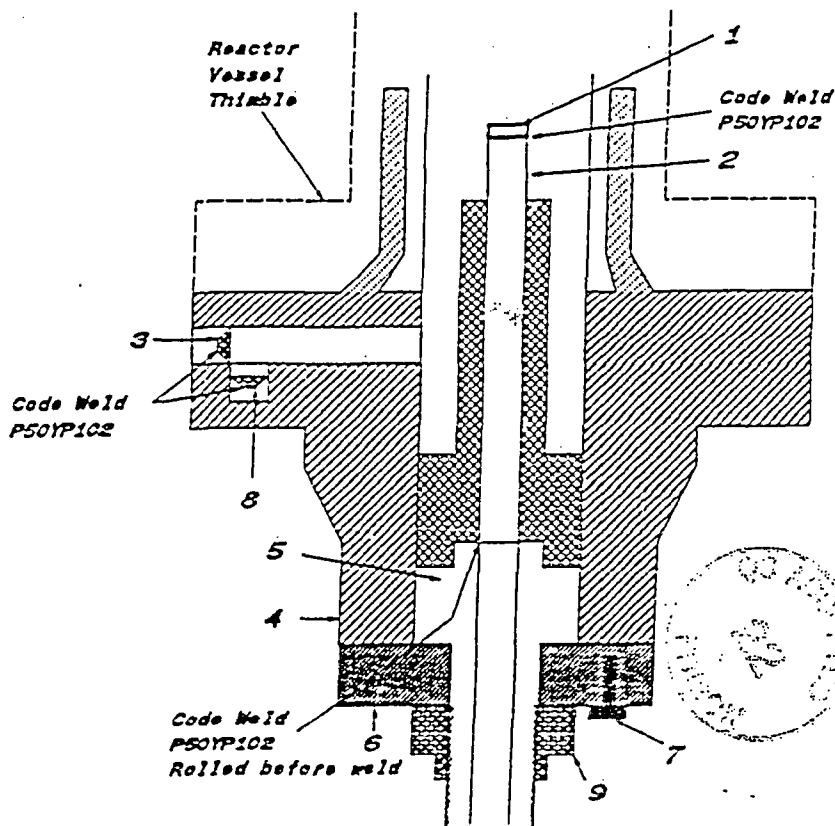
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

*Serial # and tester stamp is an alternate method of marking.*

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B5  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7951P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XA - 79 SA479  
1.30" thick x 2.62" dia.



1 0 1 5 8 4 7 9 0 1 2 3 4 5 6 7 8 9

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

04014  
9

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0513 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1625 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 06/28/91

Signed GE - NEBG - NF & CM - OA  
( NPT Certificate Holder )

By [Signature]  
( SC OR Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A5253 Rev. 1

Design specification certified by Blom Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M013646



Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/28/91 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28/91  
Date

[Signature]  
Inspector's Signature

NC 1231 Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

(67/66)

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Formed heat-treated.

2 - List other internal or external pressure with coincident temperature when applicable.

1118 2-17-201 2-17-201

04-014  
10

**FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\***  
As required by the Provision of the ASME Code Rules, Section III, Div. I

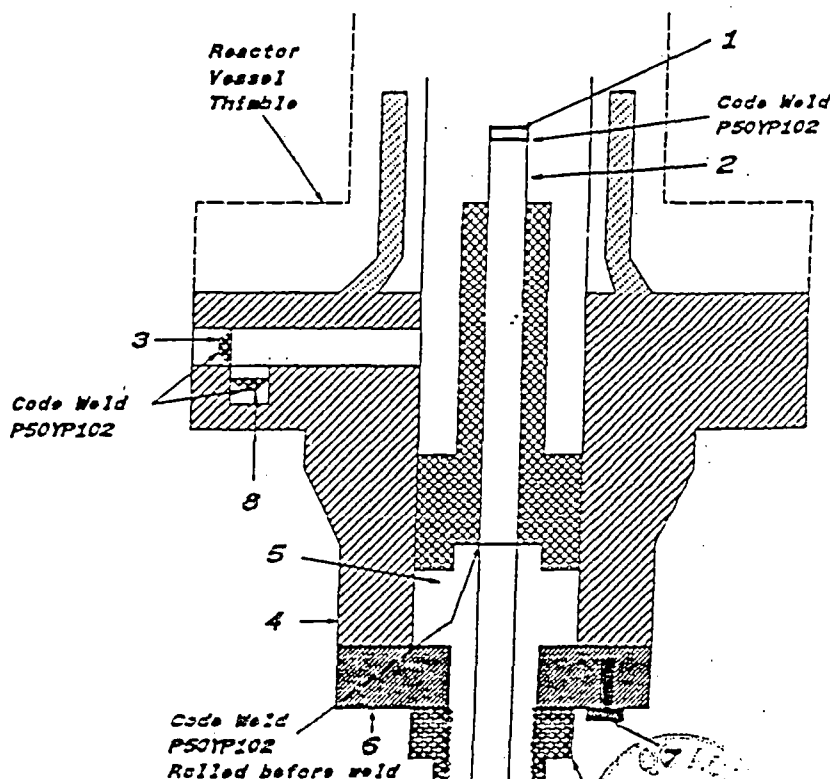
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0513 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

*Serial # and tester stamp is an alternate method of marking.*

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1018 6-1-01 2-1-7-8

04-014  
11

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Haven Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0516 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D.L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 06/28/91 Signed GE-NEBG-NF & CM-OA By [Signature]  
( NPT Certificate Holder ) ( ASME QA Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

**Certification of Design for Appurtenance**

Design information on file at: GE Company, San Jose, California

Stress analysis report on file at: GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Biom Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



**Certification of Shop Inspection**

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/28/91 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28/1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

(17/94)

1 0 1 2 3 4 5 6 7 8 9

# FORM N-2 ( Back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
Bottom, Ends ) Thickness Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 Incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
(a) Top, bottom, ends \_\_\_\_\_ Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

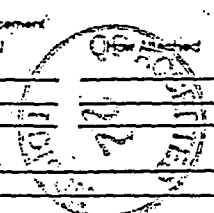
16. Nozzles: Purpose (Inlet, Outlet, Drain) \_\_\_\_\_ Number \_\_\_\_\_ Dia. or Size \_\_\_\_\_ Type \_\_\_\_\_ Material \_\_\_\_\_ Thickness \_\_\_\_\_ Reinforcement Material \_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Manholes. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded. No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - Use either internal or external pressure with coincident temperature when applicable.





04-014  
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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

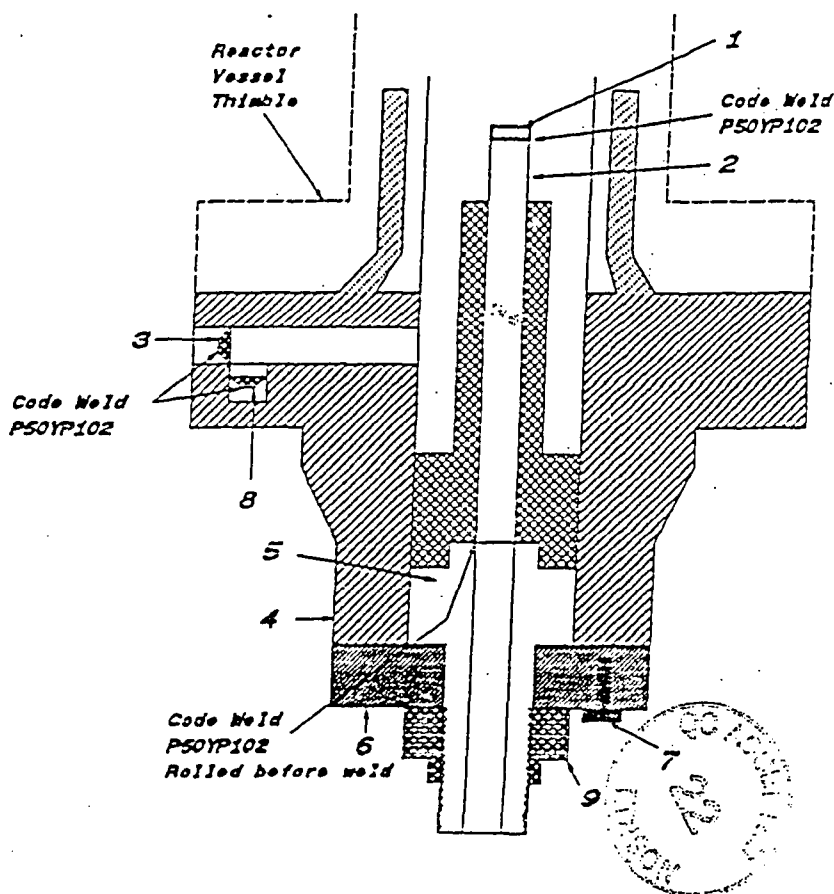
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0516 Nat'l Bd. No. N/A
  - (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
  - (b) Description of Part Inspected: Piston Tube Assembly
  - (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1018 6.4200 3.4528

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

04-014  
13

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0550 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 06/28/91 Signed GE-NEBG-NF & CM-OA By [Signature]  
( NPT Certificate Holder ) ( NPT Certificate Holder Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

**Certification of Design for Appurtenance**

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev: 1  
Design specification certified by Blom Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1  
Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



**Certification of Shop Inspection**

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/28/91, 1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28, 1991

Date

[Signature]

Inspector's Signature

NC 1231, Ohio

National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

1 0 1 5 . 5 - 4 5 - 0 1 5 5 . 1 5

(57/60)

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. if bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 Incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - Use either internal or external pressure with coincident temperature when applicable.

1018 84301 25301

04-014  
14

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

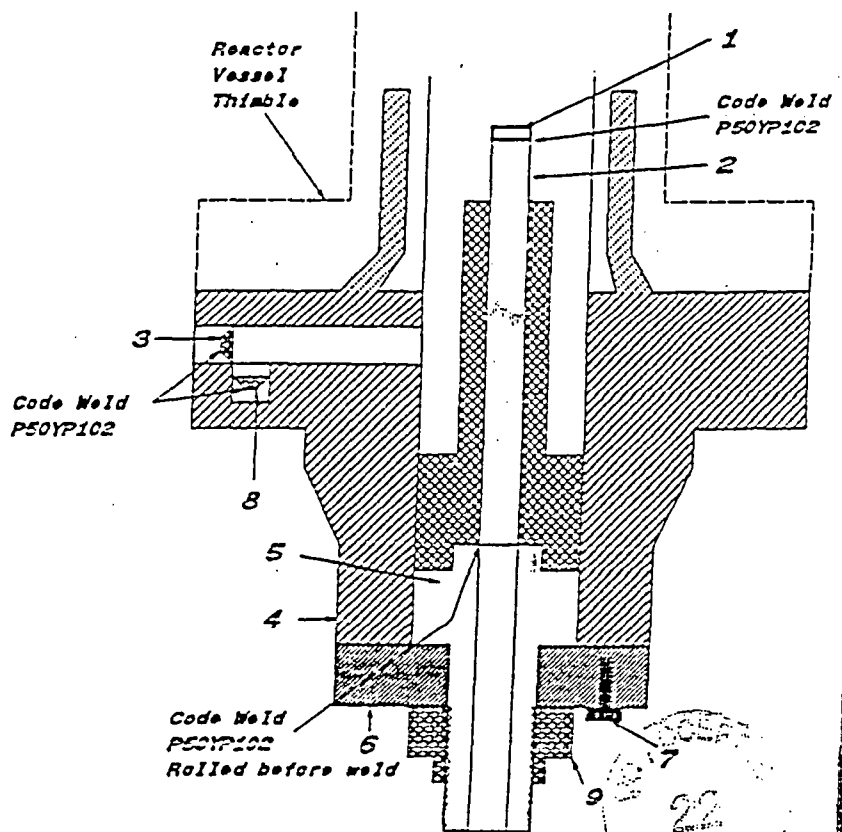
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0550 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5334P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1 0 1 6 . 6 4 2 0 1 2 1 2 5

04-014  
15

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0564 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III , Edition 1974 , Addenda Date W'75 , Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 06/28/91 Signed GE - NEBG - NF & CM - QA By [Signature]  
( NPT Certificate Holder ) ( QC QA Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

**Certification of Design for Appurtenance**

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev.  
Design specification certified by Bjorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1  
Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018546



**Certification of Shop Inspection**

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 6/27, 1991 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

6/28, 1991 [Signature]  
Date Inspector's Signature

NC 1231, Ohio  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

(5/94)

3 118 64301 25401

FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material T.S. Nominal Thickness      in. Corrosion Allowance      in. Dia.      ft.      in. Length      ft.      in.  
(Kind & Spec. No.) (Min. or Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

	Location ( Top Bottom, Ends )	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press. ( conv. or conc. )
(a)	_____	_____	_____	_____	_____	_____	_____	_____	_____
(b)	_____	_____	_____	_____	_____	_____	_____	_____	_____

If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_

(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)

Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(S, or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

	Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press: (conv. or conc.)
(a)	Top, bottom, ends	_____	_____	_____	_____	_____	_____	_____	_____
(b)	Channel	_____	_____	_____	_____	_____	_____	_____	_____
If removable, bolts used (a) _____ (b) _____ (c) _____			Other fastening _____			(Describe or attach sketch)			

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain)	Number	Die or Size	Type	Material	Thickness	Reinforcement Material	How Attached

17. Inspection Kanholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1. If Agreed Not-Treated.

2 - List prior internal or external pressure with coincident temperature when applicable.

04-014  
16

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

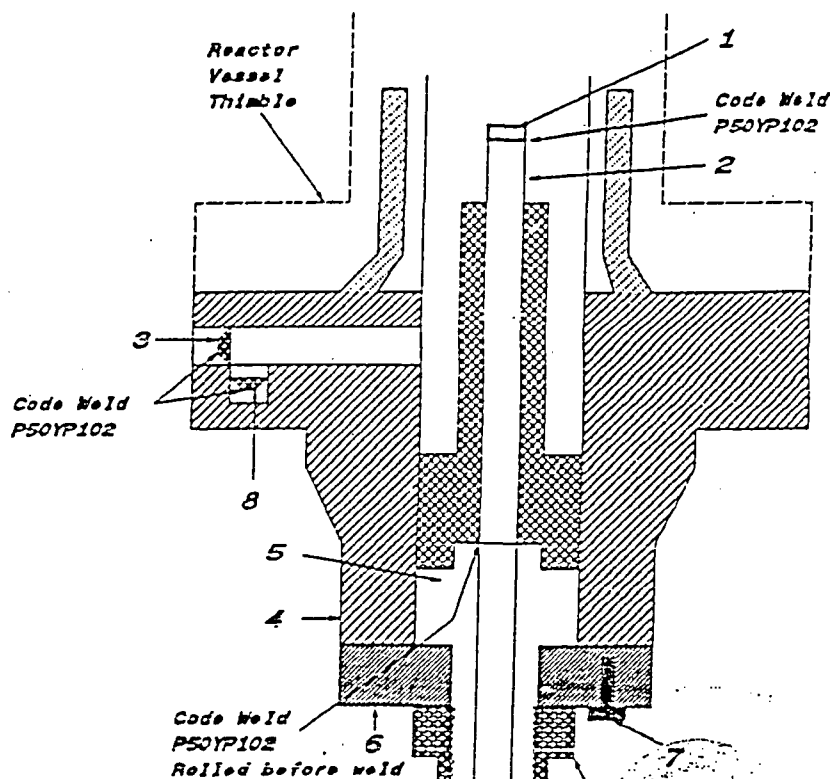
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0564 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1625 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

*Serial # and tester stamp is an alternate method of marking.*

Sheet 2 of 2

1. Cap 166B9274R001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1016 8.12.01 201.4.2

- Sheet 1 of 2

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

QC ACCEPTED  
22  
EDISON

( 67/40 )



# FORM N-2 ( back )

Items 4-8 incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)
5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)
7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)
12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - Use other internal or external pressure with coincident temperature when applicable.

1018. 8.4 8.01 2.2.5.7

04-014  
18

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

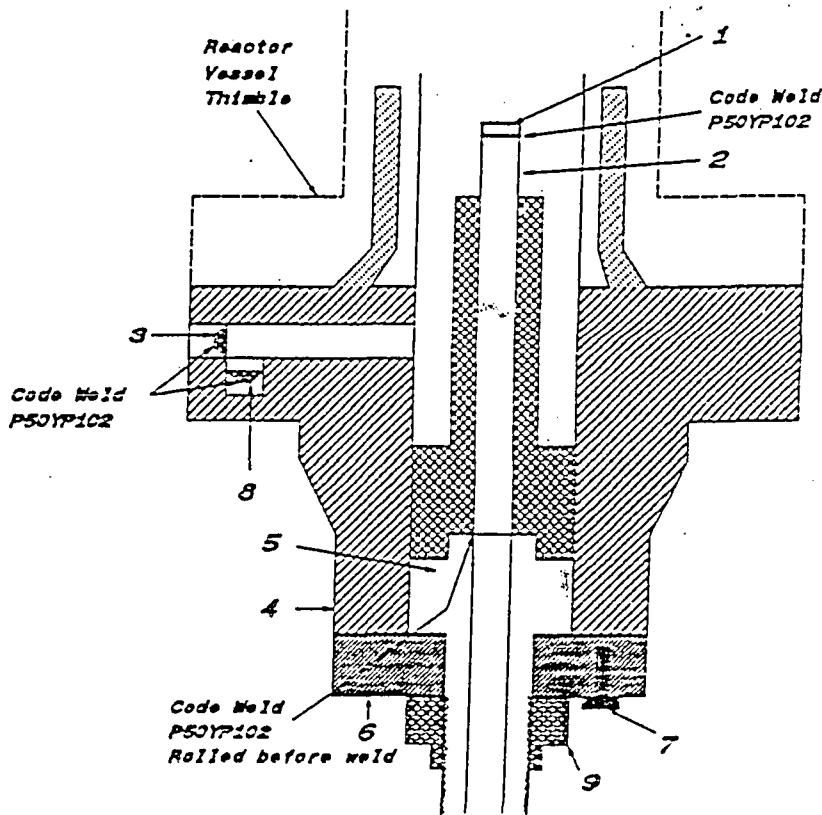
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0568 Nat'l Bd. No. N/A
  - (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
  - (b) Description of Part Inspected: Piston Tube Assembly
  - (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 16EB9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 16EB9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness.  
1.065" max. dia.
3. Plug 15SA1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7261P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1 3/16" thick x 2.62" dia.



04-014  
19

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0575 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 09/05/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( ASME Code Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A5253 Rev. 1

Design specification certified by Blom Hasberg Prof. Eng. State Calif. Reg. No. 15570

DC22A5254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on SEPT 6, 1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

9/6, 1991 [Signature]  
Date Inspector's Signature

NC 255  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

(57/94)

1 018. 2. 4 5 01 2 24 1 5

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location (Top Bottom, Ends) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (conv. or conc.)  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ (Material, Spec. No., T.S. Size Number) Other fastening \_\_\_\_\_ (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (conv. or conc.)  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_ (Describe or attach sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

1 016 64 201 2 001 5

04-014  
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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0575 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

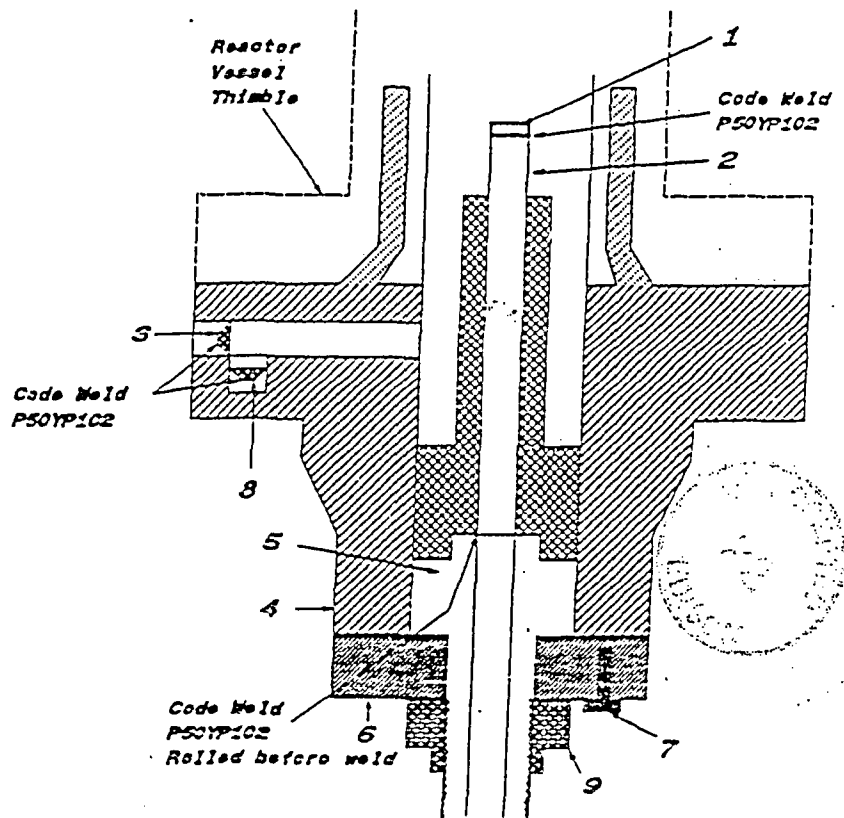
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.
3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 319D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B5  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.36" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.52" dia.



04-014  
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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0623 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 10/15/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( ASME Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Blorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 10/14, 1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

10/16, 1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio, WC 3636 PA  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3: "REMARKS".

(67/94)

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )

(a) \_\_\_\_\_  
(b) \_\_\_\_\_

If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. if bar give dimensions, if bolts, describe or sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_

Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )

(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_

If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

3 015 6 4 2 0 2 1 5 4

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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)

2117 Castle Hayne Road, Wilmington, North Carolina 28401

( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461

( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0623 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.

( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD

2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.

3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD

4. Flange 319D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD

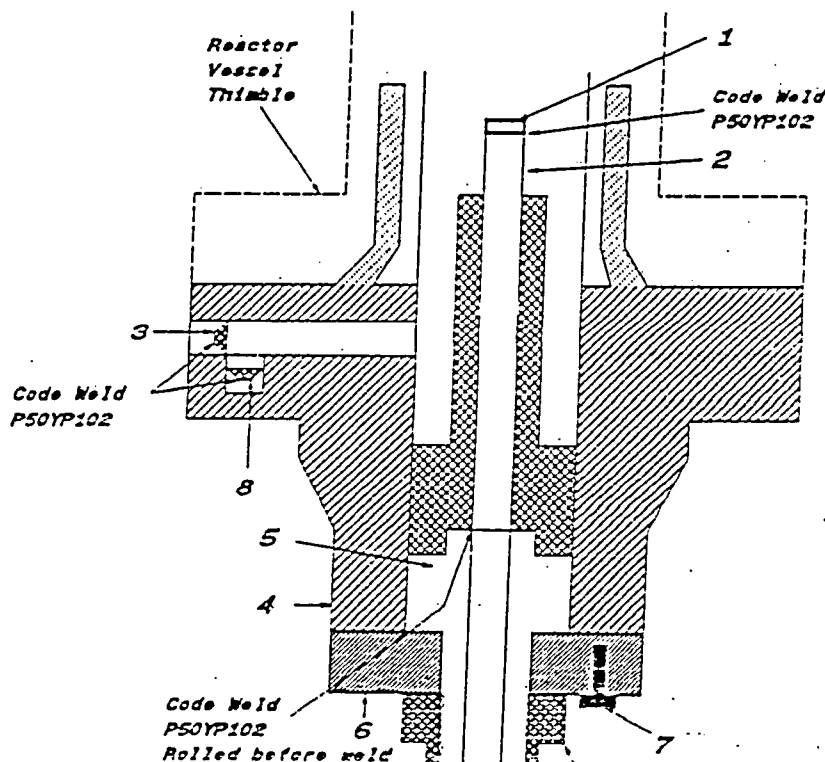
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.

6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID

7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle

8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.

9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1118. 8.4201 21.81.



04-014  
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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of NPT Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0624 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III: ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 10/16/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( SC OR Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

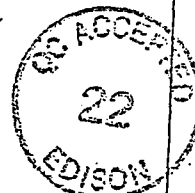
Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Bjorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 10/16/1991, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

10/16/1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio, WC 3686 PA  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in item 3. "REMARKS".

