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June 26, 2000

U. S. Nuclear Regulatory Commission
Document Control Desk
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Subject: Entergy Operations, Inc.
Inservice Inspection Program, Revision 13

Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29

CNRO-2000/00022

Ladies and Gentlemen:

Entergy Operations, Inc. (Entergy) has issued Revision 13 of the Grand Gulf Nuclear Station (GGNS) Inservice Inspection (ISI) Program (GGNS-M-489.1) for use. The changes, discussed in Section 2 of the program, result from adopting portions of the 1995 Addenda as permitted by 10CFR50.55a(g)(4). In accordance with ASME Section XI, IWA-1400(c), Entergy is providing this copy of the program revision to the NRC for information only.

Should you have any questions, please contact Steve Lewis at (601) 368-5444 or Guy Davant at (601) 368-5756.

Very truly yours,

Ron Byrd for MAK

MAK/GHD/baa
attachment

cc: Mr. W. A. Eaton (GGNS) (w/o)
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Mr. S. P. Sakerak, NRR Project Manager (GGNS) (w/o)

A047

GGNS INSERVICE INSPECTION PROGRAM
GGNS-M-489.1, Rev. 13

INCORPORATION INSTRUCTIONS

REMOVE

SECTIONS 1 THROUGH 10

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

INSERT

SECTIONS 1 THROUGH 12

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

**PROGRAM SECTION
FOR
ASME SECTION XI, DIVISION 1
INSERVICE INSPECTION PROGRAM**

APPLICABLE SITES

ANO Unit 1: ☐ GGNS: ☒ W-3: ☐

ANO Unit 2: ☐ RBS: ☐ ECH: ☐

Safety Related: ☒ Yes

☐ No

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REVIEW AND CONCURRENCE SHEET

Program Section Title: GGNS-M-489.1, "ASME Section XI, Division I", Revision 13

Prepared By:

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5/17/00

Checked By:

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5/18/00

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18 MAY 00

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Concurred:

J. R. Hamilton

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Date:

5-22-2000

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50.59 REVIEW PRE-SCREENING

Facility: Grand Gulf Nuclear Station

I. SIGNATURES

Preparer:

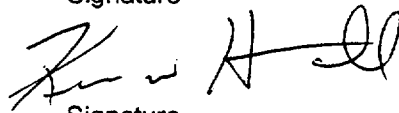

Signature

R. S. Lewis

Name (print)

5/17/00
Date

Reviewer:


Signature

Kevin Hull

Name (print)

5/22/00
Date

II. OVERVIEW

Document Evaluated: GGNS-M-489.1, Revision 13, "Program Section for ASME Section XI, Division 1 Inservice Inspection Program"

Brief Description of the Proposed Change: Reformat into a Program Section for issuance under Central Engineering Procedure EP-P-002-00. Also incorporate changes required by 10 CFR 50.55a including the adoption of later Editions and addenda and Code Cases.

III. PRE-SCREENING

Check the applicable boxes below. If any of the boxes are checked, neither a Screening nor a 50.59 Evaluation is necessary. Provide supporting documentation or references as appropriate.

- ☒ The change is editorial as defined in Section 5.3.4.J of this procedure. Provide document change request to the appropriate department, if required.
- ☐ The change is a substitute part per Section 5.4.1.2.
- ☐ The change will be controlled in its entirety under 10CFR50.54 instead of 10CFR50.59 per Section 5.4.1.3 of this procedure.
- ☐ An approved, valid Screening or 50.59 Evaluation covering all aspects of the change already exists per Section 5.4.1.4. Reference 50.59 Evaluation # _____ or attach documentation. Verify the previous Screening or 50.59 Evaluation remains valid.
- ☒ The proposed change, in its entirety, has been approved by the NRC per Section 5.4.1.5.
Reference: 10 CFR 50.55a
- ☐ The change is being made to conform to the SAR per Sections 5.4.1.6.

BASIS: (Discuss how the activity meets the Pre-Screening criteria.) Revision 13 of the ISI program is mostly an editorial change to

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BASIS: (Discuss how the activity meets the Pre-Screening criteria.) (Continued)

re-format the information and reissue the document to meet EP-P-002-00 as a Program Section under the controls of Central Engineering Programs. Additionally, except for Section 11, the total contents, including changes that are not editorial, are written for compliance with 10 CFR 50.55a as required by the NRC. Any deviation to the requirements of 10 CFR 50.55a requires NRC prior approval in accordance with 50.55a and is not subject to evaluation under the provisions of 10 CFR 50.59.