(67/M)

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 Incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. or Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Positively Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

U.S. GOVERNMENT PRINTING OFFICE: 1964 O - 351-177

04-014  
24

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0624 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 35 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

*Serial # and tester stamp is an alternate method of marking.*

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD

2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.

3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD

4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD

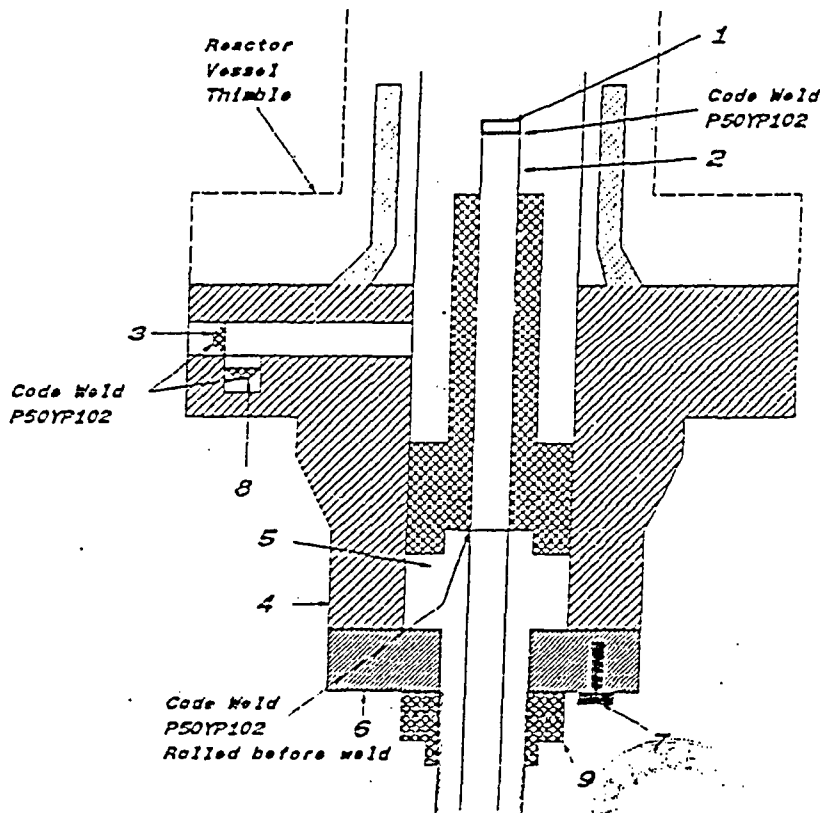
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.

6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID

7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle

8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.

9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



04-014 25

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0657 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 12/18/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( ASME Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Biorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646

Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 12/12, 1991 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

12/18, 1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio, WC 3656 PA  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

( 57/90 )

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location (Top Bottom, Ends) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (conv. or conc.)  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (conv. or conc.)  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

1015 841 201 203 1 0

04-014  
26

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0657 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001;  
SA182 - F304  
3/8" thick x 1 1/16" OD

2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.

3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD

4. Flange 19D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD

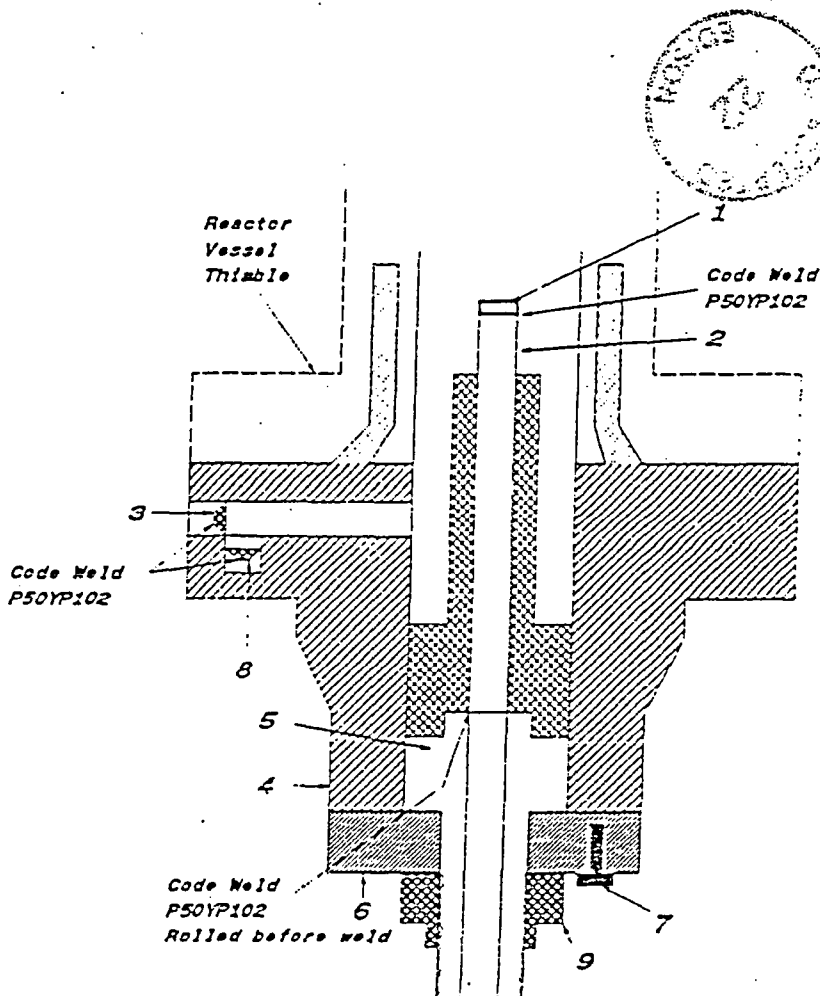
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.

6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID

7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle

8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.

9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



106 64 200 21 20

04-04 27

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing ( GE NF & CM )  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0667 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1351-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code, conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 12/18/91

Signed GE-NEBG-NF & CM-OA  
( NPT Certificate Holder )

By [Signature]  
( SC or Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPTN-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Biorn Haaberg Prof. Eng. State Calif. Reg. No. 15570

DC22A5254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 12/12, 1991 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

12/18, 1991  
Date

[Signature]  
Inspector's Signature

NC 1231, Ohio, WC 3686 PA  
National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

(87/90)

1 0 1 8 8 4 2 1 1 1 1 1 1

# FORM N-2 ( back )

Items 4-6 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
Bottom, Ends ) Thickness Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft.-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
(a) Top, bottom, ends \_\_\_\_\_ Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft.-lb

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) \_\_\_\_\_ Number \_\_\_\_\_ Dia. or Size \_\_\_\_\_ Type \_\_\_\_\_ Material \_\_\_\_\_ Thickness \_\_\_\_\_ Reinforcement Material \_\_\_\_\_ How Attached \_\_\_\_\_

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - X Postweld Heat-Treated.

2 - List other internal or external pressure with coincident temperature when applicable.

1 0 6 8 4 2 0 1 2 1 4 10



- The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.

Sheet: 2 of 2

- 
- Reactor Vessel Thimble
- Code Weld P50YP102
- Code Weld P50YP102
- Code Weld P50YP102 Rolled before weld
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 22

1.06 6420 21 4 1

- Sheet 1 of 2

By J.N. G. Fanson  
( SC & A Representative )

QC ACCEPTED  
22  
EDISON

( 87/90 )

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
Bottom, Ends ) Thickness Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 \_\_\_\_\_ psi at \_\_\_\_\_ 575 \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_

10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(St. or U)

Items 11 - 14 Incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Knuckle Elliptical Conical Hemispherical Flat Side to Press.  
Top, bottom, ends \_\_\_\_\_ Radius Radius Ratio Apex Angle Radius Diameter ( conv. or conc. )  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

Nozzles:	Purpose (Inlet, Outlet, Drain)	Number	Dia. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
1								
2								
3								

17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - F Postweld Heat-Treated.

2 - Use other internal or external pressure with coincidence temperature when applicable.

01-014  
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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )

(b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )

2. Identification - Certificate Holder's S/N of Part : 0673 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: Piston Tube Assembly

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD

2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" max. dia.

3. Plug 159A1176P001  
SA182 - F304  
1/4" thick x 0.812" OD

4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD

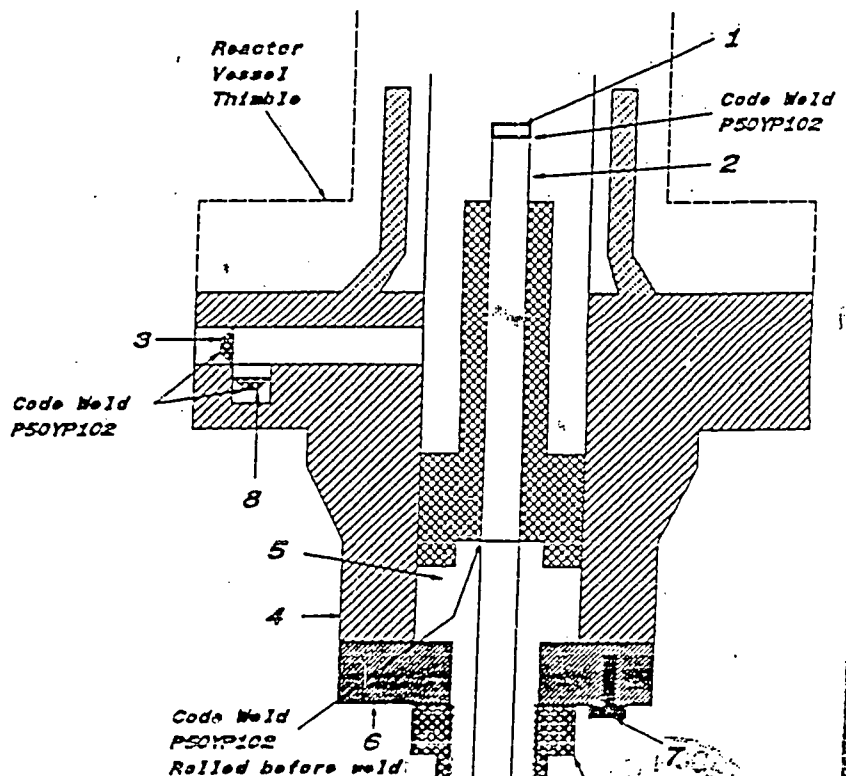
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.

6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID

7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle

8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.

9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.62" dia.



1 0 1 5 8 4 2 0 2 0 1 5

04-014

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\* 31  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of R Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0707 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. ( The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report ).

Date: 05/16/92

Signed GE-NEBG-NF & CM-QA  
( NPT Certificate Holder )

By

M. G. J. Lucan  
( SC QA Representative )

Certificate of Authorization Expires: 6/16/93 Certification of Authorization No. : NPT N-1151

### Certification of Design for Appurtenance

Design information on file at GE Company, San Jose, California

Stress analysis report on file at GE Company, San Jose, California

DC22A6253 Rev. 1

Design specification certified by Blom Haggberg Prof. Eng. State Calif. Reg. No. 15570

DC22A6254 Rev 1

Stress analysis report certified by Edward Yoshio Prof. Eng. State Calif. Reg. No. M018646



### Certification of Shop Inspection

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of North Carolina and employed by Department of Labor of State of North Carolina have inspected the part of a pressure vessel described in this Partial Data Report on 4/28, 1992, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

Date

4/17, 1992

Inspector's Signature

James P. Evers

NC 1231, Ohio, WD 3685 PA

National Board, State, Province And No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

(87/88)

106 6420 2000

# FORM N-2 ( back )

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location ( Top Bottom, Ends ) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure: \_\_\_\_\_  
(Describe as open and weld, bar, etc. if bar give dimensions, if bolts, describe or sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb.  
8. Design pressure <sup>2</sup> \_\_\_\_\_ 1250 psi at \_\_\_\_\_ 575 ° F at temp of \_\_\_\_\_ ° F

Items 9 and 10 to be completed for tube sections

9. Tube Sheets: Stationary. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind & Spec. No.) (Subject to pressure) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ inches or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11 - 14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Corrosion Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T. \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_

13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. ( conv. or conc. )  
(a) Top, bottom, ends \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)

Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb.  
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ ° F at temp of \_\_\_\_\_ ° F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

16. Nozzles: Purpose (Inlet, Outlet, Drain) Number Dia. or Size Type Material Thickness Reinforcement Material How Attached  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

17. Inspection Kanholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

18. Supports: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

1 - If Postweld Heat-Treated.

2 - Use other internal or external pressure with coincident temperature when applicable.

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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. I

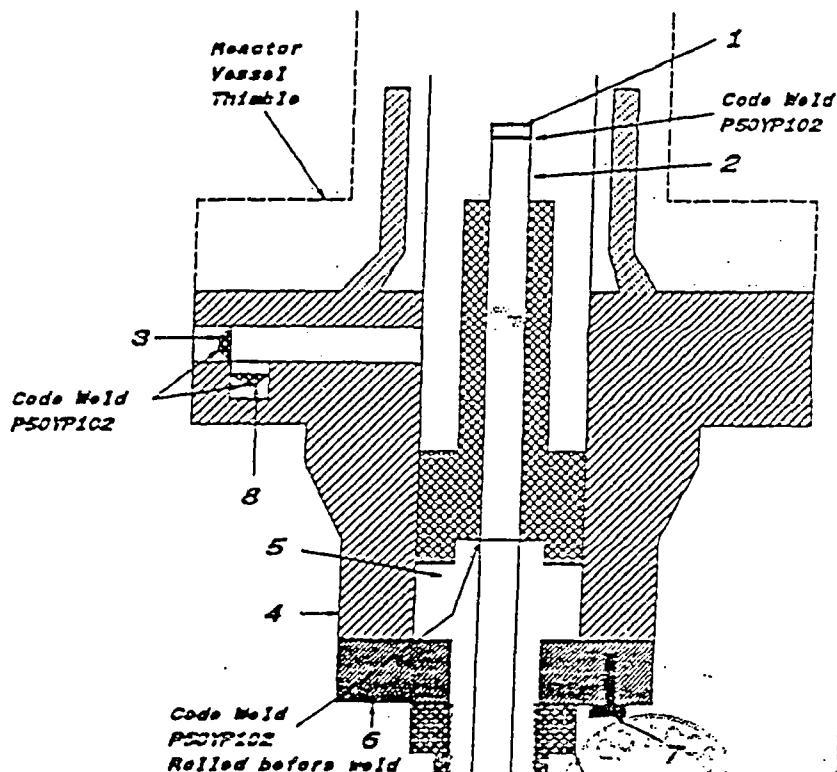
1. Manufactured & Certified by : General Electric Company Nuclear Fuel & Components Manufacturing (GE NF & CM)  
2117 Castle Hayne Road, Wilmington, North Carolina 28401  
( Name and Address of NPT Certificate Holder )
- (b) Manufactured for : Brunswick Southport, North Carolina 28461  
( Name and Address of N Certificate Holder for completed nuclear component )
2. Identification - Certificate Holder's S/N of Part : 0707 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No: 798D228G012 Rev 36 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W75, Case No. N207 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
( Brief description of service for which component was designed )

*The Piston Tube Assembly consists of the Cap Item 1, the Indicator Pipe Item 2, and the Base Item 5, and the two related Code Welds.*

Serial # and tester stamp is an alternate method of marking.

Sheet 2 of 2

1. Cap 166B9274P001  
SA182 - F304  
3/8" thick x 1 1/16" OD
2. Indicator Tube 166B9313P001  
SA312 - TP316  
3/4" sch 40 - seamless pipe  
0.113" wall thickness  
1.065" ma
3. Plug 159A1178P001  
SA182 - F304  
1/4" thick x 0.812" OD
4. Flange 919D610P001 (719E474)  
SA182 - F304  
3.37" thick x 9 5/8" OD
5. Base 137C5311P001  
SA182 - F304  
7/8" thick x 2.875" dia.
6. Ring Flange 114B5122P002, P003  
137C8151P001, P002  
SA182 - F304  
1" thick x 5.0" OD x 1.75" ID
7. Cap Screw 117C4516P002  
SA193 - B6  
6 ea. 1/2" dia. on 4 1/8" bolt circle
8. Plug 175A7961P001  
SA182 - F304  
0.38" thick x 1.307" dia.
9. Nut 137C5934P001  
XM - 19 SA479  
1.30" thick x 2.52" dia.



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FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NEW VESSEL PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE COMPANY, 3117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certification Holder)  
(b) Manufactured for: BRUNSWICK 742 SOUTHPORT, NORTH CAROLINA  
(Name and Address of NPT Certification Holder for completed nuclear component)  
2. Identification-Certificate Holders's S/N of Part: 0353 <sup>1st copy</sup> Part No. N/A  
(a) Constructed According to Drawing No: 798D225G012 Des. Prepared by D. L. Peterson  
(b) Description of Part Inspected: PISTON TURN ASSEMBLY  
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Data W'75, Case No. 1351-2 Class  
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
(Brief description of service for which component was designed)

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. (The applicable Design Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report).

DATE: 12/30, 19 89 Signed GE-NPT-NFCA-CA By [Signature]  
(NPT Certificate Holder)

Certificate Of Authorization Expires: 6/15/90 Certification of Authorization No. N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCE	
Design information on file at	<u>GE COMPANY, SAN JOSE, CALIFORNIA</u>
Stress analysis report on file at	<u>GE COMPANY, SAN JOSE, CALIFORNIA</u>
DC22A5253 Rev. 0	
Design specification certified by	<u>ELSON BAKER</u> Prof. Eng. State <u>CALIF.</u> Reg. No. <u>15570</u>
DC22A4912 Rev. 2	
Stress analysis report certified by	<u>REYNOLDFER SPENCE</u> Prof. Eng. State <u>CALIF.</u> Reg. No. <u>18345</u>

CERTIFICATION OF SVP INSPECTION	
I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of <u>NORTH CAROLINA</u> and employed by <u>DEPARTMENT OF LABOR</u> of <u>STATE OF NORTH CAROLINA</u> have inspected the part of a pressure vessel described in this Partial Data Report on <u>DEC 30</u> 19 <u>89</u> , and state that to the best of my knowledge and belief, the NPT Certificate holder has constructed this part in accordance with the ASME Code Section III.	
By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.	
DATE <u>DEC 30</u> , 19 <u>89</u>	Inspector's Signature <u>[Signature]</u>
	National Board, State, Province and No. <u>NA 658, PA W2712 Only</u>

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS"

(0/77)



Items 4-8 (incl.) to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell Material		I.S.		Nominal Thickness		In.		Allowance		In.		Dia.		ft.		In.		Length		ft.		In.	
		(Kind & Spec. No.)		(Min. of Range Specified)																			
5. Seams: Long		H.T. <sup>1</sup>		R.T.		Efficiency																	
		Girth		H.T. <sup>1</sup>		R.T.		No. of Courses															
6. Heads: (a) Material		I.S.		(b) Material		I.S.																	
Location (Top Bottom, Ends)		Thickness		Crown Radius		Knuckle Radius		Elliptical Ratio		Conical Apex Angle		Hemispherical Radius		Flat Diameter		Side to Flange (center to center)							
(a)																							
(b)																							
If reasonable, bolts used		(Material, Spec. No., I.S. Size Number)		(Other Fastening)		(Describe or attach sketch)																	
7. Jacket closures:		(Describe as open and weld, bar, etc. If bar give dimensions, if bolts, describe as shown)																					
8. Design Pressure <sup>2</sup>		1250		psi at		575		°F															

Items 9 and 10 to be completed for tube exchangers.

9. Tube Sheet: Stationary Mat'l.		Girth		Thickness		Attachment																	
		(Kind of Spec. No.)		(Subj. to Press.)		(Welded, Bolted)																	
Floating Material		Dia.		Thickness		Attachment																	
10. Tubes: Material		O.D.		In.		Thickness		or gaps		Number		Type											

Items 11-14 (incl.) to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell Material		I.S.		Nominal Thickness		In.		Allowance		In.		Dia.		ft.		In.		Length		ft.		In.	
		(Kind & Spec. No.)		(Min. of Range Specified)																			
12. Seams: Long		H.T. <sup>1</sup>		R.T.		Efficiency																	
		Girth		H.T. <sup>1</sup>		R.T.		No. of Courses															
13. Heads: (a) Material		I.S.		(b) Material		I.S.																	
Location (Top Bottom, Ends)		Thickness		Crown Radius		Knuckle Radius		Elliptical Ratio		Conical Apex Angle		Hemispherical Radius		Flat Diameter		Side to Flange (center to center)							
(a) Top, Bottom, End																							
(b) Channel																							
If reasonable, bolts used (a)		(b)		(c)		Other Fastening		(Describe or attach sketch)															
14. Design Pressure <sup>2</sup>				psi at		°F																	

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number		Size		Location																			
16. Nozzles:		Purpose (Inlet Outlet, Drain)		Number		Dia or Size		Type		Material		Thickness		Reinforcement Material		Attached							
17. Inspection Markings, No.		Size		Location																			
Openings: Handluc, No.		Size		Location																			
Threaded, No.		Size		Location																			
18. Supports: Shift		Lugs		Legs		Other		Attached															
		(Yes or No)		(Number)		(Number)		(Describe)		(Where & How)													

<sup>1</sup> If Postweld Heat-Treated.

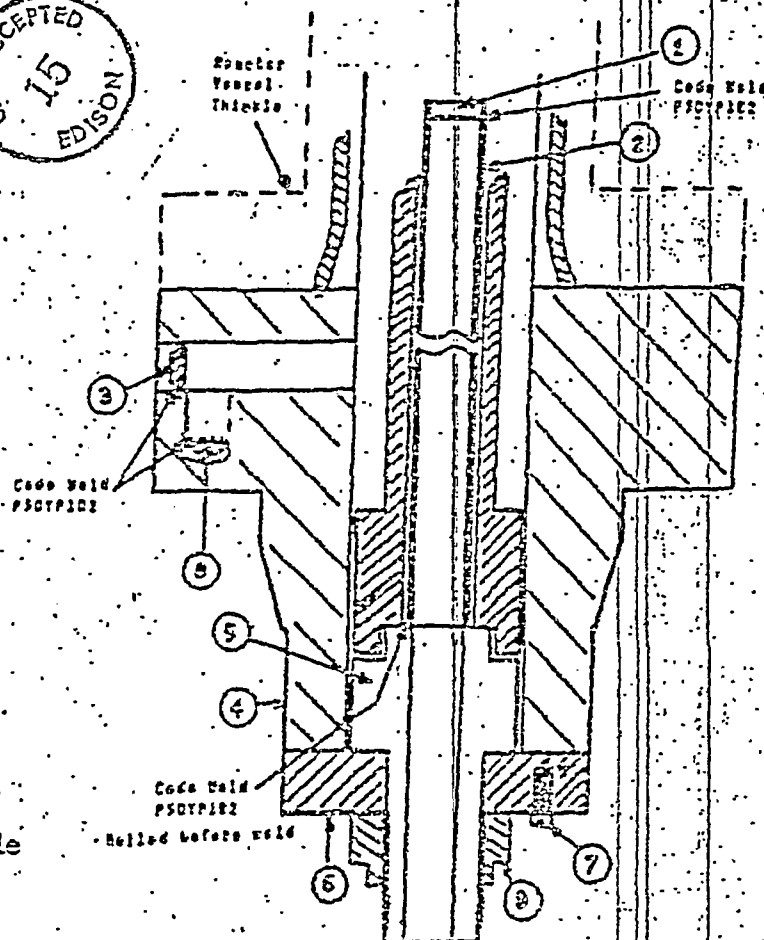
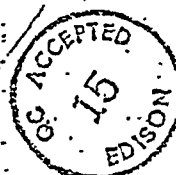
<sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certificate Holder)
- (b) Manufactured for: BRUNSWICK 1&2 SOUTHPORT, NORTH CAROLINA  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: 0353 Mat'l Ed. N. N/A
- (a) Constructed According to Drawing No: 798D228G012 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: Piston Tube Assembly
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W.75, Case No. 1361-2 Class I
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.  
(Brief description of service for which component was designed)

Sheet 2 of 2

1. Cap 167A2343P1  
SA182-F304  
3/8 thick x 1 1/16 OD
2. Indicator Tube 104B1336P3  
SA312-TP316  
3/4 sch 40-seamless pipe  
0.113 wall thickness  
1.055 max. dia.
3. Plug 159A1176P1  
SA182-F304  
1/4 thick x 0.812 OD
4. Flange 919D610P1 (719E474)  
SA182-F304  
3.37 thick x 9 5/8 OD
5. Head 129B3539P3, P5  
SA182-F304  
7/8 thick x 2.875 dia.
6. Ring Flange 114B5122P2  
SA182-F304  
1" thick x 5.0 OD x 1.75 ID
7. Cap Screw 117C4516P2  
SA193-B6  
6 ea. 1/2 dia. on 4 1/8 bolt circle
8. Plug 175A7961P1  
SA182-F304  
0.38 thick x 1.307 dia.