Section 11 contains commitments that are considered "Augmented Requirements" that may exceed the requirements of 50.55a and may be a result of license conditions or requirements. Changes to portions of Section 11, as discussed in Section 11, are subject to evaluation in accordance with 10 CFR 50.59 while other augmented requirements contained in Section 11 are ~~mad~~ mandatory by the NRC. However, revision 13 has only made editorial changes or changes that are pre-approved by the NRC in 50.55a.

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REVISION STATUS SHEET

REVISION SUMMARY

<u>REVISION</u>	<u>ISSUE DATE</u>	<u>DESCRIPTION</u>
0	6/29/84	Issued for Use
1	7/17/86	Complete Update
2	3/23/87	Incorporation of SCR/SCN's No.86-0001 thru No. 86-0008, No. 86-0010 thru No. 86-0013, and No. 87-0001.
3	11/28/87	Incorporation of SCR/SCN Nos. 87-0002 and 87-0003. Incorporation of DCP's No. 82/5020, 82/5020-1, 84/4038, 84/4076, 85/4034, 85/4035, 86/4034, and 86/4035; MNCR 1090/86; Relief Request I-00009; and Code Case N-343; Applicability Incorporation of DCA-NPE-87-103
4	2/9/89	Incorporation of DCP's No. DCP82/4186, 85/4053; SCR/SCN's No. 87-00049, 87-0002, 87-0058, 87-0005, 88-0015, 88-0022, 88-0023, 88-002, 88-03, 88-10, 88-011, 88-017, 88-018, 88-001, 88-012, 88-0020, 88-0026; MAEC-87/0330, NRC Generic Letter 88-01; MNCR's No. 337-87, 0478-87

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- 5 9/5/90 SCN/SCR's 87-00055, 88-00019, 88-00028, 89-00002, 89-00004, 89-00006, 89-00007, 90-00001 PMI's 89-3549, 89-3836, 89-4326, 90-0685, 90-0688, 90-1376; MNCR's 0187-87, 1067-86; EAR's M-440-87, M-235-87; SIL's 409 Rev. 1; DCP's 84/4049, DCP's 85/4036, 85/4037, 85/4042, 86/4014, 85/4042, 86/4014, CAR 2245; MNCR's 0650-85, 0931-86; SCN/SCR's 86/0089, 86/0096, 86/0097, 86/0098, 86/0101, 86/0102, 86/0112, 86/0118, 86/0152, 86/0194, 86/0199, 86/0209, 86/0216, 86/0305
- 6 12/23/91 Incorporation of DCP's No. 90/0551; MCP's- No. 90/1056, 90/1064, 91/1046; SCN/SCR's 89-0003, 90-0004, 90-0005, 90-0006, 90-0007, 90-0008, 90-0011, 90-0012, 90-0013, 90-0015, 91-0001, 91-0002, 91-0003, 91-0004, 91-0005, 91-0006, 91-0007, 91-0008, 91-0009, 91-0010, 91-0011, 91-0012, 91-0013, 91-0014, 91-0015, 91-0021, 91-0022
- 7 9/10/93 Incorporation of approved Change Requests 90-0005, 90-0009, 90-0010, 92-0001, 92-0002, 92-0004, 92-0007, 92-0009 and 93-0001. Incorporation of as-builts from MCP 90/1069, DCP 90/0005-1, DCP 90/0005-3, MCP 92/1037, DCP 88/0060-1 and DCP 88/0063. Also, the following Change Requests, submitted by Plant Staff and NPE but not issued against Revision 6, were incorporated in Revision 7: 91-0019, 91-0020, 92-0003, 92-0005, 92-0006, 92-0008, 92-0010, 92-0011, 92-0012, 92-0013, 92-0014, 92-0015, 92-0017, 93-0002, 93-0003, 93-0004, 93-0005, 93-0006, 93-0007, 93-0008 and 93-0009. Changes to the examination requirements for Standby Diesel and HPCS Diesel pipe

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supports were implemented based on the NPE response provided in EER 90/6465.