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

1. Owner <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address 2. Plant <u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address 3. Work Performed by <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address	Date <u>March 3, 2005</u> Sheet <u>1 of 2</u> Unit <u>2</u> Deco Maintenance Repair Organization P.O. No., Job No., etc. Type Code Symbol <u>N/A</u> Stamp Authorization No. <u>N/A</u> Expiration Date <u>N/A</u>
--	--

4. Identification of System Division 1 and Division 2 Emergency Equipment Cooling Water Systems – supply and return piping to Drywell Coolers. Division 1 Coolers include Coolers T4700B001, T4700B002, T4700B006, & B007. Division 2 Coolers include T4700B003, T4700B004, & T4700B010. (For N-5 Data Reports-See page 2)

5. (a) Applicable Construction Code ASME III, Class 2 19 71 Edition 71 Addenda N/A Code Case

(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements 1992-92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
T4700B001	CTI - Nuclear /	# 1 / # 2	1202/1180	N/A	1975	Replacement	Y
T4700B002	Wismer & Becker	# 3 / # 4	1182/1178	N/A	1975	Replacement	Y
T4700B003	CTI - Nuclear /	# 5 / # 6	1181/1179	N/A	1975	Replacement	Y
T4700B004	Wismer & Becker	# 7 / # 8	1197/1183	N/A	1975	Repair/Replacement	Y
T4700B006	CTI - Nuclear /	# 11 / # 12	1196/1185	N/A	1975	Replacement	Y
T4700B007	Wismer & Becker	# 13 / # 14	1198/1191	N/A	1975	Replacement	Y
T4700B010	CTI - Nuclear /	# 19 / # 20	1194/1201	N/A	1975	Replacement	Y
	Wismer & Becker						

7. Description of Work Replace various Drywell Cooler supply and return piping flange bolting material during gasket replacements during forced outage 05-01. Install lifting lugs on the Drywell Cooler End Bells to facilitate cooler repairs on Drywell Coolers T4700B006, T4700B007, and T4700B010. Perform Tube plugging and blendgrind oversize welds on previous tube plug repairs on T4700B004. Replace cover nuts on Drywell Coolers T4700B002 and T4700B004. See sheet 2 of this NIS-2 for material installed.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Ref. Code Case N-416-2  
 Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks All pressure retaining material including bolting material installed meets ASME III, Class 2 requirements. Reference purchase orders for material installed is included on page 2 of this NIS-2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair/Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data reports to be supplemented by Owners Section XI Program 05-002 and 05-003.

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date March 3, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 02-01-05 to 03-07-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mark Dutilleul Commissions NI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date March 7, 2005

(10/34)

For complete list of work packages, see page 2 of this NIS-2

Drvwell Cooler Repair & Replacements 05-002 and 05-003 Sheet 2 of 2

Component PIS Number	Work Request Number	Materials Installed	Purchase Order Numbers
T4700B001	000Z050292	Flange Bolting (South Supply and Return flanges) 8---Studs- ½"-13 UNC, SA193 B7, HT# 501 16---Nuts - ½"-13 UNC, SA194 2H, HT# P121	902046 974211
	000Z050344	New Gaskets Only	
T4700B002	000Z050294	Flange Bolting (Supply and Return flanges) 16---Studs- ½"-13 UNC, SA193 B7, HT# F728 10---Nuts-- ½"-13 UNC, SA194 2H, HT# F173 10---Nuts-- ½"-13 UNC, SA194 2H, HT# S399 12---Nuts-- ½"-13 UNC, SA194 2H, HT# VJD Cover Bolting 1--Nut - ¾"-10 UNC, SA194 8M, HT# 21586	889849 886170 977707 870784 407206
	000Z050363	Torque Check Only	
T4700B003	000Z050293	Flange Bolting (Supply and Return flanges) 16---Studs- ½"-13 UNC, SA193 B7, HT# 728 32---Nuts- ½"-13 UNC, SA194 2H, HT# F833	889849 890711
T4700B004	000Z050246	Flange Bolting (Supply and Return flanges) 16---Studs- ½"-13 UNC, SA193 B7, HT# F728 32---Nuts - ½"-13 UNC, SA194 2H, HT# S399 Cover Bolting 6---Nuts ¾" - 10 UNC, SA194 8M, HT# 21586	889849 977707 407206
	000Z050328	New Gaskets only	
	000Z050332	2 Tube plugs – SA479 TP 304A, Ht # CHY	356971
T4700B006	000Z050295	Flange Bolting (North and South Supply) 8 ---Studs- ½"-13 UNC, SA193 B7, HT# P501 16---Nuts - ½"-13 UNC, SA194 2H, HT# P121	902046 947211
	000Z050309	4 Lifting Lugs (Supply and Return Headers) 5/8" bar, ASTM A276 TP 304, Ht #1G9316	357093
T4700B007	000Z050310	2 Lifting Lugs (South Supply and Return Header) 5/8" bar, ASTM A276 TP 304, Ht #1G9316	368932
	000Z050296	Flange Bolting (South Supply) 4 ---Studs- ½"-13 UNC, SA193 B7, HT# P501 8 ---Nuts- ½"-13 UNC, SA194 2H, HT# P121	902046 947211
T4700B010	000Z050311	2 Lifting Lugs (North Supply and Return Header) 5/8" bar, ASTM A276 TP 304, Ht #1G9316	368932
	000Z050297	Flange Bolting (Supply and Return flanges) 16---Studs- ½"-13 UNC, SA193 B7, HT# F728 28---Nuts - ½"-13 UNC, SA194 2H, HT# P121 4 ---Nuts - ½"-13 UNC, SA194 2H, HT# VJD	889849 974211 870784

\*Cooler/Affected N-5 Code Data Reports

T4700B001 N5-0091, N5-0129, N5-0130  
 T4700B002 N5-0091, N5-0111, N5-0131, N5-0113  
 T4700B003 N5-0093, N5-0626  
 T4700B004 N5-0502  
 T4700B006 N5-0091, N5-0121, N5-0122, N5-0123, N5-0124  
 T4700B007 N5-0091, N5-0117, N5-0118, N5-0119, N5-0120, N5-0126  
 T4700B010 N5-0093

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-005**

1. Owner <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Date <u>May 12, 2006</u> Sheet <u>1 of 3</u>
2. Plant <u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Unit <u>2</u>
3. Work Performed by <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address	<u>Deco Maintenance</u> Repair Organization P.O. No., Job No., etc. Type Code Symbol <u>N/A</u> Stamp Authorization No. <u>N/A</u> Expiration Date <u>N/A</u>
4. Identification of System <u>(N5-J120-N5-1) Nuclear instrumentation SRM's / IRM's</u>	
5. (a) Applicable Construction Code <u>ASME III, Class 1</u> 19 <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
SRM Dry Tubes IRM Dry Tubes	General Electric	N/A	N/A	N/A	1975	Replaced	Y
SRM Dry Tubes IRM Dry Tubes	GE Reuter-Stokes Inc.	See Matrix	N/A	See Matrix	2006	Replacement	Y

7. Description of Work Replaced all Nuclear Instrumentation Dry Tubes as well as detectors in the Reactor Vessel during RF11. Replacement consisted of 4 SRM Dry Tubes and 8 IRM Dry Tubes.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Replacement Dry Tubes were procured per PO # 979076.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-J120-N5-1 to be supplemented by Owners Section XI Program 05-005

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date June 1, 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 3-9-06 to 06-05-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions NB610  
National Board, State, Province, and  
Endorsements

Date June 5 2006

(10/94)

For complete work packages, see Work Requests listed on attached matrix.

NIS-2 Attachment for Section XI Program No. 05-005 – RF11 SRM/IRM Exchange

SRM/IRM	PIS No.	Serial No.	Detector Serial No.	Work Request
SRM A	C51N001A	05S110296	06S111075	000Z050407
SRM B	C51N001B	05S110295	06S111074	000Z050408
SRM C	C51N001C	05S110294	04S88725	000Z050409
SRM D	C51N001D	05S110293	06S111073	000Z050410
IRM A	C51N002A	05S110299	06S112235	000Z050411
IRM B	C51N002B	05S110300	05S104926	000Z050412
IRM C	C51N002C	05S110301	06S111361	000Z050413
IRM D	C51N002D	05S110297	06S112239	000Z050414
IRM E	C51N002E	05S110298	06S112150	000Z050415
IRM F	C51N002F	05S110291	06S111360	000Z050417
IRM G	C51N002G	05S110292	06S112236	000Z050416
IRM H	C51N002H	05S110302	06S112238	000Z050418



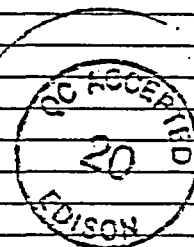
FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*As Required by the Provisions of the ASME Code, Section III  
Not to Exceed One Day's ProductionNIS 2 05-05  
Sheet 3 of 3

Pg. 1 of 2

1. Manufactured and certified by GE Reuter-Stokes, Inc., 8499 Darrow Road, Twinsburg, Ohio 44087  
(name and address of NPT Certificate Holder)
2. Manufactured for Fermi-2 Detroit Edison Company 6400 N. Dixie Highway Newport, Michigan  
(name and address of Purchaser)
3. Location of installation Fermi-2 Detroit Edison Company 6400 N. Dixie Highway Newport, Michigan  
(name and address)
4. Type: RS-E5-1500-201 N/A N/A N/A 2006  
(drawing no.) (mat'l spec. no.) (tensile strength) (CRN) (year built)
5. ASME Code, Section III, Division 1: 1977 Summer 1977 1 N/A  
(edition) (addenda date) (class) (Code Case no.)
6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(no.)
7. Remarks: Certified Design Specification CDS-C-5600-1 Rev. H  
Certified Design Report CDR-C-5600-36 Rev. 0  
On File at GE Reuter-Stokes, Inc.
8. Nom. Thickness (in.) N/A Min. design thickness (in.) N/A Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A
9. When applicable, Certificate Holders' Data Reports are attached for each item of this report

Part or Appurtenance Serial Number	National Board No. in Numerical Order
(1) ✓ 05S110291	N/A
(2) ✓ 05S110292	N/A
(3) ✓ 05S110293	N/A
(4) ✓ 05S110294	N/A
(5) ✓ 05S110295	N/A
(6) ✓ 05S110296	N/A
(7) ✓ 05S110297	N/A
(8) ✓ 05S110298	N/A
(9) ✓ 05S110299	N/A
(10) ✓ 05S110300	N/A
(11) ✓ 05S110301	N/A
(12) ✓ 05S110302	N/A
(13)	
(14)	
(15)	
(16)	
(17)	
(18)	
(19)	
(20)	
(21)	
(22)	
(23)	
(24)	
(25)	

Part or Appurtenance Serial Number	National Board No. in Numerical Order
(26)	
(27)	
(28)	
(29)	
(30)	
(31)	
(32)	
(33)	
(34)	
(35)	
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(42)	
(43)	
(44)	
(45)	
(46)	
(47)	
(48)	
(49)	
(50)	



10. Design pressure 1250 PSIG psi. Temp. Vessel 575°F. Seal 300°F. Hydro. test pressure 1875 PSIG at temp. 70°F.  
(when applicable)

\* Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 2 and 3 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

Certificate Holder's Serial Nos. N/A through N/A

Reprint (7/91)

## CERTIFICATION OF DESIGN

Design specifications certified by Bill A. Balazs P.E. State CA Reg. no. MF348  
(when applicable)

Design report\* certified by Ahmed I. Sabet P.E. State NY Reg. no. 071638  
(when applicable)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Assemblies  
conforms to the rules of construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. N-2703 Expires September 16, 2006

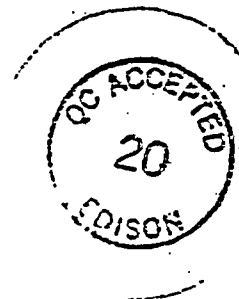
Date 2/27/06 Name GE Reuter-Stokes, Inc. Signed [Signature]  
(NPT Certificate Holder) (authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of OHIO and employed by H.S.B. CT of HARTFORD, CT have inspected these items described in this Data Report on \_\_\_\_\_, and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III, Division 1. Each part listed has been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 2/27/06 Signed [Signature] Commissions NB12604ABN OH387  
(Authorized Inspector) [Nat'l Bd. (incl. endorsements) and state or prov. and no.]



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-006**

1. Owner Detroit Edison Company Date May 2, 2006  
     Name  
     6400 North Dixie Highway, Newport MI 48166  
     Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
     Name  
     6400 North Dixie Highway, Newport MI 48166  
     Address
3. Work Performed by Detroit Edison Company Type Code Symbol Stamp N/A  
     Name  
     6400 North Dixie Highway, Newport, MI 48166 Authorization No. N/A  
     Address Expiration Date N/A
4. Identification of System Various Component Supports (Mechanical Snubbers)
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda (Piping)  
     (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1992-W'92 Edition No Addenda, Subsection NF, Code Case 1644-5 (Snubbers)

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
PLANT MECHANICAL SNUBBERS	Pacific Scientific	Various	NA	NONE	Various	REPLACEMENTS	N

7. Description of Work Refurbish Mechanical Snubbers for future installation
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
     Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F Functional test & visual inspection

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Attached are listings of Mechanical Snubbers that were refurbished and changed out during testing activities during RF11  
Applicable Manufacturer's Data Reports to be attached

Note: The listing of the Mechanical Snubbers that were refurbished prior to and during RF11 includes a listing

of load bearing parts installed. Documentation satisfies requirements of Code Case N-508-1 as allowed by Relief Request RR-C4.

**CERTIFICATE OF COMPLIANCE**

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp Original Code Data Reports to be supplemented by owners Section XI Program No. 05-006

Certificate of Authorization No. N/A Expiration Date N/A

Signed R. M. Hambleton, Lead ISI Engineer  
 Owner or Owner's Designee, Title

R. M. Hambleton Date MAY 5, 2006

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Michigan and employed by HSB CT of  
One State Street, Hartford, CT 06102 have inspected the components described  
 in this Owner's Report during the period 06-23-05 to 05-09-06, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described  
 in this Owner's 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 Owner's 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.

M. J. J. J.  
 Inspector's Signature

Commissions MI 610  
 National Board, State, Province, and Endorsements

Date May 9 20 06

(12/82)

For complete work package, see Work Request A498060100  
A519060100

Hanger Number	Old Serial Number	Work Request	New Serial Number
B21-2187-G81	22456	000Z060062	12681
B21-2587-G05	7017	000Z051700	9889
B21-2589-G03	9905	000Z051700	4721
B21-2592-G10	8994	000Z051700	6182
B21-4095-G05	10347	000Z051700	9008
B21-4095-G08	12820	000Z051700	10336
B21-E213-SSB3	12816	000Z051700	8337
B21-E213-SSC1	12803	000Z051700	10341
B21-E213-SSC3	6175	000Z051700	6186
B21-E213-SSD3	11273	000Z051700	9874
B31-5065-G39A	12731	000Z051767	19922
B31-5239-G06	13198	000Z060062	8477
B31-E215-SSB1	11270	000Z051765	4707
C41-2340-G11	8467	000Z051702	13160
C41-2340-G16B	13146	000Z051702	13116
C41-2979-G01A	12753	000Z061223	12685
E11-2299-G07	12736	000Z051753	19936
E11-3153-G15B	8989	000Z051697	9013
E11-3161-G17	20963	000Z061117	12446
E11-3164-G27	12450	000Z051698	15283
E11-3178-G13	20986	000Z051590	20974
E11-3185-G54	6172	000Z051617	10346
E11-3519-G14	12447	000Z051740	20969
E11-4251-G17	19913	000Z051697	12708
E21-2199-G05	16225	000Z051572	13193
E21-3052-G09A	12815	000Z051735	8951
E21-3052-G09B	8956	000Z051735	10329
E21-3053-G10A	9002	000Z051717	8362
E21-3053-G10B	10333	000Z051717	10337
E21-5300-G06	19897	000Z061223	12724
E41-3167-G14	12804	000Z051716	8330
E51-3174-G09C	9869	000Z051716	9849
G11-3659-G46	23163	000Z061118	23161
G33-3096-G27	15288	000Z051762	12441
G33-3245-G67	19577	000Z051762	18642
G51-4056-G21	18646	000Z051716	23164
G51-4059-G21	12433	000Z051716	12449
N21-3131-G33	6186	000Z051703	8963
N21-3131-G38	8362	000Z051703	8968
N21-3536-G28	12821	000Z051701	8958
N21-3536-G29A	9010	000Z051701	8955
N21-3536-G32	8991	000Z061118	8328
N21-3536-G33	11278	000Z051701	8714

Hanger Number	Old Serial Number	Work Request	New Serial Number
N21-3536-G38A	8985	000Z051749	8992
N21-3536-G38B	8999	000Z051749	6174
N21-3537-G29A	8364	000Z051701	8982
N21-3537-G29B	10353	000Z051701	10331
N21-3537-G35	8965	000Z051701	10353
N21-3537-G36	10329	000Z051701	9021
N21-3537-G38A	8961	000Z051749	8358
N21-3537-G38B	9019	000Z051749	9011
N30-2186-G04	22357	000Z051716	12699
N30-2186-G14	19579	000Z051762	9854
N30-3259-G30	8732	000Z051703	9892
N30-3259-G34	9844	000Z051703	7014
N30-3259-G46	8713	000Z051703	11265
N30-3259-G53	8726	000Z051703	9890
N30-3259-G56	2007	000Z051703	2007
N30-3259-G67	1583	000Z051703	1581
N30-3526-G46	8495	000Z051702	13205
N30-3526-G52	19936	000Z051702	22450
N30-3526-G53	19909	000Z060062	12686
N30-3526-G58	13184	000Z060062	13157
P11-3566-G08	21957	000Z051702	9856
P42-4357-G22A	12704	000Z060062	22357
P50-2163-G15A	12759	000Z061153	22378
T23-I2837-36-G54	12708	000Z060062	12732
T23-I2837-36-G58	22429	000Z060062	12710
T23-I2837-36-G96A	19901	000Z051764	12700
T23-I2837-40-G04	21951	000Z051740	18657
T23-I2837-41-G07A	8490	000Z051766	13123
T23-I2837-41-G10A	8466	000Z061153	13174
T23-I2837-41-G10B	8464	000Z060062	13202
T23-I2837-42-G01	22358	000Z061148	19902
T23-I2837-42-G12A	8499	000Z051764	8508
T23-I2837-42-G14B	12730	000Z061148	19909
T23-I2837-42-G23A	12674	000Z060062	27916
T23-I2837-42-G27	13179	000Z051764	8460
T23-I2837-45-G04	18644	000Z061118	9858
T23-I2837-45-G11B	8503	000Z051766	13188
T23-I2837-45-G19	13206	000Z060062	13126
T23-I2837-46-G102	12685	000Z061153	19915
T23-I2837-46-G17C	22364	000Z051740	22425
T23-I2837-46-G78	13122	000Z061113	13178
T23-I2837-46-G94E	22442	000Z061152	12768
T23-I2837-48-G08B	19903	000Z061112	19913

Hanger Number	Old Serial Number	Work Request	New Serial Number
T23-I2837-51-G141	12743	000Z051764	22451
T23-I2837-51-G142	8506	000Z051740	8484
T23-I2837-51-G144	12725	000Z051740	12733
T23-I2837-51-G19	22459	000Z051764	22363
T23-I2837-51-G28	12768	000Z051740	12745
T23-I2837-51-G29	12724	000Z051740	22365
T23-I2837-51-G33	12751	000Z051740	22420
T23-I2837-51-G43	12697	000Z060062	12762
T23-I2837-51-G61	13153	000Z051740	13200
T23-I2837-51-G62	22340	000Z051740	21917
T23-I2837-53-G31	22415	000Z061153	12730
T48-4062-G05A	22359	000Z051716	12726
T48-5314-G10	22352	000Z051766	12978
T49-5325-G59	13191	000Z061223	13136
T49-5325-G60	13197	000Z051768	13196
T50-7114-G44	19937	000Z061223	19931
T50-7114-G45	22443	000Z051768	12711
T50-7431-G03A	12716	000z061152	12704
T50-7431-G03B	12756	000z061152	19903
T71-I2820-35-G40	13117	000Z051767	8501
T71-I2820-35-G46	8494	000Z061221	13149
T71-I2837-62-G37	12767	000Z061223	12731
T71-I2837-62-G39	22386	000z061152	22446
T71-I2837-63-G20	13189	000Z061153	8495
T71-I2837-63-G22	12695	000Z051767	12691
T71-I2837-63-G24	19931	000Z061221	19929
T71-I2837-63-G34	22394	000Z061221	22340
T71-I2837-64-G47	22446	000Z051768	22455
T71-I2837-64-G48	12994	000z061152	22415
T71-I2837-64-G49	12693	000Z061223	12759
T71-I2837-64-G52	12675	000Z061223	22358

## Mechanical Snubbers Rebuilt with New Load Bearing Parts

NIS-2 for 05-006  
Sheet 5 of 6

Serial	Snubber Location	Size	Description	PO	Work Package
8494	Spare	1/2	Capstan Spring	402519	A519060100
10329	E21-3052-G09B	10	Capstan Spring	317958	A519060100
22429	Spare	1/4	Rod and Bearing Assembly Torque Carrier and Shaft Assembly	407465 407465	A519060100
19936	E11-2299-G07	1/4	Rod and Bearing Assembly Torque Carrier and Shaft Assembly	389195 407465	A519060100
12700	T23-I2837-36-G96A	1/4	Torque Carrier	362145	A498060100
22450	N30-3526-G52	1/4	Torque Carrier	362145	A498060100
19922	B31-5065-G39A	1/4	Torque Carrier Capstan Spring	362145 402519	A498060100
12681	B21-2187-G81	1/4	Torque Carrier	362145	A498060100
22425	T23-I2837-46-G17C	1/4	Rod and Bearing Assembly	396777	A498060100
12699	N30-2186-G04	1/4	Torque Carrier	362145	A498060100
12733	T23-I2837-51-G144	1/4	Torque Carrier	362145	A498060100
12711	T50-7114-G45	1/4	Capstan Spring	402266	A498060100
13150	Spare	1/2	Torque Carrier	317957	A498060100
8482	Spare	1/2	Torque Carrier	335317	A498060100
13158	Spare	1/2	Torque Carrier (snubber 16235) Rod and Bearing Assembly (snubber 16235) ball bearing (snubber 16235)	* * *	A498060100
13116	C41-2340-G16B	1/2	Torque Carrier	335317	A498060100
13162	Spare	1/2	Capstan Spring	402519	A498060100
21947	Spare	1	Thrust bearing kit	362146	A498060100
18642	G33-3245-G67	1	Thrust bearing kit	406333	A498060100
23164	G51-4056-G21	1	Thrust bearing kit	362146	A498060100
9854	N30-2186-G14	1	Thrust bearing kit Support cylinder (from snubber 23170)	406333 *	A498060100
9856	P11-3566-G08	1	Thrust bearing kit Bearing Retainer Nut (from snubber 23170)	362146 *	A498060100
18643	Spare	1	Thrust bearing kit	406333	A498060100
9858	T23-I2837-45-G04	1	Thrust bearing kit	406333	A498060100
18647	Spare	1	Thrust bearing kit	406333	A498060100
23165	Spare	1	Telescoping Cylinder (snubber 23170) End Plug Assembly (snubber 23170)	* *	A498060100
23161	G11-3659-G46	1	Thrust bearing kit	406333	A498060100
12451	Spare	3	Thrust bearing assembly	317959	A498060100
12441	G33-3096-G27	3	Thrust bearing assembly	317959	A498060100
20966	Spare	3	Thrust bearing assembly	362146	A498060100
12446	E11-3161-G17	3	Ball Bearing Screw Assembly	317959	A498060100
20976	Spare	3	Thrust bearing assembly	317959	A498060100
15289	Spare	3	Thrust bearing assembly	317959	A498060100
15283	E11-3164-G27	3	Thrust bearing assembly	317959	A498060100
8358	N21-3537-G38A	10	Thrust bearing assembly	362146	A498060100
8336	Spare	10	Position Tube (snubber 9017)	*	A498060100
8982	N21-3537-G29A	10	Ball bearing screw assembly	319063	A498060100
8990	Spare	10	Thrust Bearing Kit	362146	A498060100



# Mechanical Snubbers Rebuilt with New Load Bearing Parts

NIS-2 for 05-006

Sheet 6 of 6

Serial	Snubber Location	Size	Description	PO	Work Package
8324	Spare	10	Cylinder (snubber 12796) End Plug Assembly (snubber 12796)	*	A498060100
12770	Spare	10	Thrust Bearing Kit	362146	A498060100
12800	Spare	10	Thrust Bearing Kit Clutch Spring	362146 317959	A498060100
9884	Spare	35	Capstan Spring	317958	A498060100
8714	N21-3536-G33	35	Ball Bearings	362935	A498060100
4717	Spare	35	Ball Bearings	362935	A498060100
4706	Spare	35	Ball Bearings	362935	A498060100
7019	Spare	35	Thrust Bearing Kit	402519	A498060100
8710	Spare	35	Torque Carrier (snubber 8739) Inertia Mass (snubber 8739) Ball Bearings	* * 362935	A498060100
9897	Spare	35	Thrust Bearing Assembly (snubber 8739) Ball Bearings	* 362935	A498060100
9856	P11-3566-G08	35	Ball Bearings	362935	A498060100
11283	Spare	35	Ball Bearings	362935	A498060100
11265	N30-3259-G46	35	Thrust Bearing Assembly Ball Bearings	362935 362935	A498060100
7014	N30-3259-G34	35	Thrust Bearing Assembly Recirculation Bearing Assembly Ball Bearings	407465 318965 362935	A498060100
9874	B21-E213-SSD3	35	Thrust Bearing Assembly Recirculation Bearing Assembly Ball Bearings	407465 318965 362935	A498060100
4707	B31-E215-SSB1	35	Thrust Bearing Assembly (snubber 9854) Ball Bearings	* 362935	A498060100
1589	Spare	100	Thrust Bearing Assembly Ball Bearings	402519 402519	A498060100
1581	N30-3259-G67	100	Thrust Bearing Assembly Ball Bearings	406333 402519	A498060100
	B21-2589-G03		Load Pin	Req 9733159	000Z051700
	G33-3245-G67		Load Pin (Stock Code 482-5680)	245777	000Z051762

Note that these parts are ASME parts. Listing does not include non-load bearing parts (retaining rings, washers).