- | | | |
|----|---------|---|
| 8 | 2-2-95 | Incorporation of approved Change Requests 93-0013, 93-0015, 94-0012 and 94-0013 and as-builts from MNCR 287-92, MCP 93/1063, DCP 90/0005-2, MCP 92/1133 and MCP 92/1115. Also, the following Change Requests, submitted by Plant Staff and NPE but not issued against Revision 7, were incorporated in Revision 8: 93-0011, 93-0012, 94-0004, 94-0007, 94-0008, 94-0009, 94-0010, 94-0011, 94-0014, 94-0015, 94-0016, 94-0017, 94-0018, 94-0019 94-0020, 94-0022 and 94-0024. |
| 9 | 11/5/96 | Incorporation of approved Program Change Notices 91-0017, 95-01, 95-002, 95-003, 95-004, 95-005, 95-006, 95-007, 96-001, 96-02, 96-003, 96-004, 96-005, 96-006, Code Case N-508-1; Revised Relief Requests I-0002, I-0007, I-0008, I-0009, I-0010, I-0012, I-0014, I-0015, I-0018, I-0019, I-0024; Deleted Relief Requests: I-0004, I-0005, I-0006, I-0011, I-0017. |
| 10 | 6/25/97 | Updated to ASME Section XI, 1992 Edition with portions of 1993 Addenda. Added Code Case N-508-1 (GNRI 96/00200), CR 96/0342-00, DCP 91/0042-1, MCP 96/1007, MCP 95/1018, ER 97/0185, MCP 95/1040, DCP 94/0004, 94/004 Supp. 1, MCP 94/1024, MCP 96/1007, MCP 96/1004, and ER 97/0185 |
| 11 | 11/6/97 | Revise Section 6 and Appendix A to incorporate changes made to the Boundary Diagrams by incorporating the 1992 Edition of Section XI. And add Code Cases N-416-1 and N-532 to Section 2.4. |

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10/7/99

Incorporated: Code Cases N-509, N-524, and N-546; Relief Requests I-2-00001 and ISI-2-08; PCNs 97-0001, 98-0001, 98-0002, 98-0003, 98-0004, and 99-0002; MCPs 96/1005, 96/1002, 96-0383; Deleted 1B33G001W18-L-D from Period 1.

13

5/22/00

Revision 13 is an administrative rewrite that reformats the document into a Program Section managed by Central Engineering procedure EP-P-02. Additionally, the revision incorporates the latest requirements of 10 CFR 50.55a that was effective 9/22/99 including Code Cases N-513 and N-523-1.

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SECTION/APPENDIX REVISION STATUS

See the Table of Contents for Revision Status of each Section/Appendix.

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1.0 GENERAL PLANT DESCRIPTION AND PROGRAM REQUIREMENTS

This Program Section contains the details for the second 120-month Inservice Inspection (ISI) Program interval for the inspection of Class 1, 2, and 3 pressure retaining components and their supports at the Grand Gulf Nuclear Station, which is a General Electric BWR 6 design.

The initial 120-month ISI Program commenced with commercial operation on July 1, 1985. However, by authorization from the Director of the Office of Nuclear Regulation (Reference GNRI 96-00244) the first 120-month interval was extended until June 1, 1997. The second 120-month interval began on June 2, 1997 and will continue through June 1, 2007. The coordination of refuel outages and periods within the second interval is shown in Figure 1.1.

Changes to the contents of this Program Section shall be requested in accordance with Section 12, Program Change Notice.

2.0 CODE OF RECORD FOR THE SECOND INTERVAL

The initial Code of record, as approved by the NRC (Reference GNRI 96-00244), is the 1992 Edition with portions of the 1993 Addenda except that ultrasonic examinations shall be in accordance with the 1977 Edition with the Summer of 1979 Addenda as specified in the ISI plan for the first interval. The use of the 1977 Edition with the Summer of 1979 Addenda is limited until such time when changes to 10 CFR 50.55a require the use of ASME Section XI, Appendix VIII. Section 2 provides a detail listing of the applicable editions and addenda of Section XI as it applies to ultrasonic examinations based on current 10 CFR 50.55a requirements.

Subsequent to NRC's approval of the initial Code of record, later Edition and Addenda are adopted as permitted by 10 CFR 50.55a. Later Edition/Addenda of ASME Section XI that are used in the GGNS ISI program are identified in Section 2.

Section 3 of this Program Section, Code Cases, lists the adopted Code Cases for GGNS

Pursuant to the provisions of 10 CFR 50.55a(3) and (g)(5)(iii), requests for alternatives and specific requests for relief are submitted for NRC approval. Approved requests are contained as part of this Program Section in Section 4.