\* Re-used salvaged parts from unrepairable snubbers.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-007**

1. Owner <u>Detroit Edison Company</u>	Date <u>May 2, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1</u> of <u>4</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	<u>DECo Maintenance</u>
Address	Repair Organization P.O. No., Job No., etc.
3. Work Performed by <u>Detroit Edison Company</u>	Type Code Symbol Stamp <u>N/A</u>
Name	Authorization No. <u>N/A</u>
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Expiration Date <u>N/A</u>
Address	
4. Identification of System <u>Various Component Supports (Hydraulic Snubbers)</u>	
<div style="display: flex; justify-content: space-between; font-size: small;"> <span>ANSI B31.7 19 69 Articles 1-720 &amp; 1-721</span> </div>	
5. (a) Applicable Construction Code <u>ANSI B31.1 19 67</u> Article <u>121</u>	
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements <u>1992-W'92</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
PLANT HYDRAULIC SNUBBERS	Power Piping	Various	NA	NONE	Various	REPLACEMENTS	N

7. Description of Work Refurbish Hydraulic Snubbers during testing activities and for future installation

8. Tests Conducted:    Hydrostatic ☐    Pneumatic ☐    Nominal Operating Pressure ☐  
                                  Other ☒ Pressure \_\_\_\_\_ psi    Test Temp. \_\_\_\_\_ °F    Functional test & visual inspection

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Attached are listings of Hydraulic Snubbers that were refurbished and changed out during testing activities during RF11.  
Applicable Manufacturer's Data Reports to be attached

Note: The listing of the Hydraulic Snubbers that were refurbished prior to and during RF11 includes a listing of load bearing parts installed.

Documentation satisfies requirements of Code Case N-508-1 as allowed by Relief Request RR-C4.

**CERTIFICATE OF COMPLIANCE**

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp Original Code Data Reports to be supplemented by owners Section XI Program No. 05-007.

Certificate of Authorization No. N/A Expiration Date N/A

Signed R. M. Hambleton, Lead ISI Engineer  
Owner or Owner's Designee, Title

Date MAY 5 20 06

**CERTIFICATE OF INSERVICE INSPECTION**

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
or Province of Michigan and employed by HSB CT of  
One State Street, Hartford, CT 06102 have inspected the components described  
in this Owner's Report during the period 06-23-05 to 05-09-06, and state that  
to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described  
in this Owner's 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 Owner's 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.

M. J. J. J.  
Inspector's Signature

Commissions MT610  
National Board, State, Province, and Endorsements

Date May 9 20 06

(12/82)

For complete work package, see Work Requests A497060100  
A514060100

Hanger Number	Old Serial Number	Work Request	New Serial Number
E11-3152-G17A	810223	000Z051628	810192
E11-3152-G17B	810225	000Z051628	820188
E11-3152-G19	810083	000Z051628	820178
E11-3152-G25	820207	000Z051628	820206
E11-3153-G13	810226	000Z051697	810076
E11-3157-G10	830030	000Z051590	820204
E11-3157-G20	810129	000Z051590	830037
E11-3158-G10	810160	000Z051617	810009
E11-3158-G17	820052	000Z051698	830030
E11-3158-G31	820118	000Z051698	810023
E11-3160-G11	810185	000Z051590	810181
E11-3161-G13	830020	000Z051697	820136
E11-3164-G18	830052	000Z051698	810212
E11-3164-G23	810024	000Z051698	820159
E11-3177-G23	820203	000Z051697	820207
E11-3177-G31	820015	000Z051697	830039
E11-3184-G07B	810158	000Z051698	810086
E11-3185-G49	810141	000Z051617	810153
E11-3185-G50	820191	000Z051617	810135
E11-4612-G07A	830026	000Z051617	810008
E11-4612-G07B	830027	000Z051617	810199
E21-3144-G23	820209	000Z051572	820199
E21-3145-G16	810108	000Z051572	810019
E21-3147-G05	810052	000Z051699	810072
E21-3147-G06	810084	000Z051699	810205
E51-3174-G32	820114	000Z051716	810014
E51-3175-G01	810071	000Z051762	810137
E51-3175-G25	830050	000Z051716	810105
E51-3175-G26	820061	000Z051716	820128
N21-3109-G62	830039	000Z051759	810129
N21-3109-G66B	820206	000Z051759	830032
N21-3109-G71A	830037	000Z043392	820250
P11-2808-G20	820016	000Z051762	820160
T48-2366-G26A	820130	000Z051769	810193
T48-2366-G26B	810036	000Z051769	820172

# Hydraulic Snubbers Rebuilt and Re-installed in RF11

NIS-2 for 05-007

Sheet 3 of 4

Hanger Number	Old Serial Number	Work Request	New Serial Number
N21-3103-G20B	820133	000Z060062	820133
N21-3109-G64B	830045	000Z052196	830045

## Hydraulic Snubbers Rebuilt with New Load Bearing Parts

NIS-2 for 05-007  
Sheet 4 of 4

Serial	Snubber Number	Size	Description	PO	Work Package
810009	E11-3158-G10	2 1/2 x 5	Cylinder (from snubber 810038), Piston Rod (from snubber 810038), Rod Bearing (from snubber 810038)		A497060100
820160	P11-2808-G20	1 1/2 x 5	Cylinder	273696	A497060100
810199	E11-4612-G07B	2 x 5	Piston and Piston Rod (from snubber 810087)		A497060100

Note that these parts are non-ASME as all Power Piping snubbers were not fabricated to ASME requirements. This list does not include non-load bearing parts (o-rings, piston rings, seal kits, reservoir brackets, tubing).

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-008**

1. Owner Detroit Edison Company Date 02/06/06  
     Name  
     6400 North Dixie Highway, Newport MI 48166  
     Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
     Name  
     6400 North Dixie Highway, Newport MI 48166  
     Address  
     Repair: Target Rock Corp, P.O. NS-403551  
     Testing: NWS Technologies, P.O. NS-332113  
     CO#4  
     Repair Organization P.O. No., Job No., etc.
3. Work Performed by Detroit Edison Company Type Code Symbol N/A  
     Name  
     6400 North Dixie Highway, Newport, MI 48166  
     Address  
     Stamp  
     Authorization No. N/A  
     Expiration Date N/A
4. Identification of System B21 Nuclear Boiler, Main Steam Safety Relief Valve Pilot Assemblies, and Main Bodies.
5. (a) Applicable Construction Code ASME III  
     Class 1 19 71 Edition S'1970 Addenda, NA Code Case  
     (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1992, 92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
SRV Pilot Assemblies	Target Rock	Various, See attached list	N/A	B2104F013A-R	N/A	Replacement	Yes
SRV Main Body Assemblies	Target Rock	Various, See attached list	N/A	B2104F013A-R	N/A	Replacement	Yes

7. Description of Work Rebuild & Test 15 SRV Pilot Assemblies, and 4 SRV Main Bodies as required.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure [ ]  
     Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Applicable Manufacturer's Data Reports to be attached where required.

All 15 SRV Pilot Assemblies, and 4 main Bodies were rebuilt and tested as necessary under Target Rock P.O. NS-403551, and NWS P.O. NS-332113 CO#4. All Parts used are recorded in Work Request B273060200, as well as the Target Rock final document package from refurbishment activities. See attachment (1) list of SRV Main Body Serial Numbers that Pressure Retaining Parts were used on. No welding repairs were performed.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp Original Code Data Report to be supplemented by Section XI Program 05-003 and TR field Service report 05Z-041

Certificate of Authorization No. 1 N/A Expiration Date N/A  
Signed R. H. McNamee Date FEB, 6 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by H. S. B. CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 06-23-05 to 02-06-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

M. J. McNamee Commissions MI 610  
Inspector's Signature National Board, State, Province, and Endorsements  
Date FEB. 06 2006



**Pressure Retaining Parts Installed in SRV Main Bodies**

Main Valve Body S/N#	Pilot Base to body Nut 1-1/8-12 unf. Stock#252- 0565	P.O. # , Lot#, or HT#
339	12ea.	P.O.# 402217, HT#R212
389	12ea.	P.O.# 402217, HT#J250
321	12ea..	P.O.# 402217, HT# K519
371	None	N/A

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-009**

1. Owner Detroit Edison Company Date May 12, 2006  
     6400 North Dixie Highway, Newport MI 48166  
     Name Address Sheet 1 of 2
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
     6400 North Dixie Highway, Newport MI 48166  
     Name Address DECo Maintenance  
     Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Detroit Edison Company Type Code Symbol N/A  
     6400 North Dixie Highway, Newport, MI 48166 Stamp Authorization No. N/A  
     Name Expiration Date N/A  
     Address
4. Identification of System B21 Nuclear Boiler, Main Steam Safety Relief Valve Pilot Assemblies, and Base Assemblies
5. (a) Applicable Construction Code ASME III  
     Class 1 19 71 Edition W71 Addenda, NA Code Case  
     (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1992, 92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
SRV Pilot Assemblies	Target Rock	Various (See attached list)	N/A	B2104F013A-R Various	N/A	Replacement	Yes
SRV Main Body Assemblies	Target Rock	Various (See attached list)	N/A	B2104F013A-R Various	N/A	Replacement	Yes

7. Description of Work During RF11, Replaced all 15 SRV Pilot Assemblies. Replaced Main Bodies on B2104F013D, J, & M.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
     Other ☒ Pressure psi Test Temp.      °F

VT-2 Per 43.000.005 and 24.137.21, Operability Test per 24.137.11

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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.

9. Remarks

Applicable Manufacturer's Data Reports to be attached

All 15 SRV Pilots, and 3 Main Bodies were replaced using Work Requests B350060100 thru B364060100. See attached listing for SRV exchange matrix. SRV Pilots and Main Bodies were refurbished per Section XI Program 05-008 and Work Request B273060200. Discharge flange bolting material (Nuts) were changed out on SRV B2103F013D (2) Nuts, B2103F013J (8) Nuts, and B2103F013M (2) Nuts - 1"-8 UNC-2B, SA 194, Grade 2H, ASME III Class 1, PO. #908045, Heat Code X229. Discharge flange studs were replaced on B2103F013 (1) Stud, B2103F013J (4) Studs, B2103F013M (1) Stud. Stud material 1"-8 UNC-2A, SA 193, Grade B7, ASME Class 1, PO. #906866, Trace Code 282A. Pilot bolting nuts per valve were replaced on SRV's B2103 F013 A, B, C, E, F, G, H, K, L, N, P, and R.. Nuts are 5/8" x 11NC-2B, SA-194 Grade B7, PO#416203, Trace Code 176C

#### CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp Original Code Data Reports to be supplemented by Section XI Program 05-009

Certificate of Authorization No. N/A Expiration Date N/A

Signed R. M. Hambleton, ISI Engineer Date MAY 15, 2006  
Owner or Owner's Designee, Title

#### CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 03-16-06 to 05-16-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mandie Commissions MI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date May 16 2006

(10/94)

## 2006 Refueling Outage SRV Replacement Matrix RF11 - Section XI Program #05-009

- The "Positions" listed with (\*) have had the Main Disc Spring Inspection already performed.
- The "Main Body" SN#s listed with (+) have had the Main Disc/Piston Modification Performed.

### REMOVE

SRV Pilots & Main Bodies listed below were Removed during RF11. (Shaded Areas)

(Note that these SRVs were installed during RF10)

### INSTALL

SRV Pilots & Main Bodies listed below were Installed During RF11 Refuel Outage. (Shaded Areas)

Note that 3 Main Bodies listed below that are shaded, will be complete Valves with Pilots already installed.

Steam Line	Low Set Punct.	N-5 Code Data report	Required Set Point Psig-	PIS Number B2104F013- Position	Valve/Body S/N	Pilot S/N	Solenoid S/N	Valve/Body S/N	Pilot S/N	Solenoid S/N
D	(LSS)	N5-0265	1135	*A	337+	331	310	337+	342	310
C		N5-0301	1135	B	392+	340	311	392+	1197	311
B		N5-0291	1135	*C	391	391	317	391	1184	317
B		N5-0278	1145	*D	328	371	318	389+	327	318
C		N5-0309	1155	E	373+	334	312	373+	336	312
B		N5-0290	1145	*F	327	338	319	327	339	319
B	(LSS)	N5-0321	1135	*G	338+	341	326	338+	1200	326
C		N5-0266	1155	*H	336+	333	313	336+	1199	313
C		N5-0308	1155	*J	332	1182	314	321+	328	314
B		N5-0311	1135	*K	330	373	321	330+	332	321
A		N5-0313	1145	*L	319+	388	320	319+	319	320
A		N5-0268	1145	*M	342	1178	325	339+	321	325
A		N5-0310	1145	*N	341	337	324	341	330	324
D		N5-0322	1155	*P	318+	390	315	318+	318	315
C		N5-0288	1155	R	340+	335	316	340+	1180	316

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-010**

1. Owner <u>Detroit Edison Company</u>	Date <u>May 12, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>(N5-J120-N5-1) Control Rod Drive System</u>	
5. (a) Applicable Construction Code <u>ASME III, Class 1</u> 19 <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
CRD Housing Bolting	RCI	N5-J120-N5-1	N/A	See Matrix	1975	Replacement	N
Control Rod Drive Mechanisms	General Electric	See Matrix	N/A	See Matrix	1975	Replacement	Y

7. Description of Work Replaced Control Rod Drive Mechanisms at various locations and installed replacement Cap Screws on each mechanism to facilitate drive installation during RF11. All removed bolting will be inspected and stored for future installation.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F Performed VT-1 of Bolts

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

3. Replacement bolting was bolting that was previously in service and was VT-1 inspected prior to installation.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-J120-N5-1 to be supplemented by Owners Section XI Program 05-010

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 12 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 03-17-06 to 05-15-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions NB 610  
National Board, State, Province, and  
Endorsements

Date May 15 20 06

(10/94)

For complete work packages, see Work Requests listed on attached matrix.

Nis-2 Attachment for Section XI Program No. 05-010 – RF11 CRDM Exchange

- Replacement bolting (Cap Screws) were replaced on each drive mechanism installed (8 per drive). Bolting material consisted of previously removed and inspected Cap Screws. New CRDM Serial numbers are based on the locations requested prior to the outage and were verified during installation. Replacement CRDM's were previously refurbished per Section XI Program 04-014.

CRDM Location	PIS No.	Old Serial No.	New Serial No.	Cap Screws from	Exchange WR
02-23	C1102D018	3349	6236	26-43	000Z050656
02-43	C1102D033	3162	5984	42-31	000Z050657
10-11	C1102D065	4328	4544	02-27	000Z050658
10-39	C1102D056	4137	3698	22-19 (7) 22-35 (1)	000Z050659
14-19	C1102D061	4538	4585	38-15	000Z050660
14-23	C1102D062	3344	3320	58-27 (7) 22-35 (1)	000Z050661
14-35	C1102D082	4134	3960	34-23 (5) 22-35 (3)	000Z050662
18-15	C1102D076	4321	5555	30-55	000Z050663
22-11	C1102D070	4302	4281	42-43	000Z050664
22-39	C1102D047	4529	4354	46-07	000Z050665
22-47	C1102D042	2526	6161	42-47	000Z050666
26-55	C1102D002	3157	3950	50-15	000Z050668
26-59	C1102D006	4598	3160	46-35 (6) 22-35 (2)	000Z050669
38-39	C1102D160	4513	4569	34-43	000Z050672
42-59	C1102D104	4280	4982	38-03	000Z050673
46-47	C1102D121	3646	4565	42-23	000Z050674
50-35	C1102D172	4437	6179	50-23	000Z050675
54-35	C1102D173	4343	4047	30-15	000Z050677
54-39	C1102D150	4299	5977	26-51	000Z050678

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-012**

1. Owner <u>Detroit Edison Company</u>	Date <u>September 9, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 1</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System	<u>Main Steam Line Drains between Outboard MSIV's and Condenser. This System is an ASME Section XI Class 2 System</u>
5. (a) Applicable Construction Code	<u>ANSI B31.1 -</u>
	<u>D+ 19 71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements	<u>1992-92 Addenda</u>

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B2100F080C	Fisher Controls	6488862	N/A	V10-2008	N/A	Replacement	N

7. Description of Work	<u>Replace valve plug/stem assembly due to corrosion deposits on seating surfaces of plug and cage</u>		
8. Tests Conducted:	Hydrostatic <input type="checkbox"/> Pneumatic <input type="checkbox"/>	Nominal Operating Pressure <input checked="" type="checkbox"/>	Ref. Code Case N-416-2
	Other <input type="checkbox"/> Pressure _____	psi Test Temp. _____ °F	

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement plug / stem assembly was procured per PO# 267193, HT # NX5380G015. Valve was designed to meet ASME III, Class 2 requirements but was not stamped. Code Data Report not available for replacement plug / stem assembly.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data reports to be supplemented by Owners Section XI Program # 05-012

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date September 9, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 8-27-05 to 09-09-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mark Durr Commissions MI 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date Sept. 9 20 05

(10/94)

Reference WR # H605040100 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-013**

1. Owner <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Date <u>August 12, 2005</u> Sheet <u>1</u> of <u>2</u>
2. Plant <u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Unit <u>2</u> <u>DECo Maintenance</u> Repair Organization P.O. No., Job No., etc.
3. Work Performed by <u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address	Type Code Symbol Stamp <u>N/A</u> Authorization No. <u>N/A</u> Expiration Date <u>N/A</u>
4. Identification of System <u>Main and Reheat Steam (N3018)</u>	
5. (a) Applicable Construction Code <u>ANSI B31.7</u> 19 69 Articles <u>1-720 &amp; 1-721</u> (b) Applicable Edition of Section XI Utilized for Repairs or Replacements <u>ANSI B31.1</u> 19 67 Article <u>121</u> <u>1992-W'92</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
PLANT MECHANICAL SNUBBERS	Pacific Scientific	Various	NA	NONE	Various	REPLACEMENTS	N

7. Description of Work Replace mechanical snubbers

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F Functional test & visual inspection

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Attached are listings of Mechanical Snubbers that were changed out during forced outage 05-02. All replacement snubbers were  
Applicable Manufacturer's Data Reports to be attached  
refurbished under A498040100. No parts were replaced during the refurbishment.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp Original Code Data Reports to be supplemented by owners Section XI Program No. 05-013

Certificate of Authorization No. N/A Expiration Date N/A

Signed R. M. Hambleton, Lead ISI Engineer Date August 12, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
or Province of Michigan and employed by HSB CT of  
One State Street, Hartford, CT 06102 have inspected the components described  
in this Owner's Report during the period 06-28-05 to 09-09-05, and state that  
to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described  
in this Owner's 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 Owner's 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.

[Signature] Commissions MTIG10  
Inspector's Signature National Board, State, Province, and Endorsements  
Date Sept. 9 20 05

(12/82)

For complete work package, see Work Request 000Z051979

# Mechanical Snubbers Replaced with Rebuilt Spares

NIS-2 for 05-013  
Page 2 of 2

HANGER NO#	OLD SERIAL NO	NEW SERIAL NO
N30-3256-G51	22403	22366
N30-3256-G55	13150	13167
N30-3256-G57	13188	6827

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-014**

1. Owner <u>Detroit Edison Company</u>	Date <u>August 9, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System	
	<u>Division 1 and Division 2 Emergency Equipment Cooling Water Systems – Supply and Return piping to Drywell Coolers. Division 1 Coolers include Coolers T4700B001, T4700B002. Division 2 Coolers include T4700B003, T4700B004, &amp; T4700B010. (For N-5 Data Reports-See page 2)</u>
5. (a) Applicable Construction Code <u>ASME III,</u>	
<u>Class 2</u> 19 <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements	<u>1992-92 Addenda</u>

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
T4700B001	CTI - Nuclear /	# 1 / # 2	1202/1180	N/A	1975	Replacement	Y
T4700B002	Wisner & Becker	# 3 / # 4	1182/1178	N/A	1975	Replacement	Y
T4700B003	CTI - Nuclear /	# 5 / # 6	1181/1179	N/A	1975	Replacement	Y
T4700B004	Wisner & Becker	# 7 / # 8	1197/1183	N/A	1975	Repair/Replacement	Y
T4700B010	CTI - Nuclear /	# 19 / # 20	1194/1201	N/A	1975	Replacement	Y

7. Description of Work	<u>Replace various Drywell Cooler supply and return End Bell Cover bolting material during gasket replacements during forced outage 05-02. Installation of tube sheet reinforcements necessitated the use of longer bolts. Perform Tube plugging on T4700B003. See sheet 2 of this NIS-2 for material installed.</u>
8. Tests Conducted:	Hydrostatic <input checked="" type="checkbox"/> Pneumatic <input type="checkbox"/> Nominal Operating Pressure <input checked="" type="checkbox"/> Ref. Code Case N-416-2 Other <input type="checkbox"/> Pressure _____ psi      Test Temp. _____ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks All pressure retaining material including bolting material installed meets ASME III, Class 2 requirements. Reference purchase orders for material installed is included on page 2 of this NIS-2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair/Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data reports to be supplemented by Owners Section XI Program # 05-014.

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date August 9 20 05  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 07-03-05 to 08-10-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NI 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date August 10 20 05

(10/94)

For complete list of work packages, see page 2 of this NIS-2.

PIS Number	Work Request Number	Materials Installed / Work Performed	Purchase Order Numbers
T4700B001	000Z052075	32 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 32 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
	000Z051971	Replace gaskets and torqued covers	
T4700B002	000Z052076	32 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 32 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
		For 1/4" Male Pipe Plug Trace Code: MEI	362033
	000Z051972	Replace gaskets and torqued covers	
T4700B003	000Z051970	16 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 16 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
	000Z052077	48 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 48 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
	000Z052119	2 -- Tube Plugs, HT# CHY, SA-479 TP304 Replace gaskets and torqued covers	356971
T4700B004	000Z052136	Replace gaskets and torqued covers	
	000Z052078	70 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 70 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
T4700B010	000Z052079	64 Studs 3/4" - 10 UNC, SA-193 B8, HT# S623 64 Nuts 3/4" - 10 UNC, SA-194 B8, HT# S625 Replace gaskets and torqued covers	402677
	000Z051969	Replace gaskets and torqued covers	

**\*Cooler/Affected N-5 Code Data Reports**

T4700B001 N5-0091, N5-0129, N5-0130  
T4700B002 N5-0091, N5-0111, N5-0131, N5-0113  
T4700B003 N5-0093, N5-0626  
T4700B004 N5-0502  
T4700B010 N5-0093

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-015**

1. Owner <u>Detroit Edison Company</u>	Date <u>September 9, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>N5-015 - Division 2 - Emergency Equipment Cooling Water System - Demineralized Water Supply to Make-up Tank</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 3</u> <u>19</u> <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
P44F402B	Fisher Controls	5916392	N/A	V8-2362	1974	Replacement	Y

7. Description of Work Replace valve plug/stem assembly due to corrosion deposits on seating surfaces of plug and seat.

8. Tests Conducted:    Hydrostatic [ ]    Pneumatic [ ]    Nominal Operating Pressure [X]    Ref. Code Case N-416-2  
                                  Other [ ]    Pressure \_\_\_\_\_    psi    Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement plug / stem assembly was procured per PO# 402761, HT # 725074, SN # AH5095-2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data reports to be supplemented by Owners Section XI Program # 05-015

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date September 9, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 7-20-05 to 9-9-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NBCIP  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date Sept. 9 20 05

(10/94)

Reference WR # 000Z044256 for additional details.

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*  
As Required by the Provisions of the ASME Code, Section III  
Not to exceed One Day's Production

NIS-2 #0515  
SHEET 2 of 2  
P44F402B

Pg. 1 of 1

041-OMD128261

1. Manufactured and certified by FISHER CONTROLS INT'L LLC, 205 SOUTH CENTER STREET, MARSHALLTOWN, IA 50158  
(name and address of NPT Certificate Holder)

2. Manufactured for Detroit Edison Co, P.O. Box 1659, Detroit, MI 48231  
(name and address of purchaser)

3. Location of installation Fermi II Power Plant, 6400 N. Dixie Highway, Newport, MI 48166  
(name and address)

4. Type 10A4611 Rev. C, IU3890 SA479 S31600, ASTM 75.0 KSI, 125 KSI N/A 2005  
Rev B A276 S31600  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)

5. ASME Code, Section III: 1971 Winter 1971 3 N-62-2  
(edition) (addenda date) (class) (Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(no.)

7. Remarks: Design: ASME BPVC Sec III, 1971 Edition, Winter 1971 Addenda, Class 3  
Other: ASME BPVC Sec III, 1989 Edition, No Addenda, Class 3

8. Nom. thickness (in.) N/A Min. design thickness (in.) N/A Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A

9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

	Part or Appurtenance Serial Number	Heat Number
(1)	AH5096-1	E40940 (PLUG)
(2)		725394 (STEM)
(3)		
(4)		
(5)	AH5096-2	E40940 (PLUG)
(6)		726074 (STEM)
(7)		
(8)		
(9)		
(10)		
(11)		
(12)		
(13)		
(14)		
(15)		
(16)		
(17)		
(18)		
(19)		
(20)		
(21)		
(22)		
(23)		
(24)		
(25)		

	Part or Appurtenance Serial Number	Heat Number
(26)		
(27)		
(28)		
(29)		
(30)		
(31)		
(32)		
(33)		
(34)		
(35)		
(36)		
(37)		
(38)		
(39)		
(40)		
(41)		
(42)		
(43)		
(44)		
(45)		
(46)		
(47)		
(48)		
(49)		
(50)		

10. Design Pressure 80 psi. Temp. 70 °F. Hydro. test pressure N/A at temp. °F  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 2 and 3 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

## CERTIFICATION OF DESIGN

Design specifications certified by Sylvester H. Noetzel P.E. State MI Reg. no. 14386  
(when applicable)

Design report\* certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Plug/Stem  
conforms to the rules of construction of the ASME Code, Section III.

NPT Certificate of Authorization No. 1930 Expires 10-27-2007

Date 7-1-05 Name FISHER CONTROLS INT'L LLC  
(NPT Certificate Holder)

Signed [Signature]  
(authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or Province of Iowa  
and employed by Hartford Steam Boiler of CT  
of Hartford, CT have inspected these items described in this Data Report on 7-1-05 and state that to the

best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has  
been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report.  
Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected  
with this inspection.

Date 7-1-05 Signed [Signature] Commissions 822 IA  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements), state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-016**

1. Owner <u>Detroit Edison Company</u>	Date <u>September 9, 2005</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>T &amp; B No. 20 Emergency Diesel Generator #13 Service Water System</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 3</u> <u>19</u> <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R3000F140B	William Powell	66500-2	N/A	V15-2074	N/A	Replacement	Y

7. Description of Work Replace valve disc since disc guide pin is worn and corroded. Corrosion is not abnormal considering application and service conditions.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Ref. Code Case N-416-2  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement disc was procured per PO# 402713, HT #05115, SN # X173. Replacement disc was manufactured by Weir Valves.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 20 to be supplemented by Owners Section XI Program # 05-016

Certificate of Authorization No. \_\_\_\_\_ N/A \_\_\_\_\_ Expiration Date \_\_\_\_\_ N/A \_\_\_\_\_

Signed R.M. Hambleton Lead ISI Engineer [Signature] Date September 9, 2005  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 8-15-05 to 9-9-05, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] \_\_\_\_\_ Commissions MI 010  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date Sept. 9 20 05

(10/94)

Reference WR # 000z042033 for additional details.

**FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\***

As Required by the Provisions of the ASME Code, Section III  
Not to Exceed One Day's Production

Pg. 1 of 2

NIS 2# 25-016  
Sheet 2 of 2  
R2000 F1402

1. Manufactured and certified by Weir Valves & Controls USA, Inc. 285 Canal Street Salem, MA 01970  
(name and address of NPT Certificate Holder)
2. Manufactured for Detroit Edison, 6400 Dixie Hwy, Newport, MI 48166  
(name and address of Purchaser)
3. Location of installation Fermi 2, 6400 Dixie Hwy, Newport, MI 48166  
(name and address)
4. Type: \*60098 Rev. E SA 216, GR. WCB 76,448 PSI N/A 2005  
(drawing no.) (nat'l. spec. no.) (tensile strength) (CRN) (year built)
5. ASME Code, Section III, Division 1: 1971 WINTER 1971 2 N/A  
(edition) (addenda date) (class) (Code Case no.)
6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A N/A N/A Date N/A  
(no.)
7. Remarks: Cust. Item 01 WVC Item 10 Qty. 1. Disc POWELL P/N: 260600982000017  
(WVC S.O. 71891) \*Dwg. Prepared by Powell. This certification meets required information of  
ASME Section III 1971 Edition Winter 1971 addenda.
8. Nom. Thickness (in.) 1.06 Min. design thickness (in.) .823 Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A
9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. In Numerical Order
(1) HT: 05115 S/N: X173	N/A
(2)	
(3)	
(4)	
(5)	
(6)	
(7)	
(8)	
(9)	
(10)	
(11)	
(12)	
(13)	
(14)	
(15)	
(16)	
(17)	
(18)	
(19)	
(20)	
(21)	
(22)	
(23)	
(24)	
(25)	

Part or Appurtenance Serial Number	National Board No. In Numerical Order
(26)	
(27)	
(28)	
(29)	
(30)	
(31)	
(32)	
(33)	
(34)	
(35)	
(36)	
(37)	
(38)	
(39)	
(40)	
(41)	
(42)	
(43)	
(44)	
(45)	
(46)	
(47)	
(48)	
(49)	
(50)	

10. Design pressure N/A psi. Temp. N/A °F. Hydro. test pressure N/A At temp. °F  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in Items 2 and 3 on this Data Report is included on each sheet is numbered and the number of sheets is recorded at the top of this form.

Certificate Holders' Serial Nos. HT: 05115 S/N: X173 through N/A

## CERTIFICATION OF DESIGN

Design specifications certified by N/A P.E. State N/A Reg. No. N/A  
(when applicable)Design report \* certified by N/A P.E. State N/A Reg. No. N/A  
(when applicable)

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Disc  
conforms to the rules of construction of the ASME Code, Section III, Division 1.NPT Certificate of Authorization No. N2607 Expires 6-13-07Date 7/1/05 Name Weir Valves & Controls USA, Inc. Signed [Signature]  
(NPT Certificate Holder) (authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of

MA And employed by HSBCT  
of Hartford, CT have inspected these items described in this Data Report on 7/1/05 and state that to the

Best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III, Division 1. Each part listed has been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 7/1/05 Signed [Signature] Commissions MA1657 ABCE  
(authorized inspector) (Natl Bd. (incl. Endorsements) and state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

05-017A

05-017B

1. Owner <u>Detroit Edison Company</u>	Date <u>May 3, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 3</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Residual Heat Removal (RHR) System Division 1 and Division 2 Piping (N5-0307)</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 2</u> <u>19</u> <u>71</u> Edition <u>W'71</u> Addenda <u>N62-4</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
E1100F031A	William Powell	63872-1	N/A	V8-2103	1975	Replaced	Y
E1100F031A	Weir Valves & Control USA Inc.	2-52861-A	N/A	V30-1627	2006	Replacement	Y
E1100F031B	William Powell	63872-2	N/A	V8-2104	1975	Replaced	Y
E1100F031B	Weir Valves & Control USA Inc.	1-52861-A	N/A	V30-1628	2006	Replacement	Y

7. Description of Work	<u>Replace valves E1100F031A &amp; E1100F031B due to seat leakage and seat damage identified in RF10.</u>		
8. Tests Conducted:	Hydrostatic [ ]      Pneumatic [ ]	Nominal Operating Pressure [ X ]	Code Case N-416-2
	Other [ X ]      Pressure	psi      Test Temp. _____ °F	Performed RT of welds

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement valves procured per PO # 418450. Material SA216-WCB, Serial No. 2-52861-A for E1100F031A and 1-52861-A for E1100F031B.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-0307 to be supplemented by Owners Section XI Program # 05-017A & 017B

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer [Signature] Date MAY 3 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 3-24-06 to 5-10-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions MI 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date May 10 2006

(10/94)

Reference WR # 000Z043607 and 000Z050737 for additional details.



Certificate Holder's Serial No. 1-52861-A8. Design conditions 480 psi 335 °F or valve pressure class 300 (1)  
(pressure) (temperature)9. Cold working pressure 740 psi at 100°F10. Hydrostatic test 1125 psi. Disk differential test pressure 825 psi11. Remarks: COVER LUG: SA 516-70 HT.#: S01841 S/N: 1, DISC POST: SA 105 GR II HT.#: 1180275 S/N: 1, DISC LUGS: HT# S01840  
BEARING COVER: SA 516-70 HT#: M65877, STUD: SA193 GR B7 HT.#: S71215 TR#: AA26, STUD: SA193 B7 HT #: 15145  
H.HEX NUTS: SA194 2H HT.#: 222424 TR: GRW, H.HEX NUTS: SA194 2H HT #: 829599

## CERTIFICATION OF DESIGN

Design specification certified by Lawrence D. Burr P.E. State MI Reg. no. 33999  
(when applicable)Design report certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATION OF COMPLIANCE

We certify that the statements made in this report are correct and that pump or valve conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2606 Expires 6-13-07Date 4/2/06Name Weir Valves & Controls USA Inc.  
(N Certificate Holder)Signed [Signature]  
(authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of MA, and employed by HSBCT of Hartford, CT have inspected the pump, or valve, described in this Data Report on 4/2/06, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III, Division 1.

By signing this Certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 4/2/06Signed [Signature] Commission MA1651 ABNI

(Authorized Inspector)

(Nat'l. Bd. (incl. endorsement(s) state or prov and no)

(1) For manually operated valves only.

\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form (12/88) This form (E00037) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

8. Design conditions 480 psi 335 °F or valve pressure class 300 (1)  
(pressure) (temperature)

9. Cold working pressure 740 psi at 100°F

10. Hydrostatic test 1125 psi. Disk differential test pressure 825 psi

11. Remarks: COVER LUG: SA 516-70 HT.#: S01841 S/N: 2, DISC POST: SA 105 GR II HT. #: 1180275 S/N: 2, DISC LUGS: HT# S01840  
BEARING COVER: SA 516-70 HT#: M65877, STUD: SA193 GR B7 HT.#: S71215 TR#: AA26, STUD: SA193 B7 HT #: 15145  
H.HEX NUTS: SA194 2H HT. #: 222424 TR: GRW, H.HEX NUTS: SA194 2H HT #: 829599, H.HEX NUTS: SA194 2H HT # 46287

### CERTIFICATION OF DESIGN

Design specification certified by Lawrence D. Burr P.E. State MI Reg. no. 33999  
(when applicable)

Design report certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

### CERTIFICATION OF COMPLIANCE

We certify that the statements made in this report are correct and that pump or valve conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2606

Expires 6-13-07

Date 3/30/06

Name Weir Valves & Controls USA Inc.  
(N Certificate Holder)

Signed [Signature]  
(authorized representative)

### CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of MA, and employed by HSBCT of Hartford, CT have inspected the pump, or valve, described in this Data Report on 3/30/06, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III, Division 1.

By signing this Certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 3/30/06 Signed [Signature]

Commission MA 1651 ABNI

(Authorized Inspector)

(Nat'l. Bd. (incl. endorsement(s) state or prov and no)

(1) For manually operated valves only.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**05-020**

1. Owner <u>Detroit Edison Company</u>	Date <u>June 21, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Jcb No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Reactor Core Isolation Cooling System (N5-0211) RCIC Minimum Flow Valve</u>	
5. (a) Applicable Construction Code <u>ASME III, Class 2</u> 19 <u>71</u> Edition <u>W71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
E5150F019	Rockwell International	LA-698	N/A	V8-2230	1974	Replaced	Y
E5150F019	Velan Valve	052013	N/A	V30-1576	2005	Replacement	Y

7. Description of Work Install replacement valve per EDP-32366

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8. Tests Conducted:    Hydrostatic ☐    Pneumatic ☐    Nominal Operating Pressure ☒   
                                  Other ☒ Pressure \_\_\_\_\_ psi    Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Replacement valve procured per PO# 394775, Serial No. 052013, SA-105, ASME III, Class 2. Additional ASME III, Class 2 material installed as part of installation included the following: 2" Socket welded coupling, 6000#, SA-105, Heat # 9132 procured per PO # 416014, 2" Sch. 80 pipe, SA-106 Grade B, Heat #351823 procured per PO # 394664, and 2" Sch. 160 pipe, SA-106 Grade B, Heat # 151234 procured per PO # 368778.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original data report N5-0211 to be supplemented by Owners Section XI Program 05-020

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date JUNE 21, 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 03-22-04 to 07-18-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions NB 610  
National Board, State, Province, and  
Endorsements

Date July 18 2004

(10/94)

For complete work package, see Work Request # 000Z040063







#052013

8. Design conditions 1250 psi 575 °F or valve pressure class - (1)  
(pressure) (temperature)
9. Cold working pressure 2220 psi at 100°F
10. Hydrostatic test Shell: 3350 psig. Disc differential test pressure 1296 psi
11. Remarks: MATERIALS TO ASME SEC.II PART-A CODE EDITION 1998; ADDENDA: NONE

## CERTIFICATE OF DESIGN

Design Specification certified by Lawrence D. Boer P.E. State MI, USA Reg.no. #33999  
Design report certified by S. ISBITSKY P.E. State QUE. CANADA Reg. no. #22115

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump or valve conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N2797-2 (N) Expires APRIL 20, 2007

Date 16 June 2005 Name VELAN INC.  
(N Certificate Holder)

Signed [Signature]  
(authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of QUEBEC and employed by REGIE DU BATIMENT of QUEBEC have inspected the pump, or valve, described in this Data Report on June 16 - 2005, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III, Division 1.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 June 16/2005 Signed [Signature]  
(Authorized Inspector)

J.P.FACHINETTI QC# 13813  
Commissions REGIE DU BATIMENT DU QUEBEC  
(Nat'l. Bd. (incl. Endorsements) and state or prov. and no.)

(1) For manually operated valves only.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-023**

1. Owner <u>Detroit Edison Company</u>	Date <u>May 3, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 1</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Reactor Recirculation System Piping (N5-250)</u>	
5. (a) Applicable Construction Code	ASME III 19 68 NPVC (Valves)
Class 1	19 71 Edition W ' 71 Addenda N/A Code Case
	(piping)
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements	<u>1992-92 Addenda</u>

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B3105F031A	Lunkenheimer	69-GE-14123-31	N/A	V8-2003	1971	Replacement	N

7. Description of Work Replace Body to bonnet bolting during maintenance activities to replace the scored stem.

8. Tests Conducted: Hydrostatic [ ] Pneumatic [ ] Nominal Operating Pressure [ X ]  
Other [ X ] Pressure psi Test Temp. \_\_\_\_\_ °F Performed VT-1 of studs

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement studs were cut from all-thread that was procured per PO # 980441 and PO # 982520. Material - 1 - 3/4"-8 UN-2A, SA-193 Grade B7, Heat # P911 and # X297 respectively. Replacement Nuts were procured per PO # 980442. Material - 1 - 3/4"-8 UN-2B, SA-194 Grade 7, Heat # S697 and M313.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-250 to be supplemented by Owners Section XI Program # 05-023

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 3 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 3-10-06 to 6-5-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions MT 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date June 5 20 06

(10/94)

Reference WR # 000Z050487 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-024**

1. Owner	<u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Date	<u>March 17, 2006</u>
		Sheet	<u>1 of 2</u>
2. Plant	<u>Fermi 2 Nuclear Power Plant</u> Name <u>6400 North Dixie Highway, Newport MI 48166</u> Address	Unit	<u>2</u>
3. Work Performed by		Deco Maintenance	
<u>Detroit Edison Company</u> Name <u>6400 North Dixie Highway, Newport, MI 48166</u> Address		Repair Organization P.O. No., Job No., etc.	
		Type Code Symbol	<u>N/A</u>
		Stamp	
		Authorization No.	<u>N/A</u>
		Expiration Date	<u>N/A</u>
4. Identification of System	<u>T &amp; B No. 20 Emergency Diesel Generator #14 Service Water System</u>		
5. (a) Applicable Construction Code	ASME III Class 3 19 71 Edition 71 Addenda N/A Code Case		
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements	<u>1992-92 Addenda</u>		

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R3000F140D	William Powell	66500-4	N/A	V15-2030	N/A	Replacement	Y

7. Description of Work	<u>Replace valve disc since disc guide pin is worn and corroded. Corrosion is not abnormal considering application and service conditions.</u>		
8. Tests Conducted:	Hydrostatic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Nominal Operating Pressure <input checked="" type="checkbox"/>	Ref. Code Case N-416-2	
	Other <input type="checkbox"/> Pressure _____ psi Test Temp. _____ °F		

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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.

(10/94)

Form NIS-2 (Back)

9. Remarks Replacement disc was procured per PO #402456, HT # 04348, SN # V1137. Replacement disc was manufactured by Weir Valves.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 20 to be supplemented by Owners Section XI Program # 05-024

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer R.M. Hambleton Date MARCH 17 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 12-25-05 to 03-17-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NI 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date MARCH 17 20 06

(10/94)

Reference WR # 000ZD42035 for additional details.

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*  
As Required by the Provisions of the ASME Code, Section III  
Not to Exceed One Day's Production

LOT#3/LINE:2

05-024  
SHEET 2 OF 2

Pg. 1 of 2

1. Manufactured and certified by Weir Valves & Controls USA, Inc. 285 Canal Street Salem, MA 01970  
(name and address of NPT Certificate Holder)
2. Manufactured for Detroit Edison, 6400 Dixie Hwy, Newport, MI 48166  
(name and address of Purchaser)
3. Location of installation Fermi 2, 6400 Dixie Hwy, Newport, MI 48166  
(name and address)
4. Type: \*60098 Rev. E SA 216, GR. WCB 77,885 PSI N/A 2005  
(drawing no.) (mat'l spec. no.) (tensile strength) (CRN) (year built)
5. ASME Code, Section III, Division 1: 1971 WINTER 1971 2 N/A  
(edition) (addenda date) (class) (Code Case no.)
6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A N/A N/A Date N/A  
(no.)
7. Remarks: Cust. Item 02 WVC Item 20 Qty. 1 Disc POWELL P/N: 260500982000017  
(WVC S.O. 71014) \*Dwg. Prepared by Powell. This certification meets required information of  
ASME Section III 1971 Edition Winter 1971 addenda.
8. Nom. Thickness (in.) 1.08 Min. design thickness (in.) .323 Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A
9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. In Numerical Order	Part or Appurtenance Serial Number	National Board No. In Numerical Order
(1) HT 04345 S/N: V1137	N/A	(26)	
(2)		(27)	
(3)		(28)	
(4)		(29)	
(5)		(30)	
(6)		(31)	
(7)		(32)	
(8)		(33)	
(9)		(34)	
(10)		(35)	
(11)		(36)	
(12)		(37)	
(13)		(38)	
(14)		(39)	
(15)		(40)	
(16)		(41)	
(17)		(42)	
(18)		(43)	
(19)		(44)	
(20)		(45)	
(21)		(46)	
(22)		(47)	
(23)		(48)	
(24)		(49)	
(25)		(50)	

10. Design pressure N/A psi. Temp. N/A °F. Hydro. test pressure N/A At temp. N/A  
(When applicable)

\*Supplemental Information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) Information in Items 2 and 3 on this Data Report is included on each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/65)

This form (E30049) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Reprint (7/71)



LOT#3 / LINE: 2

FORM N-2 (Back - Pg. 2 of 2)

Certificate Holders' Serial Nos. HT: 04348 S/N: V1137 through N/A

CERTIFICATION OF DESIGN

Design specifications certified by N/A P.E. State N/A Reg. No. N/A  
(when applicable)  
Design report \* certified by N/A P.E. State N/A Reg. No. N/A  
(when applicable)

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Disc  
conforms to the rules of construction of the ASME Code, Section III, Division 1.

NPT Certificate of Authorization No. N2507 Expires 6-13-07

Date 1/27/05 Name Weir Valves & Controls USA, Inc. Signed [Signature]  
(NPT Certificate holder) (authorized representative)

CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of

MA And employed by HSBCT  
of Hartford, CT have inspected these items described in this Data Report on 1-27-05, and state that to the  
Best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section  
III, Division 1. Each part listed has been authorized for stamping on the date shown above.  
By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described  
in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or  
loss of any kind arising from or connected with this inspection.

Date 1-27-05 Signed KW [Signature] Commissions MA 1653 N  
(authorized inspector) [Nat'l Bd. (incl. Endorsements) and state or prov. and no.]



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**05-025**

1. Owner <u>Detroit Edison Company</u>	Date <u>March 17, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>T &amp; B No. 20 Emergency Diesel Generator #14 Service Water System</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 3</u> <u>19</u> <u>71</u> Edition <u>71</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R300F401	Fisher Controls	6303480	4569	V15-2076	1979	Replacement	Y

7. Description of Work Replace valve disc and stem assembly to facilitate valve reassembly. The existing parts were rust stained and maintenance elected to replace these parts to avoid extensive cleaning. Corrosion is not abnormal considering application and service conditions.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Ref. Code Case N-416-2  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement disc and stem assembly was procured per PO# 402689. HT # 730715. SN # A10684-2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 20 to be supplemented by Owners Section XI Program # 05-025

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer R.M. Hambleton Date March 17 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 12-05-05 to 03-17-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NI 610  
Inspector's Signature National Board, State, Province, and  
Endorsements

Date March 17 20 06

(10/94)

Reference WR # 000Z043504 for additional details.

## NUCLEAR PARTS AND APPURTENANCES\*

As Required by the Provisions of the ASME Code, Section III

Not to exceed One Day's Production

05-025

Sheet  
20F2

Pg. 1 of 1

041-OMIDT26729

1. Manufactured and certified by

FISHER CONTROLS INT'L LLC, 205 SOUTH CENTER STREET, MARSHALLTOWN, IA 50158

(name and address of NPT Certificate Holder)

2. Manufactured for

Detroit Edison Co. PO Box 1659, Detroit, MI 48231

(name and address of purchaser)

3. Location of installation

Fermi II Power Plant, 6400 N. Dixie Highway, Newport, MI 48166

(name and address)

4. Type

11A5326 Rev. E

SA479 S31603

70 KSI

N/A

2005

(drawing no.)