3.0 SCOPE

This Program Section identifies the items, such as welds, equipment, and supports that are subject to examination during the second ten-year interval in accordance with ASME Section XI. This Program Section also includes items requiring "augmented"

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examinations. These augmented examinations are the result of regulatory input (Generic Letters, IE Bulletins, Licensing Commitments, etc.) and/or service history (NSSS vendor correspondence, condition reports, etc.) and are performed in conjunction with or in addition to Code examinations.

The ISI Program includes the following:

- Piping weld examination
- Pipe and equipment support examination
- Reactor pressure vessel and other equipment examination
- Pump and valve body internal examination
- Bolting examination
- Pressure tests

For each component, this Program Section also provides information regarding examination method and the inspection period during which the component is scheduled to be examined. ISI piping isometric drawings and equipment sketches depicting the location of the components are included.

The Pump and Valve Inservice Test (IST) Program is a separate independent Program Section. The requirements for IST are not included in the scope of this Program Section.

The snubber program meets the requirements of the Plant Technical Specifications. The examination of snubbers is not included in the ISI Program Section.

The Inservice Inspection (ISI) Program for Containment is a separate independent Program Section. The requirements for ISI of the containment are not included in the scope of this Program Section.

4.0 REGULATORY GUIDANCE

The ISI program incorporates the augmented examination requirements of the following Regulatory Guides, IE Bulletins, NUREGS, Standard Review Plans and Generic Letters:

Reg. Guide 1.150	Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Inspection.
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- SRP 3.6.2 Determination of Break Location and Dynamic Effects Associated with Postulated Rupture of Piping (No Break Zone exams).
- NUREG 0619 BWR Feedwater Nozzle and Control Rod Drive Return Nozzle Cracking.
- Generic Letter 88-01 NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping.

5.0 EXAMINATIONS

5.1 Examination Criteria

The selection of items for inservice inspection is based on application of ASME - Section XI examination criteria in paragraphs IWB-1200, IWC-1200, IWD-1200 and IWF-1200 and on augmented inspection requirements identified in Section 11, Augmented Examinations, of this Program Section. The piping exempted per IWB-1220, IWC-1220 and IWD-1220 is listed in Appendix A, Line List, of this Program Section. Per IWF-1230, the supports on exempt piping and associated equipment and components are also exempt.

The performance of Inservice Inspection and NDE activities including the qualification of inspection and NDE personnel shall be in accordance with GGNS-M-489.2, Program Plan for the Performance of Section XI Examinations.

Items that cannot be examined per ASME Section XI requirements are identified in Relief Requests contained in Section 4 of this Program Section.

5.2 Pump/Valve Examination

Internal surfaces of Class 1 valve bodies exceeding 4 inch nominal size are subject to visual examination per Exam Category B-M-2. The grouping of Class 1 valve bodies is discussed in Section 7 of this Program Section.

The internal surfaces of the Class 1 pump casings are subject to visual examination per the Exam Category B-L-2. The grouping of Class 1 pump casings is discussed in Section 7 of this Program Section.

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5.3 Pressure Testing

Class 1, 2, and 3 pressure retaining boundaries are defined on the ISI Boundary Diagrams. These boundaries shall be subject to pressure test as specified in Section 5 of this Program Section.

5.4 Integral Attachments

Integral attachments are examined in accordance with Code Case N-509. As required by the NRC's approval, a minimum of 10% of all nonexempt integral attachments are required to be examined. Additionally, when evidence of component support deformation (e.g., broken, bent, or pulled out parts) is identified during operation, refueling, maintenance, examination, inservice inspection, or testing, the associated integral attachments shall be examined in accordance with the requirements of the Code Case. If conditions are detected that do not meet the acceptance criteria of the Code Case, additional and successive examinations shall be performed in accordance with IWB, IWC or IWD 2420 and 2430. Integral attachments examined because of support deformation cannot be credited towards the examination requirements for the period or interval.

6.0 REPORTS

6.1 ISI Summary Report

6.1.1 Entergy has adopted Code Case N-532 "Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000."

6.1.2 Code Case N-532 requires completion of Form OAR-1 "Owners Activity Report" after each refueling outage. Each OAR-1 prepared during an inspection period shall be submitted to the NRC within twelve months following the end of the inspection period.

6.1.2.1 It is to include ASME activities performed during the outage and the previous operating cycle.

6.1.2.2 It shall be completed prior to the start of the next outage or within twelve months of the completion of the inspection period, whichever comes first.