(mat'l. spec. no.)

(tensile strength)

(CRN)

(year built)

5. ASME Code, Section III:

1971

Winter 1971

3

N/A

(edition)

(addenda date)

(class)

(Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only)

N/A

Revision

N/A

Date

N/A

(no.)

7. Remarks:

Design: ASME BPVC Sec III, 1971 Edition, Winter 1971 Addenda, Class 3

Other: ASME BPVC Sec III, 1989 Edition, No Addenda, Class 3

8. Nom. thickness (in.) N/A Min. design thickness (in.) N/A Dia. ID (ft &amp; in.) N/A Length overall (ft &amp; in.) N/A

9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

	Part or Appurtenance Serial Number	Heat Number
(1)	A10684-1	730715
(2)	A10684-2	730715
(3)	A10684-3	730715
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		
(11)		
(12)		
(13)		
(14)		
(15)		
(16)		
(17)		
(18)		
(19)		
(20)		
(21)		
(22)		
(23)		
(24)		
(25)		

	Part or Appurtenance Serial Number	Heat Number
(26)		
(27)		
(28)		
(29)		
(30)		
(31)		
(32)		
(33)		
(34)		
(35)		
(36)		
(37)		
(38)		
(39)		
(40)		
(41)		
(42)		
(43)		
(44)		
(45)		
(46)		
(47)		
(48)		
(49)		
(50)		

10. Design Pressure 100 psi. Temp. 80 °F. Hydro. test pressure N/A at temp. °F  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 2 and 3 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

## CERTIFICATION OF DESIGN

Design specifications certified by Sylvester H. Noetzel P.E. State MI Reg. no. 14386  
(when applicable)

Design report\* certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) Plug/Stem  
conforms to the rules of construction of the ASME Code, Section III.

NPT Certificate of Authorization No. 1930 Expires 10-27-2007

Date 10/31/05 Name FISHER CONTROLS INT'L LLC

(NPT Certificate Holder)

Signed

[Signature]  
(authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or Province of Iowa  
and employed by Hartford Steam Boiler of CT

of Hartford, CT have inspected these items described in this Data Report on 11-1-05 and state that to the  
best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has  
been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report.  
Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected  
with this inspection.

Date 11-1-05 Signed

[Signature]  
(Authorized inspector)

Commissions

822 IA.  
(Nat'l. Bd. (incl. endorsements) state or prov. and no.)

## 06-001

Form NIS-2 (Back)

9. Remarks: The replacement disc was originally procured per PO# 1E 86734 and was initially installed in valve R3000F140A, V15-2098. It was refurbished per ASME Section XI Program #04-017, SA216 Grade WCB, Serial No. CM7423, Heat 2055.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-013 to be supplemented by Owners Section XI Program #06-001.

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MARCH 17 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 01-13-06 to 03-17-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mark Dure Commissions MI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date March 17 20 06

(10/94)

For complete work package, see Work Request 000Z042034.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-002**

1. Owner Detroit Edison Company Date May 11, 2006  
Name  
6400 North Dixie Highway, Newport MI 48166 Sheet 1 of 12  
Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
Name  
6400 North Dixie Highway, Newport MI 48166
3. Work Performed by Detroit Edison Company Deco Maintenance  
Repair Organization P.O. No., Job No., etc.  
Type Code Symbol N/A  
Stamp  
Authorization No. N/A  
Expiration Date N/A
4. Identification of System Division Emergency Equipment Cooling Water Systems - Supply and Return piping to Drywell Cooler  
T4700B004 N-5 Data Report-N5-0502
5. (a) Applicable Construction Code ASME III, Class 2 19 71 Edition 71 Addenda N/A Code Case  
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements 1992-92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
T4700B004	CTI - Nuclear / Wismer & Becker	# 7 / # 8	1197/1183	N/A	1975	Replaced	Y
T4700B004	Aerofin Corporation	960612	771	N/A	1996	Replacement	Y
T4700B004	Aerofin Corporation	960608	767	N/A	1996	Replacement	Y
T4700B004	Aerofin Corporation	960606	765	N/A	1996	Replacement	Y
T4700B004	Aerofin Corporation	960610	769	N/A	1996	Replacement	Y

7. Description of Work Replace Drywell Cooler Cooling Coils for T4700B004, supply and return piping for cooler T4700B004, and including the installation of new isolation valves for T4700B004 per EDP-33690 during RF11. See sheets 2 through 5 of this NIS-2 for a complete listing of material installed.

8. Tests Conducted: Hydrostatic ☒ Pneumatic ☐ Nominal Operating Pressure ☒ Ref. Code Case N-416-2  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks All pressure retaining material including bolting material installed meets ASME III, Class 2 requirements. Reference purchase orders for material installed is included on page 2 through 5 of this NIS-2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-0502 to be supplemented by Owners Section XI Program # 06-002.

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 11 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 2-21-06 to 6-08-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions MT 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date June 8 2006

(10/94)

For additional details of material installation reference work requests 000z053439, 000z060030, and 000z060041.

EDP 33690 MATERIAL VERIFICATION MATRIX			
Index Item: A4	Dwg.: WM-5275-1	Division: 2	WR: 000Z053439
Piece No.	Description	Heat /Trace/Ser. No	Purchase Order
19	Existing 2" Pipe	N/A	N/A
191	2" 3000# SW Cpl'g	9396	PO # 416067
192	2" Pipe Sch. 80	00A050856	PO # 416067
20	2" Elbow	76259	PO # 416067
21	2" Pipe Sch. 80	00A050856	PO # 416067
22	2" Elbow	76259	PO # 416067
23	2" Pipe Sch. 80	00A050856	PO # 416067
230	2" Tee	76110	PO # 416067
231	2" x 3/4" Red. Insert	GG04	PO # 416067
232	3/4" Nipple	466854	PO # 354114
233	3/4" Valve P4400F1075	S/N 29 AYT	PO # 394643
234	2" Pipe Sch. 80	00A050856	PO # 416067
24	2" Elbow	76259	PO # 416067
25	2" Pipe Sch. 80	00A050856	PO # 416067
26	2" Tee	76110	PO # 416067
27	2" Pipe Sch. 80	00A050856	PO # 416067
28	2" Valve P4400F247	S/N 38 BFB	PO # 418479
29	2" Pipe Sch. 80	00A050856	PO # 416067
30	2" Tee	76110	PO # 416067
31	2" x 1-1/2" Red. Insert	GG04	PO # 416067
32	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
33	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
34	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
34A	Threaded Rod	474A	PO # 984718
34B	Nuts	492A	PO # 984775
34C	Gasket	N/A	N/A
35	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
36	1-1/2" Elbow	75807	PO # 416067
37	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
38	1-1/2" Elbow	75807	PO # 416067
SN# 960612	COOLING COIL	S/N 960612	PO # 313960
39	2" x 1-1/2" Red. Insert	GG04	PO # 416067
40	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
41	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
42	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
42A	Threaded Rod	474A	PO # 984718
42B	Nuts	492A	PO # 984775
42C	Gasket	N/A	N/A
43	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
44	1-1/2" Elbow	75807	PO # 416067
45	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
46	1-1/2" Elbow	75807	PO # 416067
SN# 960608	COOLING COIL	S/N 960608	PO # 313960
50	2" Pipe Sch. 80	00A050856	PO # 416067
51	2" Valve P4400F249	S/N 39 BFB	PO # 418479
52	2" Pipe Sch. 80	00A050856	PO # 416067
53	2" Tee	76110	PO # 416067
54	2" x 1-1/2" Red. Insert	GG04	PO # 416067



EDP 33690 MATERIAL VERIFICATION MATRIX			
Index Item: A4	Dwg.: WM-5275-1	Division: 2	WR: 000Z053439
Piece No.	Description	Heat /Trace/Ser. No	Purchase Order
55	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
56	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
57	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
57A	Threaded Rod	474A	PO # 984718
57B	Nuts	492A	PO # 984775
57C	Gasket	N/A	N/A
58	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
59	1-1/2" Elbow	75807	PO # 416067
60	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
61	1-1/2" Elbow	75807	PO # 416067
SN 690606	COOLING COIL	S/N 960606	PO # 313960
62	2" x 1-1/2" Red. Insert	GG04	PO # 416067
63	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
64	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
65	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
65A	Threaded Rod	474A	PO # 984718
65B	Nuts	492A	PO # 984775
65C	Gasket	N/A	N/A
66	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
67	1-1/2" Elbow	75722	PO # 416148
68	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
69	1-1/2" Elbow	75722	PO # 416148
SN# 960610	COOLING COIL	S/N 960610	PO # 313960
Index Item A11	Dwg: M-5240-1		WR 000Z060041
Piece No. 505	3/4" S/S Coupling	DKA	PO # 416251
Index Item A12	Dwg: M-5241-1		WR 000Z060041
Piece No. 500	1" S/S Pipe	43801	PO # 416067
Piece No. 900	1 1/2" S/S Coupling	56505	PO #416251

EDP 33690 MATERIAL VERIFICATION MATRIX			
Index Item: A5	Dwg.: WM-5282-1	Division: 2	WR: 000Z053439
			000Z060041
Piece No.	Description	Heat /Trace/Ser. No	Purchase Order
24	Existing Pipe	N/A	N/A
23	Existing Elbow	N/A	N/A
68	2" Pipe Sch. 80	00A050856	PO # 416067
69	2" Tee	76110	PO # 416067
70	Existing TEW	N/A	N/A
71	Existing Coupling	N/A	N/A
52	Existing 1 1/2" Pipe	N/A	N/A
53	Existing Reducer	N/A	N/A
54	Existing Tee	N/A	N/A
55	Existing Reducer	N/A	N/A
56	Existing 2" Pipe	N/A	N/A
70	2" Pipe Sch. 80	00A050856	PO # 416067
71	2" 3000# SW Cpl'g	9209	PO # 416067
77	2" Valve P4400F248	S/N 09BFB	PO # 418479
711	2" x 1 1/2" Red. Insert	GG04	PO # 416067
79	2" Tee	76110	PO # 416067
80	2" x 1-1/2" Red. Insert	GG04	PO # 416067
81	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
82	1-1/2" Elbow	75722	PO # 416148
83	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
84	1-1/2" Elbow	75722	PO # 416148
841	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
85	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
86	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
86A	Threaded Rod	474A	PO # 984718
86B	Nuts	492A	PO # 984775
86C	Gasket	N/A	N/A
87	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
88	1-1/2" Elbow	75807	PO # 416067
SN# 960608	COOLING COIL	S/N 960608	PO # 313960
89	2" Pipe Sch. 80	00A050806	PO # 416067
90	2" Elbow	76259	PO # 416067
91	2" x 1-1/2" Red. Insert	GG04	PO # 416067
92	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
93	1-1/2" Elbow	75722	PO # 416148
931	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
94	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
95	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
95A	Threaded Rod	474A	PO # 984718
95B	Nuts	492A	PO # 984775
95C	Gasket	N/A	N/A
96	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
97	1-1/2" Elbow	75807	PO # 416067
SN# 960612	COOLING COIL	S/N 960612	PO # 313960
98	2" Pipe Sch. 80	00A050856	PO # 416067
99	2" Elbow	76259	PO # 416067

EDP 33690 MATERIAL VERIFICATION MATRIX			
Index Item: A5	Dwg.: WM-5282-1	Division: 2	WR: 000Z053439
Piece No.	Description	Heat /Trace/Ser. No	Purchase Order
100	2" Pipe Sch. 80	00A050856	PO # 416067
101	2" Elbow	76259	PO # 416067
102	2" Pipe Sch. 80	00A050856	PO # 416067
103	2" 3000# SW Cpl'g	9209	PO # 416067
104	2" x 1 1/2" Red. Insert	GG04	PO # 416067
10	Existing 1 1/2" Pipe	N/A	N/A
11	Existing Reducer	N/A	N/A
12	Existing Tee	N/A	N/A
68	Existing TEW	N/A	N/A
69	Existing Coupling	N/A	N/A
13	Existing Reducer	N/A	N/A
14	Existing Pipe	N/A	N/A
109	2" Valve P4400F250	S/N 10BFB	PO # 418479
110	2" Pipe Sch. 80	00A050856	PO # 416067
111	2" Tee	76110	PO # 416067
112	2" x 1-1/2" Red. Insert	GG04	PO # 416067
113	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
114	1-1/2" Elbow	75722	PO # 416148
115	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
116	1-1/2" Elbow	75722	PO # 416148
1161	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
117	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
118	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
118A	Threaded Rod	474A	PO # 984718
118B	Nuts	492A	PO # 984775
118C	Gasket	N/A	N/A
119	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
120	1-1/2" Elbow	75807	PO # 416067
SN# 960610	COOLING COIL	S/N 960610	PO # 313960
121	2" Pipe Sch. 80	00A050856	PO # 416067
122	2" Elbow	76259	PO # 416067
123	2" x 1-1/2" Red. Insert	GG04	PO # 416067
124	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
125	1-1/2" Elbow	75722	PO # 416148
1251	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
126	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
127	1-1/2" 150# RF Flange	3526ANF2 WFI	PO # 416067
127A	Threaded Rod	474A	PO # 984718
127B	Nuts	492A	PO # 984775
127C	Gasket	N/A	N/A
128	1-1/2" Pipe Sch. 80	3M50192	PO # 416067
129	1-1/2" Elbow	75807	PO # 416067
SN# 960606	COOLING COIL	S/N 960606	PO # 313960

**FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES**

As Required by the Provisions of the ASME Code , Section III, Div. 1

Pg. 1 of 2

1. Manufactured by Flowserve Corporation. 1900 S. Saunders St.. Raleigh. NC 27603  
(Name and Address of N Certificate Holder)

2. Manufactured for Detroit Edison Company PO Box 1659 Detroit, MI 48231-1659  
(Name and Address of Purchaser or Owner)

3. Location of Installation Detroit Edison EF2 Site 6400 Dixie Highway Detroit, MI 48231  
(Name and Address)

4. Pump or Valve Valve Nominal Inlet Size 3/4" Outlet Size 3/4"  
(inch) (inch)

	(a) Model No. Series No. or Type	(b) N Certificate Holder's Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	600#	29AYT	N/A	04-28791-01 Rev. 0	2	N/A	2004
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. 3/4"-600# Edward Forged Steel Globe Stop Valve  
(Brief description of service for which equipment was designed)  
Body and Cover shall be per ASME Section III 1977 Edition Summer 1977 Addenda 28791

6. Design Conditions 940 psi 700 °F or Valve Pressure Class 600 (1)  
(Pressure) (Temperature)

7. Cold Working Pressure 1440 psi at 100 °F.

8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
BQ	AISI 615	CONSOLIDATED CASTING	DISK
(b) Forgings			
8FXB	SA105	TRINITY	Bonnet
MFUB	SA105	TRINITY	BODY

(1) For manually operated valves only

\*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

3

Valve S/N 29AYT through \*\*\*\*\*

[illegible]

9. Hydrostatic test 2175 psi. Disk Differential test pressure 1440 psi.

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction

of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition

Addenda Summer 1973 , Code Case No.

N/A

**Date**

Signed \_\_\_\_\_ Flowserve

by

(N Certificate Holder)

**Our ASME Certificate of Authorization No.**

N-1562

to use the

**N**

symbol expires

11-26-06

**(N)**

(Date)

## CERTIFICATION OF DESIGN

Design information on file at

**Flowserve Corporation Raleigh, NC**

Stress analysis report (Class 1 only) on file at

Design specifications certified by (1)

**T.J. O'Keefe**

**PE State**

MI

Reg. No.

24359

Stress analysis certified by (1)

PE State

Reg. No.

(1) Signature not required. List name only.

# CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of North Carolina and employed by HSB CT of Hartford Connecticut

have inspected the pump, or valve, described in this Data Report on 4127104, and state that, to the best of my knowledge and belief, the N Certificate Holder has constructed this pump, or valve, in accordance with ASME Code, Section III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this s 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 4/27/04

**Signed**

## Commissions

(Nat'l Ed., State, Prov. and No.)

4

#06002 7cf12

# FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES\*

As Required by the Provisions of the ASME Code, Section III, Div. 1

Pg. 1 of 2

1. Manufactured by Flowserve Corporation, 1900 S. Saunders St., Raleigh, NC 27603  
(Name and Address of N Certificate Holder)

2. Manufactured for Detroit Edison Company, PO Box 1659 Detroit, MI 48231  
(Name and Address of Purchaser or Owner)

3. Location of Installation Detroit Edison Company, Fermi 2, 6400 Dixie Highway, Newport, MI 48166  
(Name and Address)

4. Pump or Valve Valve Nominal Inlet Size 2" Outlet Size 2"  
(inch) (inch)

	(a) Model No. Series No. or Type	(b) N Certificate Holder's Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	800#	07BFB	N/A	05-37122-01 Rev. B	1	N/A	2006
(2)	800#	08BFB	N/A	05-37122-01 Rev. B	1	N/A	2006
(3)	800#	09BFB	N/A	05-37122-01 Rev. B	1	N/A	2006
(4)	800#	10BFB	N/A	05-37122-01 Rev. B	1	N/A	2006
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. 2" 800# Globe Valve

(Brief description of service for which equipment was designed)

37122

6. Design Conditions 1425 Psi 680 °F or Valve Pressure Class 800 (1)  
(Pressure) (Temperature)

7. Cold Working Pressure 1973 psi at 100 °F.

8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
<u>M8344</u> ✓	<u>SA216-WCB</u>	<u>Flowserve</u>	<u>Body</u>
(b) Forgings			
<u>99951</u>	<u>SA105</u>	<u>Askew</u>	<u>Bonnet</u>
<u>J566</u>	<u>SA564-630-H1075</u>	<u>Nova</u>	<u>Disc</u>
<u>G6439</u>	<u>SA564-630-H1075</u>	<u>Flowserve</u>	<u>Gasket Retainer</u>

(1) For manually operated valves only

\*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.

Valve S/N 07EFB through 10BFB


[illegible]

9. Hydrostatic test            2975            psi.            Disk Differential test pressure            2175            psi.

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1986

Addenda No. , Code Case No. N62-4 , Date 3-17-06

Signed Flowserve Corp. by   
(N Certificate Holder)

Our ASME Certificate of Authorization No. N-1562 to use the N symbol expires 11-26-06.

## CERTIFICATION OF DESIGN

Design information on file at	Flowserve Corporation Raleigh, NC
Stress analysis report (Class 1 only) on file at	Flowserve Corporation Raleigh, NC
Design specifications certified by (1)	F.A. Bensinger
PE State PA	Reg. No. PE-31002-E
Stress analysis certified by (1)	R.S. Farrell
PE State NC	Reg. No. 028656

(1) Signature not required. List name only.

# CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of North Carolina and employed by HSB CT or Hartford Connecticut have inspected the pump, or valve, described in this Data Report on 3 1 / 8 1 0 6, and state that, to the best of my knowledge and belief, the N Certificate Holder has constructed this pump, or valve, in accordance with ASME Code, Section III. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this s 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 3 11 81 OC

Signed J. M. Hall Commissions NC#1921  
(Inspector) (Nat'l Bd., State, Prov. and No.)

306-002 8 of 12

**FORM NPV-1 N CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES\***  
As Required by the Provisions of the ASME Code , Section III, Div. 1

Pg. 1 of 2

1. Manufactured by Flowserve Corporation, 1900 S. Saunders St., Raleigh, NC 27603  
(Name and Address of N Certificate Holder)

2. Manufactured for Detroit Edison Company, PO Box 1659 Detroit, MI 48231  
(Name and Address of Purchaser or Owner)

3. Location of Installation Detroit Edison Company, Fermi 2, 6400 Dixie Highway, Newport, MI 48166  
(Name and Address)

4. Pump or Valve Valve Nominal Inlet Size 2" Outlet Size 2"  
(inch) (inch)

	(a) Model No. Series No. or Type	(b) N Certificate Holder's Serial No.	(c) Canadian Registration No.	(d) Drawing No.	(e) Class	(f) Nat'l. Bd. No.	(g) Year Built
(1)	800#	37BFB	N/A	05-37122-02 Rev. A	1	N/A	2006
(2)	800#	38BFB	N/A	05-37122-02 Rev. A	1	N/A	2006
(3)	800#	39BFB	N/A	05-37122-02 Rev. A	1	N/A	2006
(4)	800#	40BFB	N/A	05-37122-02 Rev. A	1	N/A	2006
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							

5. 2" 800# Split Wedge Gate Valve

(Brief description of service for which equipment was designed)

37122 Item 002

6. Design Conditions 1425 Psi 680 °F or Valve Pressure Class 800 (1)  
(Pressure) (Temperature)

7. Cold Working Pressure 1973 psi at 100 °F.

8. Pressure Retaining Pieces

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
M3634	SA216-WCB	Flowserve	Body
(b) Forgings			
150717	SA479-316	DuBose	Bonnet
22595	SA564-XM13-H1100	DuBose	Male Disc
22575-1	SA564-XM13-H1100	DuBose	Female Disc
R0253-P30	SA564-630-H1075	Askew	Gasket Retainer

(1) For manually operated valves only

\*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8-1/2" x 11", (2) information in items 1, 2 and 5 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at top of this form.




Valve S/N 37BFB through 40BFB[illegible]

9. Hydrostatic test      2975      psi.      Disk Differential test pressure      2175      psi.

# CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and that this pump, or valve, conforms to the rules of construction of the ASME Code for Nuclear Power Plant Components. Section III, Div. 1., Edition 1986

Addenda No. , Code Case No. N62-4 , Date 3-20-56

Signed Flowserve Corp. by   
(N Certificate Holder)

Our ASME Certificate of Authorization No. N-1562 to use the N symbol expires 11-26-06  
(N) (Date)

## CERTIFICATION OF DESIGN

Design information on file at Flowserve Corporation Raleigh, NC

Stress analysis report (Class 1 only) on file at Flowserve Corporation Raleigh, NC

Design specifications certified by (1) F.A. Bensinger

PE State	PA	Reg. No.	PE-31002-E
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Stress analysis certified by (1) R.S. Farrell

PE State	NC	Reg. No.	028656
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(1) Signature not required. List name only.

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of North Carolina and employed by HSB CT of Hartford Connecticut

have inspected the pump, or valve, described in this Data Report on 3 120 106, and state that, to the best of my knowledge and belief, the N Certificate Holder has constructed this pump, or valve, in accordance with ASME Code, Section III.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this S 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 3 120106

Signed J. M. Vent  
(Inspector)

Commissions NC 1421  
(Nat'l Bd., State, Prov. and No.)

**FORM 10-1 CERTIFICATE HOLDING DATA REPORT FOR NUCLEAR VESSELS\***  
As Required by the Provisions of the ASME Code, Section III, Division 1

Fig. 1 of 2

1. Manufactured and certified by AEROFIN CORPORATION, 4621 MURRAY PLACE, LYNCHBURG, VA 24502  
(Name and address of Manufacturer)
2. Manufactured for DETROIT EDISON COMPANY, FERMIL PLANT, UNIT 2, NEWPORT, MI 48166  
(Name and address of Purchaser)
3. Location of installation DETROIT EDISON COMPANY, FERMIL PLANT, UNIT 2, NEWPORT, MI 48166  
(Name and address)
4. Type: HORIZONTAL HEAT EXCHANGER 950606 — N-R-1033 765 1996  
(Name, or vert.) (Name, jacketed, heat ex.) (Cert. Holder's serial no.) (Code) (Drawing no.) (Net L. Bd. no.) (Year built)
5. ASME Code, Section III, Division 1: 1971 1972 SUMMER 2 —  
(Edition) (Addenda date) (Addenda) (Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-240,304 75,000 .94" .763" 0' - 9.75" 1' - 11"  
(Mat'l. spec. no.) (Tensile strength) (Nom. thickness in.) (Min. design thickness in.) (dia. ID (ft. & in.)) (Length overall (ft. & in.))
7. Seams: NONE — — — — — — —  
(Long.) (RT) (RT) (Left, % (right)) (RT) (RT) (RT) (In. of courses)
8. Header: SA-240,304 75,000 SA-240,304 75,000  
(Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength)

	Location (Base, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	ENDS	.8125"	FLAT	—	—	—	—	2"X8.25"	—
(b)	SIDES	.9375"	FLAT	—	—	—	—	2"X19.5"	—

If removable, bolts used (52) 5/8" - 11 X 2 1/2", SA-193 Gr. B8 Other fastening —  
(Mat'l. spec. no., size, quantity) (Describe or attach sketch)

9. Jacket closure: —  
(Describe as open & weld, bar, etc. If bar, give dimensions, describe or sketch)
10. Design pressure<sup>2</sup> 150 at max. temp. 150 Min. pressure-test temp. 70 Pncu., hydro., or comb. test pressure 225  
(psa) (°F) (°F) (psa)

Items 11 and 12 to be completed for tube sections.

11. Tubesheets: SA-240, 304 8.25" .94" BOLTED  
(Stationary, mat'l. spec. no.) (dia. in. (subject to press. H)) (Thickness in.) (Attachment (welded, bolted))
12. Tubes: SA-213, TP-304 .625" .035" 58 STRAIGHT  
(Mat'l. spec. no.) (OD in.) (Thickness inches or gage) (No.) (Type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: — — — — — —  
(Mat'l. spec. no.) (Tensile strength) (Nom. thickness in.) (Min. design thickness in.) (dia. ID (ft. & in.)) (Length overall (ft. & in.))
14. Seams: — — — — — — — —  
(Long. (welded, etc., angle)) (RT (yes or no)) (RT) (Left, % (right)) (RT) (RT) (RT) (In. of courses)
15. Header: — — — — — —  
(Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength)
- | Location              | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Pressure (convex or concave) |
|-----------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|--------------------------------------|
| (a) Top, bottom, ends |           |              |                |                  |                    |                      |               |                                      |
| (b) Channel           |           |              |                |                  |                    |                      |               |                                      |
| (c) Flange            |           |              |                |                  |                    |                      |               |                                      |

If removable, bolts used — Other fastening —  
(Mat'l. spec. no., size, quantity) (Describe or attach sketch)

16. Design pressure<sup>2</sup> — at — Min. pressure-test temp. — Pncu., hydro., or comb. test pressure —  
(psa) (°F) (°F) (psa)

<sup>1</sup> If postweld heat treated. <sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

\* Supplemental information in form of Estd. sketches, or drawings may be used provided (1) size is 8 1/2" x 11. (2) information in items 1 through 4 on this Data Report is included on each sheet. (3) each sheet is numbered and number of sheets is recorded at top of this form.

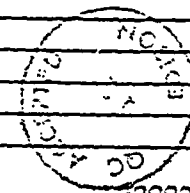
## 17. Name, inspection and safety valve openings:

Pressure Rating Rating, Class, etc.	Quantity	Dia. or Size	Type	How Attached	Part	Thickness	Reinforcement Method	Location
INLET	1	1 1/2" NPS	SS PIPE WELDED		SA-312 TF-316	.25"	N/R	END
OUTLET	1	1 1/2" NPS	SS PIPE WELDED		SA-312 TF-316	.25"	N/R	END
VENT/DRAIN	8	3/4" UNS	SS PLUG THREADED		SA-182 F-304	.375"	N/R	END

18. Support: Skirt NO Lugs --- Legs --- Other --- Attached ---  
(Type or not) (Quantity) (Quantity) (Identified) (Where & how)

19. Remarks: AEROFIN SO# 960163-002  
MARKS: MAINT 0002957193

\*\* HEADS MACHINED INTEGRAL TO TUBE SHEET



CERTIFICATION OF DESIGN

Design specification certified by LAWRENCE D. BURR P.E. State MI Reg. no. 33999  
Design report certified by N/A P.E. State N/A Reg. no. N/A

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.  
N Certificate of Authorization No. N-2814 Expires MARCH 30, 1999  
Date 8-9-96 Name AEROFIN CORPORATION Signed [Signature]  
(In Certificate Holder) (Authorized representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of VA and employed by \*ALLENDALE MUTUAL INSURANCE of NORWOOD, MA have inspected the component described in this Data Report on 8-8-96, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.  
By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 8-9-96 Signed [Signature] Commissions VA.770 NB9055 AN  
\*FACTORY MUTUAL ENGR ASSO (Authorized Inspector) (Nat'l Bd. Incl. endorsement and state or prov. and no.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.  
N Certificate of Authorization No. --- Expires ---  
Date --- Name --- Signed ---  
(In Certificate Holder) (Authorized representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of --- and employed by --- of --- have compared the statements in this Data Report with the described component and state that parts referred to as data items ---, not included in the certificate of shop inspection, have been inspected by me on --- and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.  
By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 --- Signed --- Commissions ---  
(Authorized Inspector) (Nat'l Bd. Incl. endorsement and state or prov. and no.)

# Form N-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR VESSELS\*

As Required by the Provisions of the ASME Code, Section III, Division 1

Fig. 1 of 2

1. Manufactured and certified by AEROFIN CORPORATION, 4621 MURRAY PLACE, LYNCHBURG, VA 24502

(Name and address of Certificate Holder)

2. Material required for DETROIT EDISON COMPANY, FERMILAB PLANT, UNIT 2, NEWPORT, MI 48166

(Name and address of Purchaser)

3. Location of installation DETROIT EDISON COMPANY, FERMILAB PLANT, UNIT 2, NEWPORT, MI 48166

(Name and address)

4. Type: HORIZONTAL HEAT EXCHANGER 960608 — N-R-1033 767 1993

(HORIZ. or VERT.)

(Tank, jacketed, heat ex.)

(Cert. Holder's serial no.)

(CRN)

(Drawing no.)

(Nat'l. Bd. no.)

(Year built)

5. ASME Code, Section III, Division 1: 1971 1972 SUMNER 2 —

(Edition)

(Addenda date)

(Class)

(Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-240,304 75,000 .94" .763" 0' - 9.75" 1' - 11"

(Mat'l. spec. no.)

(Tensile strength)

(Nom. thickness (in.))

(Min. design thickness (in.))

(dia. ID (ft. & in.))

(Length (overall) (ft. & in.))

7. Seams: NONE — — — — — — —

(Long.)

(HT')

(RT)

(Left. %)

(Left)

(HT')

(RT)

(No. of courses)

8. Header: SA-240,304 75,000 SA-240,304 75,000

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

	Location (Top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	ENDS	.8125"	FLAT	—	—	—	—	2"X8.25"	—
(b)	SIDES	.9375"	FLAT	—	—	—	—	2"X19.5"	—

If removable, bolts used (52) 5/8" - 11 X 2 1/2", SA-193 GR. B8

(Mat'l. spec. no., size, quantity)

Other fastening

(Describe or attach sketch)

9. Jacket closure:

(Describe as gage & weld, bar, etc. if bar, give dimensions, describe or sketch)

10. Design pressure<sup>2</sup> 150 at max. temp. 150 Min. pressure-test temp. 70 Pneu., hydro., or comb. test pressure 225

(psi)

(°F)

(°F)

(psi)

Items 11 and 12 to be completed for tube sections:

11. Tubesheets: SA-240, 304 8.25" .94" BOLTED

(Mat'l. spec. no.)

(dia. in. (subject to press.))

(Thickness (in.))

(Attachment (welded, bolted))

12. Tubes: SA-213, TP-304 .625" .035" 53 STRAIGHT

(Mat'l. spec. no.)

(OD (in.))

(Thickness (inches or gage))

(No.)

(Type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: — — — — — —

(Mat'l. spec. no.)

(Tensile strength)

(Nom. thickness (in.))

(Min. design thickness (in.))

(dia. ID (ft. & in.))

(Length (overall) (ft. & in.))

14. Seams: — — — — — — — —

(Long. (welded, etc., single))

(HT' (yes or no))

(RT)

(Left. %)

(Left)

(HT')

(RT)

(No. of courses)

15. Header: — — — — — —

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

	Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	Top, bottom, ends								
(b)	Channel								
(c)	Floating								

If removable, bolts used — Other fastening —

(Mat'l. spec. no., size, quantity)

(Describe or attach sketch)

16. Design pressure<sup>2</sup> — at — Min. pressure-test temp. — Pneu., hydro., or comb. test pressure —

(psi)

(°F)

(°F)

(psi)

\* If pressure vessel heat treated.

<sup>2</sup> Use other internal or external pressure with coincident temperature when applicable.

\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and number of sheets is recorded at top of this form.

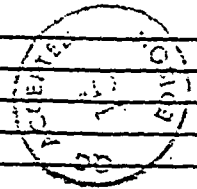
## 17. Nozzles, inspection and safety valve openings:

Process (inlet, outlet, drain, etc.)	Quantity	Size or Size	Type	How Attached	Mat'l.	Thickness	Reinforcement Material	Location
INLET	2	1 1/2" NPS	SS PIPE WELDED		SA-312	.20"	N/R	END
					TP-316			
OUTLET	1	1 1/2" NPS	SS PIPE WELDED		SA-312	.20"	N/R	END
					TP-316			
VE"IT/DRAIN	8	3/4" UNS.	SS PLUG THREADED		SA-192	.375"	N/R	END
					F-304			

18. Supports: Shirts NO Lugs -- Legs -- Other -- Attached --  
(yes or no) (quantity) (quantity) (describe) (where & how)

19. Remarks: AEROFIN SO# 960163- 004  
 MARKS: MAINT 0002957193

**\*\* HEADS MACHINED INTEGRAL TO TUBE SHEET**



## CERTIFICATION OF DESIGN

Design specification certified by LAWRENCE D. BURR P.E. State MI Reg. no. 33999  
 Design report certified by N/A P.E. State N/A Reg. no. N/A

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2514 Expires MARCH 30, 1999  
 Date 8-9-96 Name AEROFIN CORPORATION Signed [Signature]  
(IN Certificate Holder) (Authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of VA and employed by \*ALLENDALE MUTUAL INSURANCE of NORWOOD, MA have inspected the component described in this Data Report on 8-8-96, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 8-9-96 Signed [Signature] Commissions VA 770, NR 9055 AN  
(Authorized Inspector) (N.B.T. Bd. (incl. endorsement) and state or prov. and no.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. \_\_\_\_\_ Expires \_\_\_\_\_  
 Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(IN Certificate Holder) (Authorized representative)

## CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of \_\_\_\_\_ and employed by \_\_\_\_\_ of \_\_\_\_\_ have compared the statements in this Data Report with the described component

and state that parts referred to as data items \_\_\_\_\_, not included in the certificate of shop inspection, have been inspected by me on \_\_\_\_\_ and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 \_\_\_\_\_ Signed \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (N.B.T. Bd. (incl. endorsement) and state or prov. and no.)

# FORM N-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR VESSELS\*

As Required by the Provisions of the ASME Code, Section III, Division 1

Fig. 1 of 2

1. Manufactured and certified by AEROFIN CORPORATION, 4621 MURRAY PLACE, LYNCHBURG, VA 24502

(Name and address of Certificate holder)

2. Manufactured for DETROIT EDISON COMPANY, FERMI PLANT, UNIT 2, NEWPORT, MI 48166

(Name and address of Purchaser)

3. Location of installation DETROIT EDISON COMPANY, FERMI PLANT, UNIT 2, NEWPORT, MI 48166

(Name and address)

4. Type: HORIZONTAL HEAT EXCHANGER 960610 — N-R-1034 769 1993

(Name, or vert.)

(Name, jacketed, heat ex.)

(Cert. Holder's serial no.)

(CRN)

(Drawing no.)

(Mat. l. Ed. no.)

(Year built)

5. ASME Code, Section III, Division 1: 1971 1972 SUMMER 2 —

(Edition)

(Seasonal date)

(Class)

(Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-240,304 75,000 .94" .763" 0' - 9.75" 1' - 11"

(Mat'l. spec. no.)

(Tensile strength)

(Nom. thickness in.)

(Min. design thickness in.)

(dia. ID (ft. & in.))

(Length (overall) (ft. & in.))

7. Seams: NONE — — — — — — —

(Long.)

(HT)

(RT)

(off. %)

(Depth)

(HT)

(RT)

(No. of courses)

8. Heads: SA-240,304 75,000 SA-240,304 75,000

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

Location (top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a) ENDS	.8125"	FLAT	—	—	—	—	2"X8.25"	—
(b) SIDES	.9375"	FLAT	—	—	—	—	2"X19.5"	—

If removable, bolts used (52) 5/8" - 11 X 2 1/2", SA-193 Gr. B8 Other fastening —

(Mat'l. spec. no., size, quantity)

(Describe or attach sketch)

9. Jacket closure: —

(Describe or sketch or weld, etc. if bar, give dimensions, describe or sketch)

10. Design pressure<sup>2</sup> 150 at max. temp. 150 Min. pressure-test temp. 70 Pneu., hydro., or comb. test pressure 225

(psa)

(°F)

(°F)

(psa)

Items 11 and 12 to be completed for tube sections.

11. Tubesheets: SA-240, 304 8.25" .94"

(Material, mat'l. spec. no.)

(dia. in. (subject to order))

(Thickness in.)

(Attachment: welded, bolted)

(Material, mat'l. spec. no.)

(dia. in.)

(Thickness in.)

(Attachment)

12. Tubes: SA-213, TP-304 .625" .035" 58 STRAIGHT

(Mat'l. spec. no.)

(OD in.)

(Thickness (inches or gage))

(No.)

(Type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: — — — — — —

(Mat'l. spec. no.)

(Tensile strength)

(Nom. thickness in.)

(Min. design thickness in.)

(dia. ID (ft. & in.))

(Length (overall) (ft. & in.))

14. Seams: — — — — — — — —

(Long. (jacketed, etc., apply))

(HT) (yes or no)

(RT)

(off. %)

(Depth)

(HT)

(RT)

(No. of courses)

15. Heads: — — — — — —

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

(Mat'l. spec. no.)

(Tensile strength)

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a) Top, bottom, ends								
(b) Channel								
(c) Floating								

If removable, bolts used — Other fastening —

(Mat'l. spec. no., size, quantity)

(Describe or attach sketch)

16. Design pressure<sup>2</sup> — at — Min. pressure-test temp. — Pneu., hydro., or comb. test pressure —

(psa)

(°F)

(°F)

(psa)

\* If pressure heat treated. <sup>2</sup> List other internal or external pressure with conditions temperature when applicable.

\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 3 1/4 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and number of sheets is recorded at top of this form.

17. **Manhole, inspection and safety valve openings:**

From (to) (enter, drain, etc.)	Quantity	Dia. or Size	Type	How Attached	Mat'l.	Thickness	Reinforcement Material	Location
INLET	1	1 1/2" NPS	SS PIPE WELDED		SA-312	.20"	N/R	END
					TP-316			
OUTLET	1	1 1/2" NPS	SS PIPE WELDED		SA-312	.20"	N/R	END
					TP-316			
VENT/DRAIN	8	3/4" UNS	SS PLUG THREADED		SA-192	.375"	N/R	END
					F-304			

18. Support: Skirt NO Lugs -- Legs -- Other -- Attached --  
(type or mat) (quantity) (quantity) (description) (where & how)

19. Remarks: **AEROFIN S# 960163- 006**  
MARKS: MAINT 0002957193

**\*\* HEADS MACHINED INTEGRAL TO TUBE SHEET**

**CERTIFICATION OF DESIGN**  
Design specification certified by LAWRENCE D. BURR P.E. State MI Reg. no. 33999  
Design report certified by N/A P.E. State N/A Reg. no. N/A

**CERTIFICATE OF SHOP COMPLIANCE**  
We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.  
N Certificate of Authorization No. N-2814 Expires MARCH 30, 1999  
Date 8-9-96 Name AEROFIN CORPORATION Signed [Signature]  
(N Certificate Holder) (Authorized representative)

**CERTIFICATE OF SHOP INSPECTION**  
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of VA and employed by \*ALLENDALE MUTUAL INSURANCE of NORWOOD, MA have inspected the component described in this Data Report on 8-8-96 and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.  
By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 anything arising from or connected with this inspection.  
Date 8-9-96 Signed [Signature] Commissions VA 770, NB9055AN  
\*FACTORY MUTUAL B-663 ASSOC (Authorized Inspector) (Nat'l. Bd. (incl. endorsement) and state or prov. and no.)

**CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE**  
We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.  
N Certificate of Authorization No. \_\_\_\_\_ Expires \_\_\_\_\_  
Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(N Certificate Holder) (Authorized representative)

**CERTIFICATE OF FIELD ASSEMBLY INSPECTION**  
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of \_\_\_\_\_ and employed by \_\_\_\_\_ of \_\_\_\_\_ have compared the statements in this Data Report with the described component and state that parts referred to as data items \_\_\_\_\_, not included in the certificate of shop inspection, have been inspected by me on \_\_\_\_\_ and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.  
By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 \_\_\_\_\_ Signed \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsement) and state or prov. and no.)

# FORM N-1 CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR VESSELS\*

As Required by the Provisions of the ASME Code, Section III, Division 1

Fig. 1 of 2

1. Manufactured and certified by AEROFIN CORPORATION, 4621 MURRAY PLACE, LYNCHBURG, VA 24502  
(Name and address of Certificate Holder)
2. Manufactured for DETROIT EDISON COMPANY, FERRI PLANT, UNIT 2, NEWPORT, MI 48166  
(Name and address of Purchaser)
3. Location of installation DETROIT EDISON COMPANY, FERRI PLANT, UNIT 2, NEWPORT, MI 48166  
(Name and address)
4. Type: HORIZONTAL HEAT EXCHANGER 960612 — N-R-1034 771 1995  
(Name, or vert.) (Name, jacketed, heat ex.) (Cert. Holder's serial no.) (Code) (Drawing no.) (Mat'l. spec. no.) (Year built)
5. ASME Code, Section III, Division 1: 1971 1972 SUMMER 2 —  
(Edition) (Issuance date) (Class) (Code Case no.)

Items 6-10 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.

6. Shell: SA-240, 304 75,000 .94" .763" 0' - 9.75" 1' - 11"  
(Mat'l. spec. no.) (Tensile strength) (Nom. thickness in.) (Min. design thickness in.) (Dia. ID (ft. & in.)) (Length (overall) (ft. & in.))
7. Seams: NONE — — — — — — —  
(Long.) (HT) (RT) (Left, % ) (Right) (HT) (RT) (No. of courses)
8. Heads: SA-240, 304 75,000 SA-240, 304 75,000  
(Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength)

	Location (top, bottom, ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	ENDS	.8125"	FLAT	—	—	—	—	2'x8.25"	—
(b)	SIDES	.9375"	FLAT	—	—	—	—	2'x19.5"	—

If removable, bolts used (52) 5/8" - 11 X 2 1/2", SA-193 GR. B8 Other fastening —  
(Mat'l. spec. no., size, quantity) (Describe or attach sketch)

9. Jacket closure: —  
(Describe in open & closed, bar, etc. if bar, give dimensions, describe or sketch)
10. Design pressure<sup>2</sup> 150 at max. temp. 150 Min. pressure-test temp. 70 Pneu., hydro., or comb. test pressure 225  
(psia) (°F) (°F) (psia)

Items 11 and 12 to be completed for tube sections.

11. Tubesheet: SA-240, 304 8.25" .94" BOLTED  
(Mat'l. spec. no.) (Dia. in. (subject to stress)) (Thickness in.) (Attachment (welded, bolted))
12. Tubes: SA-213, TP-304 .625" .035" 58 STRAIGHT  
(Mat'l. spec. no.) (OD in.) (Thickness (inches or gage)) (No.) (Type (straight or U))

Items 13 to 16 inclusive to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

13. Shell: — — — — — —  
(Mat'l. spec. no.) (Tensile strength) (Nom. thickness in.) (Min. design thickness in.) (Dia. ID (ft. & in.)) (Length (overall) (ft. & in.))
14. Seams: — — — — — — — —  
(Long. (welded, etc., single)) (HT) (yes or no) (RT) (Left, % ) (Right) (HT) (RT) (No. of courses)
15. Heads: — — — — — —  
(Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength) (Mat'l. spec. no.) (Tensile strength)

Location	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a) Top, bottom, ends								
(b) Channel								
(c) Flange								

If removable, bolts used — Other fastening —  
(Mat'l. spec. no., size, quantity) (Describe or attach sketch)

16. Design pressure<sup>2</sup> — at — Min. pressure-test temp. — Pneu., hydro., or comb. test pressure —  
(psia) (°F) (°F) (psia)

\* If pressure heat treated. <sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and number of sheets is recorded at top of this form.



## 17. Heads, inspection and safety valve openings:

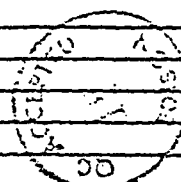
Particulars (Location, etc., etc.)	Quantity	Size or Size	Type	How Attached	Mat'l.	Thickness	Reinforcement Material	Comments
INLET	1	1 1/2" NPS	SS PIPE (END)		SA-312	.25"	N/R	END
					TP-315			
OUTLET	1	1 1/2" NPS	SS PIPE (END)		SA-312	.20"	N/R	END
					TP-315			
VENT/DRAIN	8	3/4" UNS	SS PLUG (THREADED)		SA-192	.375"	N/R	END
					F-304			

18. Supports: Stbr. NJ Lugs -- Legs -- Other -- Attached --  
(yes or no) (quantity) (quantity) (describe) (where & how)

19. Remarks: AEROFIN SO# 950163- 008

MARKS: MAINT 0002957193

\*\* HEADS MACHINED INTEGRAL TO TUBE SHEET



## CERTIFICATION OF DESIGN

Design specification certified by LAWRENCE D. BURR P.E. State MI Reg. no. 33999  
 Design report certified by N/A P.E. State N/A Reg. no. N/A

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this nuclear vessel conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2814 Expires MARCH 30, 1999  
 Date 8-9-96 Name AEROFIN CORPORATION Signed [Signature]  
(N Certificate Holder) (Authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of VA and employed by \*ALLENDALE MUTUAL INSURANCE

of NORWOOD, MA have inspected the component described in this Data Report on 8-9-96, and state that to the best of my knowledge and belief, the Certificate Holder has constructed this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 8-9-96 Signed [Signature] Commissions VA 770 NB9055AN  
\*FACTORY MUTUAL EERG ASSOC (Authorized Inspector) (Nat'l. Bd. Incl. endorsements and state or prov. and no.)

## CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this nuclear vessel conforms to the rules of construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. \_\_\_\_\_ Expires \_\_\_\_\_  
 Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(N Certificate Holder) (Authorized representative)

## CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of \_\_\_\_\_ and employed by \_\_\_\_\_

of \_\_\_\_\_ have compared the statements in this Data Report with the described component and state that parts referred to as data items \_\_\_\_\_, not included in the certificate of shop inspection, have been inspected by me on \_\_\_\_\_ and that to the best of my knowledge and belief the Certificate Holder has constructed and assembled this component in accordance with the ASME Code, Section III, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the component described in this 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 \_\_\_\_\_ Signed \_\_\_\_\_ Commissions \_\_\_\_\_  
(Authorized Inspector) (Nat'l. Bd. Incl. endorsements and state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-005**

1. Owner <u>Detroit Edison Company</u>	Date <u>May 2, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>T &amp; B No. 20 Emergency Diesel Generator #13 Service Water System</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 3</u> 19 <u>71</u> Edition <u>71</u> Addenda <u>N62-4</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
R3000F139B	Wm. Powell	66285-16	N/A	V15-2075	N/A	Replaced	Y
R3000F139B	Weir Valves & Controls USA Inc.	1-52182-A	N/A	V30-1566	N/A	Replacement	Y

7. Description of Work	<u>Replace existing valve with replacement valve due to identified wear on inbody guide ribs.</u>
8. Tests Conducted:	Hydrostatic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Nominal Operating Pressure <input checked="" type="checkbox"/> Ref. Code Case N-416-2 Other <input type="checkbox"/> Pressure _____    psi    Test Temp. _____ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement valve was procured per PO #394742, SN # 1-52182-A,, SA-216-WCB, V30-1566. Replacement valve was manufactured by Weir Valves.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report T&B No. 20 to be supplemented by Owners Section XI Program # 06-005

Certificate of Authorization No. \_\_\_\_\_ N/A \_\_\_\_\_ Expiration Date \_\_\_\_\_ N/A \_\_\_\_\_

Signed R.M. Hambleton Lead ISI Engineer [Signature] Date MAY 2 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 3-29-06 to 5-4-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions MI 610  
National Board, State, Province, and  
Endorsements

Date May 4 2006

(10/94)

Reference WR # 000Z031475 for additional details.

06-005  
sheet 2 of 2  
VALVES

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\* Supplemental information in form of lists, sketches, or drawings may be used provided (1) size 8 1/2 x 11, (2) information in items 1 through 4 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form (12/88) This form (E00037) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Certificate Holder's Serial No. 1-52182-A8. Design conditions 285 psi 100 °F or valve pressure class 150 (1)  
(pressure) (temperature)9. Cold working pressure 285 psi at 100°F10. Hydrostatic test 450 psi. Disk differential test pressure 285 psi11. Remarks: STUD SA193 GR B7 HT.#: M11348 TR#: Q345. H. HEX NUT SA194 2H HT. #: S07492 TR#: KVE

## CERTIFICATION OF DESIGN

Design specification certified by Lawrence D. Burr P.E. State MI Reg. no. 33999  
(when applicable)Design report certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATION OF COMPLIANCE

We certify that the statements made in this report are correct and that pump or valve conforms to the rules for construction of the ASME Code, Section III, Division 1.

N Certificate of Authorization No. N-2506 Expires 6-13-07Date 2/9/06Name Weir Valves & Controls USA Inc.  
(N Certificate Holder)Signed [Signature]  
(authorized representative)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of MA and employed by HSBCT of Hartford, CT have inspected the pump, or valve, described in this Data Report on 2/9/06 and state that to the best of my knowledge and belief, the Certificate Holder has constructed this pump, or valve, in accordance with the ASME Code, Section III, Division 1.

By signing this Certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 2/9/06Signed [Signature]Commission MA 1651 ABNI

(Authorized Inspector)

(Nat'l. Bd. (incl. endorsement(s) state or prov and no)

(1) For manually operated valves only.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**06-009**

1. Owner <u>Detroit Edison Company</u>	Date <u>June 1, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Main Steam Line Drains System, B31.1 Class D+ Piping System (B2100F080A / V10-2006)</u>	
5. (a) Applicable Construction Code <u>ANSI B31.1,</u>	
<u>Class D+</u> 19 <u>73</u> Edition <u>No</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B2100F080A	Fisher Controls	None	N/A	V10-2006	1976	Replacement	N

7. Description of Work Install replacement stem and plug assembly as well as seat ring and cage.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ Other ☐ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Replaced stem and plug assembly, seat ring and cage in control valve. Replacement parts procured per PO# 394592, Heat Code # 44830, Serial No. AG0711-2 for stem /plug assembly. Valve was built to ASME III, Class2 requirements but was not 'N' stamped due to system design. Piping system is classified as ASME Section XI, Class 2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Valve records to be supplemented by Owners Section XI Program 06-009

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date JUNE 1 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-6-06 to 6-5-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature]  
Inspector's Signature

Commissions NB 610  
National Board, State, Province, and  
Endorsements

Date June 5 20 06

(10/94)

For complete work package, see Work Request # H599040100

**FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\***

As Required by the Provisions of the ASME Code, Section III  
Not to exceed One Day's Production

06-009

SHEET 2 OF 2

Pg. 1 of 1

011-A032119710 IT. 3

1. Manufactured and certified by FISHER CONTROLS INT'L LLC, 205 SOUTH CENTER STREET, MARSHALLTOWN, IA 50158  
(name and address of NPT Certificate Holder)

2. Manufactured for DETROIT EDISON CO., P.O. BOX 1659, DETROIT, MICHIGAN, 48231  
(name and address of purchaser)

3. Location of installation FERMI II POWER PLANT, 6400 N. DIXIE HIGHWAY, NEWPORT, MI., 48166  
(name and address)

4. Type IU4615 REV. B SB166 N06600 80 KSI N/A 2004  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)

5. ASME Code, Section III: 1971 WINTER 1971 2 N/A  
(edition) (addenda date) (class) (Code Case no.)

6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(no.)

7. Remarks: DESIGN: ASME B&PVC, SECT. III, 1971 EDITION, WINTER 1971 ADDENDA, CLASS 2  
OTHER: ASME B&PVC, SECT. III, 1989 EDITION, NO ADDENDA, CLASS 2

8. Nom. thickness (in.) N/A Min. design thickness (in.) N/A Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A

9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

	Part or Appurtenance Serial Number	Heat Number
(1)	AG0711-1 ✓	44830 ✓
(2)	AG0711-2 ✓	44830 ✓
(3)	AG0711-3 ✓	44830 ✓
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		
(11)		
(12)		
(13)		
(14)		
(15)		
(16)		
(17)		
(18)		
(19)		
(20)		
(21)		
(22)		
(23)		
(24)		
(25)		

	Part or Appurtenance Serial Number	Heat Number
(26)		
(27)		
(28)		
(29)		
(30)		
(31)		
(32)		
(33)		
(34)		
(35)		
(36)		
(37)		
(38)		
(39)		
(40)		
(41)		
(42)		
(43)		
(44)		
(45)		
(46)		
(47)		
(48)		
(49)		
(50)		

10. Design Pressure 1005 psi Temp. 547 °F. Hydro. test pressure N/A at temp. °F  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 2 and 3 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form





## FORM N-2 (back)

Mfr. Serial No AG0711-1,2  
&3

## CERTIFICATION OF DESIGN

Design specifications certified by SYLVESTER H. NOETZEL P.E. State MI. Reg. no. 14386  
(when applicable)Design report\* certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) PLUG/STEMS  
conforms to the rules of construction of the ASME Code, Section III.NPT Certificate of Authorization No 1930 Expires 11-11-2004Date 11-5-04 Name FISHER CONTROLS INT'L LLC  
(NPT Certificate Holder)Signed [Signature]  
(authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or Province of Iowa  
and employed by Hartford Steam Boiler of CTof Hartford, CT have inspected these items described in this Data Report on 11-5-04 and state that to the  
best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has  
been authorized for stamping on the date shown above.By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report.  
Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected  
with this inspection.Date 11-05-04 Signed [Signature] Commissions 822 IA.  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

**06-010**

1. Owner <u>Detroit Edison Company</u>	Date <u>June 1, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Main Steam Line Drains System, B31.1 Class D+ Piping System (B2100F080B / V10-2007)</u>	
5. (a) Applicable Construction Code <u>ANSI B31.1,</u>	
<u>Class D+ 19 73</u> Edition <u>No</u> Addenda <u>N/A</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B2100F080B	Fisher Controls	None	N/A	V10-2007	1976	Replacement	N

7. Description of Work Install replacement stem and plug assembly as well as seat ring and cage.

8. Tests Conducted:    Hydrostatic ☐    Pneumatic ☐    Nominal Operating Pressure ☒    Other ☐    Pressure \_\_\_\_\_ psi    Test Temp. \_\_\_\_\_ °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Replaced stem and plug assembly, seat ring and cage in control valve. Replacement parts procured per PO# 394592. Heat Code #44830. Serial No. AG0711-3 for stem / plug assembly. Valve was built to ASME III, Class 2 requirements but was not 'N' stamped due to system design. Piping system is classified as ASME Section XI, Class 2.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Valve records to be supplemented by Owners Section XI Program 06-010

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date JUNE 1 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-6-06 to 6-5-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

M. Hambleton Commissions NI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date JUNE 5 20 06

(10/94)

For complete work package, see Work Request # H600040100

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*

As Required by the Provisions of the ASME Code, Section III  
Not to exceed One Day's Production

Pg. 1 of 1

06-010

Sheet 2 of 2

011-A032119710 IT. 3

1. Manufactured and certified by FISHER CONTROLS INT'L LLC, 205 SOUTH CENTER STREET, MARSHALLTOWN, IA 50158  
(name and address of NPT Certificate Holder)
2. Manufactured for DETROIT EDISON CO., P.O. BOX 1659, DETROIT, MICHIGAN, 48231  
(name and address of purchaser)
3. Location of installation FERMI II POWER PLANT, 6400 N. DIXIE HIGHWAY, NEWPORT, MI., 48166  
(name and address)
4. Type 1U4615 REV. B SB166 N06600 80 KSI N/A 2004  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)
5. ASME Code, Section III: 1971 WINTER 1971 2 N/A  
(edition) (addenda date) (class) (Code Case no.)
6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(no.)
7. Remarks: DESIGN: ASME B&PVC, SECT. III, 1971 EDITION, WINTER 1971 ADDENDA, CLASS 2  
OTHER: ASME B&PVC, SECT. III, 1989 EDITION, NO ADDENDA, CLASS 2
8. Nom. thickness (in.) N/A Min. design thickness (in.) N/A Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A
9. When applicable, Certificate Holders' Data Reports are attached for each item of this report:

	Part or Appurtenance Serial Number	Heat Number
(1)	AG0711-1 ✓	44830 ✓
(2)	AG0711-2 ✓	44830 ✓
(3)	AG0711-3 ✓	44830 ✓
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		
(11)		
(12)		
(13)		
(14)		
(15)		
(16)		
(17)		
(18)		
(19)		
(20)		
(21)		
(22)		
(23)		
(24)		
(25)		

	Part or Appurtenance Serial Number	Heat Number
(26)		
(27)		
(28)		
(29)		
(30)		
(31)		
(32)		
(33)		
(34)		
(35)		
(36)		
(37)		
(38)		
(39)		
(40)		
(41)		
(42)		
(43)		
(44)		
(45)		
(46)		
(47)		
(48)		
(49)		
(50)		

10. Design Pressure 1005 psi. Temp. 547 °F. Hydro. test pressure N/A at temp. °F  
(when applicable)

\*Supplemental information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 x 11, (2) information in items 2 and 3 on this Data Report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form



## FORM N-2 (back)

Mfr. Serial No AG0711-1,2  
&3

## CERTIFICATION OF DESIGN

Design specifications certified by SYLVESTER H. NOETZEL P.E. State MI Reg. no. 14386  
(when applicable)Design report\* certified by N/A P.E. State N/A Reg. no. N/A  
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) PLUG/STEMS  
conforms to the rules of construction of the ASME Code, Section III.NPT Certificate of Authorization No 1930 Expires 11-11-2004Date 11-5-04 Name FISHER CONTROLS INT'L LLC  
(NPT Certificate Holder)Signed [Signature]  
(authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or Province of Iowa  
and employed by Hartford Steam Boiler of CT  
of Hartford, CT have inspected these items described in this Data Report on 11-5-04 and state that to the  
best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has  
been authorized for stamping on the date shown above.

By signing this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this Data Report.  
Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected  
with this inspection.

Date 11-05-04 Signed [Signature] Commissions P22 IA.  
(Authorized Inspector) (Nat'l. Bd (incl endorsements) state or prov. and no.)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-012**

1. Owner Detroit Edison Company Date May 2, 2006  
Name  
6400 North Dixie Highway, Newport MI 48166 Sheet 1 of 1  
Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
Name  
6400 North Dixie Highway, Newport MI 48166
3. Work Performed by Detroit Edison Company Deco Maintenance  
Repair Organization P.O. No., Job No., etc.  
Type Code Symbol N/A  
Stamp  
Authorization No. N/A  
Expiration Date N/A
4. Identification of System T23-4524 - Primary Containment Penetration Assembly Torus to Reactor Bldg Vacuum Breaker System (N5-0392)
5. (a) Applicable Construction Code ASME III  
Class 2 19 71 Edition W '71 Addenda N/A Code Case  
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements 1992-92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
T2300F410	Jamesbury	NC46261-24B	N/A	V21-2016	1978	Replaced	Y

7. Description of Work Replace existing seal weld that was damaged during valve refurbishment.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☒ Pressure 64 psi Test Temp. 65.5 °F LLRT 43.401.374

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

- 9: Remarks Seal weld removal area was examined by the liquid penetrant method. Final seal weld was examined by the magnetic particle method. Pressure testing was subsequently performed on the seal weld at containment design pressure followed by an LLRT of the valve.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-0392 to be supplemented by Owners Section XI Program # 06-012

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 2 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-12-06 to 5-4-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Mark W. Dineen Commissions NI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date May 4 2006

(10/94)

Reference WR # A035060100 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

06-013

1. Owner <u>Detroit Edison Company</u>	Date <u>June 21, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 2</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	Deco Maintenance
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Standby Gas Treatment - Containment Interface Piping (N5-0443)</u>	
5. (a) Applicable Construction Code <u>ASME III, 19 71</u> Edition <u>S72</u> Addenda (Valve) <u>N/A</u> Code Case	
<u>Class 2 19 71</u> Edition <u>W71</u> Addenda	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
T4803F602	Jamesbury	VC46261-26A	N/A	VR3-3024	1978	Replacement	Y

7. Description of Work Install replacement shaft and wafer assembly after LLRT failure.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐   
Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F LLRT per 43.401.321/510

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks

Replacement valve shaft and wafer assembly procured per PO # 357616. SA-351 Grade CF8M. ASME III Class 2. Serial No. KHP-001.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original data report N5-0443 to be supplemented by Owners Section XI Program 06-013

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date JUNE 21, 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 04-14-06 to 06-29-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

M. J. J. J.  
Inspector's Signature

Commissions MI 610  
National Board, State, Province, and  
Endorsements

Date June 29 20 06

(10/94)

For complete work package, see Work Request # 000Z051606

FORM N-2 N OR NPT CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL  
NUCLEAR PARTS AND APPURTENANCES\*

NIS-2 06013  
SHEET 2 OF 2

As Required by the Provisions of the ASME Code, Section III, Division 1  
Not To Exceed One Day's Production

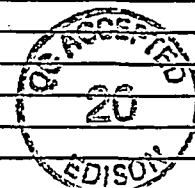
Pg 1 of 2

1. Manufactured and certified by Enertech, A Div. of Curtiss-Wright Flow Control Corp., 2950 Birch St., Brea, CA 92821  
(name and address of certificate holder)
2. Manufactured for Detroit Edison; 2000 2nd Avenue; Detroit, MI 48226-1279  
(name and address of purchaser)
3. Location of installation Detroit Edison; Fermi EF2; 6400 Dixie Hwy.; Newport, MI 48166  
(name and address)
4. Type NC-46261-25 & 26 SA-351 Gr. CF8M .70,000 PSI N/A 2001  
(drawing no.) (mat'l. spec. no.) (tensile strength) (CRN) (year built)
5. ASME Code, Section III: 1971 Summer 1972 2 None  
(edition) (addenda) (class) (Code Case no.)
6. Fabricated in accordance with Const. Spec. (Div. 2 only) N/A Revision N/A Date N/A  
(No.)
7. Remarks: Qty: 1 Shaft & Wafer Assy., 24" Jamesbury Butterfly Valve; Jamesbury P/N: 196-9139-98  
Stock No.: C7376N. ENERTECH Job No.: 24971V ✓

Mat'l.: Wafer - SA351 Gr. CF8M, Shaft - A564 Ty. 630 H1075, Taper Pins - A564 Ty. 630 H1075

8. Nom. thickness (in.) 1.0 Min. design thickness (in.) 0.58 Dia. ID (ft. & in.) 22.25 Length overall (ft. & in.) 54.9
9. When applicable, Certificate Holders' data reports are attached for each item of this report:

Part or Appurtenance Serial Number	National Board No. In Numerical Order	Part or Appurtenance Serial Number	National Board Number In Numerical Order
(1) KHP-001 ✓	N/A	(26)	
(2)		(27)	
(3)		(28)	
(4)		(29)	
(5)		(30)	
(6)		(31)	
(7)		(32)	
(8)		(33)	
(9)		(34)	
(10)		(35)	
(11)		(36)	
(12)		(37)	
(13)		(38)	
(14)		(39)	
(15)		(40)	
(16)		(41)	
(17)		(42)	
(18)		(43)	
(19)		(44)	
(20)		(45)	
(21)		(46)	
(22)		(47)	
(23)		(48)	
(24)		(49)	
(25)		(50)	



10. Design pressure 1250 psi Temp. 575 °F. Hydro. test pressure N/A at temp. °F.  
(when applicable)

\*Supplemental Information in the form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 X 11, (2) information in Items 2 and 3 on this data report is included on each sheet, (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(8/85)-1

This form (E90C40) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017.

## FORM N-2 (back)

Mfr. Serial No. KHP-001

## CERTIFICATE OF DESIGN

Design specifications certified by Lawrence D. Burr P. E. state MI Reg. no. 33999  
(when applicable)

Design report\* certified by N/A P. E. state            Reg. no.             
(when applicable)

## CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that this (these) 24" Shaft & Wafer Assy.  
 conform to the rules of construction of the ASME Code, Section III.

NPT Certificate of Authorization no. N-2827 Expires October 26, 2002

Date 11/08/01 Name ENERTECH Signed David E. W. Tuttle  
(NPT Certificate Holder) (authorized representative)

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the state or province of California and employed by Hartford Steam Boiler Insp. & Insur. Co.  
 of Connecticut have inspected these items described in this data report on 11-8-01, and state that to the best of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section III. Each part listed has been authorized for stamping on the date shown above.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this data report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

Date 11-8-01 Signed W. F. Reys Commissions QA1526 KB9435N  
(Authorized Inspector) (Nat'l Bd. (incl. endorsements) state or prov. and no.)



## 06-014

1. Owner	<u>Detroit Edison Company</u>	Date	<u>May 2, 2006</u>
	Name		
	<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet	<u>1 of 1</u>
	Address		
2. Plant	<u>Fermi 2 Nuclear Power Plant</u>	Unit	<u>2</u>
	Name		
	<u>6400 North Dixie Highway, Newport MI 48166</u>		
	Address		
3. Work Performed by	<u>Detroit Edison Company</u>	<u>Deco Maintenance</u>	
	Name	Repair Organization P.O. No., Job No., etc.	
	<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol	<u>N/A</u>
	Address	Stamp	<u>N/A</u>
		Authorization No.	<u>N/A</u>
		Expiration Date	<u>N/A</u>
4. Identification of System	<u>Primary Containment Pneumatic Supply Division 2 (N5-0523)</u>		
5. (a)	Applicable Construction Code	ASME III	
	Class 2	19 71	Edition
		W '71	Addenda
			N/A
(b)	Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements		
	1992-92 Addenda		

## 6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B2103A001C	RECO INC.	N-2216.30	73385	N/A	1976	Repaired	Y

7.	Description of Work
	Remove arc strike that was identified on accumulator tank B2103A001C by filing.

8. Tests Conducted: Hydrostatic [ ] Pneumatic [ ] Nominal Operating Pressure [ ]  
Other [ X ] Pressure psi Test Temp. \_\_\_\_\_ °F Performed UT & MT

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Removed arc strike and performed an MT and a UT thickness measurement in the arc strike removal area. No base metal was removed.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report N5-0523 to be supplemented by Owners Section XI Program # 06-014

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 2, 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-19-06 to 5-4-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

M. L. Jenkins

Inspector's Signature

Commissions MT 610

National Board, State, Province, and  
Endorsements

Date May 4, 20 06

(10/94)

Reference WR # 000Z061322 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-015**

1. Owner <u>Detroit Edison Company</u>	Date <u>May 2, 2006</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	Sheet <u>1 of 1</u>
Address	
2. Plant <u>Fermi 2 Nuclear Power Plant</u>	Unit <u>2</u>
Name	
<u>6400 North Dixie Highway, Newport MI 48166</u>	
Address	
3. Work Performed by <u>Detroit Edison Company</u>	<u>Deco Maintenance</u>
Name	Repair Organization P.O. No., Job No., etc.
<u>6400 North Dixie Highway, Newport, MI 48166</u>	Type Code Symbol <u>N/A</u>
Address	Stamp
	Authorization No. <u>N/A</u>
	Expiration Date <u>N/A</u>
4. Identification of System <u>Reactor Pressure Vessel ( CE-67211 &amp; Closure Head CE-67111)</u>	
5. (a) Applicable Construction Code <u>ASME III</u>	
<u>Class 1</u> <u>19</u> <u>68</u> Edition <u>S' 69</u> Addenda <u>(Various)</u> Code Case	
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements <u>1992-92 Addenda</u>	
6. Identification of Components Repaired or Replaced and Replacement Components	

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
B1100G000A	Combustion Engineering	CE- 67111	21085	CE-67211	1972	Repaired	Y

7. Description of Work	<u>Blend grind scrapes and grooves in Closure head stud holes and clean up damages threads on several RPV studs to allow installation of nuts and washers.</u>
8. Tests Conducted:	Hydrostatic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Nominal Operating Pressure <input checked="" type="checkbox"/> 24.137.21 / 43.000.005 Other <input type="checkbox"/> Pressure <u>1041</u> psi    Test Temp. <u>159</u> °F

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks After cleanup of damaged threads the 5 studs were visually examined. After stoning and /or sanding of the stud holes, the affected locations were visually examined and PT's were performed on 6 stud holes in the closure head.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report CE-67111/CE-67211 to be supplemented by Owners Section XI Program # 06-015

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 2 2006  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-26-06 to 5-04-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

Markus  
Inspector's Signature

Commissions NI 610  
National Board, State, Province, and Endorsements

Date May 4 20 06

(10/94)

Reference WR # 0002061423 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-016**

1. Owner Detroit Edison Company Date May 2, 2006  
Name  
6400 North Dixie Highway, Newport MI 48166 Sheet 1 of 1  
Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
Name  
6400 North Dixie Highway, Newport MI 48166
3. Work Performed by Detroit Edison Company Deco Maintenance  
Repair Organization P.O. No., Job No., etc.  
Type Code Symbol N/A  
Stamp  
Authorization No. N/A  
Expiration Date N/A
4. Identification of System Torus Suppression Chamber (C-4512)
5. (a) Applicable Construction Code ASME III  
Class 2 19 63 Edition S' 69 Addenda N/A Code Case  
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or  
Replacements 1992-92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
S/E Torus Hatch T2302X200A	CB & I	C-4512	N/A	X-200A	1973	Replacement	Y

7. Description of Work Replace 2 damaged Heavy Hex Nuts for S/E Torus Hatch.
8. Tests Conducted: Hydrostatic [ ] Pneumatic [ ] Nominal Operating Pressure [X]  
Other [X] Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F LLRT 43.401.208

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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-2 (Back)

9. Remarks Replacement nuts were procured per PO #975830. 5/8"-11 UNC 2B, SA-194 Grade 2H, Heat Trace/Code - 7220464/P217

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data report C-4512 to be supplemented by Owners Section XI Program # 06-016

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 2 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-26-06 to 5-11-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NI 610  
Inspector's Signature National Board, State, Province, and Endorsements

Date MAY 11 20 06

(10/94)

Reference WR # F011060100 for additional details.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As required by the Provisions of the ASME Code Section XI

**06-017**

1. Owner Detroit Edison Company Date May 11, 2006  
Name  
6400 North Dixie Highway, Newport MI 48166 Sheet 1 of 1  
Address
2. Plant Fermi 2 Nuclear Power Plant Unit 2  
Name  
6400 North Dixie Highway, Newport MI 48166
3. Work Performed by Detroit Edison Company Deco Maintenance  
Address Repair Organization P.O. No., Job No., etc.  
Name Detroit Edison Company Type Code Symbol N/A  
Stamp  
Address 6400 North Dixie Highway, Newport, MI 48166 Authorization No. N/A  
Expiration Date N/A
4. Identification of System Reactor Pressure Vessel Head Vent Piping and associated bolting material N5-0499 and N5-0724.
5. (a) Applicable Construction Code ASME III  
Class 1 19 71 Edition W '71 Addenda N/A Code Case  
(b) Applicable Edition/Addenda of Section XI Utilized for Repairs or Replacements 1992-92 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Bolting	Wisner & Becker	N/A	N/A	N/A	1982	Replacement	Y

7. Description of Work Replace 2 studs in the Reactor Pressure Vessel Head Vent Piping Bulkhead flange that did not allow for complete thread engagement of bolted connection.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☒ Pressure \_\_\_\_\_ psi Test Temp. \_\_\_\_\_ °F Performed VT-1 of Studs

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8 1/2 in. X 11 in., (2) information in items 1 through 6 on this 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.

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9. Remarks Replacement studs were cut from all-thread rod that was procured per PO # 968347. Material - SA-193 Grade B7, Heat Trace / Code 8991565 / F672.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp Original Code data reports N5-0499 and N5-0724 to be supplemented by Owners Section XI Program # 06-017

Certificate of Authorization No. N/A Expiration Date N/A

Signed R.M. Hambleton Lead ISI Engineer Date MAY 11 20 06  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB CT of One State Street, Hartford, CT 06102 have inspected the components described in this Owner's Report during the period 4-27-06 to 5-11-06, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's 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 Owner's 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.

[Signature] Commissions NI610  
Inspector's Signature National Board, State, Province, and Endorsements

Date May 11 20 06

(10/94)

Reference WR # F032060100 for additional details.