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6.1.3 Each OAR-1 is to contain the following information formatted in accordance with Code Case N-532.

6.1.3.1 Table 1 "Abstract Of Examinations And Tests" shall contain the following information for each examination category:

- 6.1.3.1.1 The examination category,
- 6.1.3.1.2 Total examinations required for the interval,
- 6.1.3.1.3 Total examinations credited for the period,
- 6.1.3.1.4 Total examinations credited (%) for the period,
- 6.1.3.1.5 Percentage of total examinations credited for the interval,
- 6.1.3.1.6 Applicable remarks.

6.1.3.2 Table 2 "Items With Flaws Or Relevant Conditions That Required Evaluation For Continued Service" shall contain the following information for all items with flaws or other relevant conditions requiring evaluation for continued service:

- 6.1.3.2.1 The examination category,
- 6.1.3.2.2 Item number,
- 6.1.3.2.3 Item description,
- 6.1.3.2.4 Flaw characterization,
- 6.1.3.2.5 Whether the flaw or condition was found in a scheduled Section XI examination or test.

6.1.3.3 Table 3 "Abstract Of Repairs, Replacements, Or Corrective Measures Required For Continued Service" shall be in accordance with GGNS-M-489.0.

7.0 PROGRAM ARRANGEMENT

7.1 This ISI Program Section is divided into the following items:

- 7.1.1. Table of Contents
- 7.1.2. Section 1 – Introduction
- 7.1.3. Section 2 – Addenda Paragraphs
- 7.1.4. Section 3 – Code Cases
- 7.1.5. Section 4 – Relief Requests

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- 7.1.6. Section 5 – Pressure Testing
 - 7.1.7. Section 6 – Calibration Standards
 - 7.1.8. Section 7 – Class 1 Pumps and Valves
 - 7.1.9. Section 8 – Examination Selection Summary
 - 7.1.10. Section 9 – Successive Examinations
 - 7.1.11. Section 10 – Risk-Informed Selections
 - 7.1.12. Section 11 – Augmented Examinations
 - 7.1.13. Section 12 – Program Change Notice
 - 7.1.14. Inservice Inspection Examination Appendices B through D - The inservice inspection examination appendices (tables) are grouped by scheduled exam period. Within each period, the examinations are divided by system and are sorted by Code Examination Category, and Code Item Number. Each inservice inspection requirement page contains the following information pertaining to the required exams:
 - 7.1.14.1. Schedule of Inspection
 - 7.1.14.2. System Designator and Description
 - 7.1.14.3. Code Class
 - 7.1.14.4. Item Identification (Component ID)
 - 7.1.14.5. Item Description
 - 7.1.14.6. Code Examination Category
 - 7.1.14.7. Code Item Number
 - 7.1.14.8. ISI Isometric Drawing Number
 - 7.1.14.9. Examination Method (surface, volumetric, etc.)
 - 7.1.14.10. Examination Notes - Notes are provided at the end of the system sections as required. Examination notes provide clarifications, and identify additional augmented exam requirements and reference other sections of the Program that contain applicable information necessary to conduct exams.
- 7.2. Appendices E through Z contain the isometric drawings for the ISI Program. The isometric drawings identify locations of Class 1, 2, and 3 piping and components

that are subject to inspection. Exempted piping may be shown when clarity or continuity is appropriate.

7.3. Schedule of Inspection

7.3.1 In the tables for inservice inspection requirements, the Period heading contains a one digit number (1, 2, or 3) which refers to the scheduled inspection period. Inspection period 1 consists of the first thirty-six (36) calendar months of the interval. Inspection period 2 consists of forty-eight (48) calendar months following the first period and inspection period 3 consists of the last thirty-six (36) months, making a total of 120 months, or 10 years. Examinations are scheduled to meet the requirements of Table IWB, C, D-2412-1 and IWF-2410-2 as applicable. In accordance with the provisions IWA-2400, the first period of the second interval has been extended for one year to permit 3 refuel outages to be included in the first period. The third period will be shortened by one year to return GGNS back to its original schedule. The overall affect of the first period extension, its coordination with refuel outages, and the adjustment to the third period is shown in Figure 1.1.

7.3.2 Where items are scheduled for examination in more than one period, they are included in the Tables for each scheduled period.

7.3.3 Where items are to be examined in conjunction with maintenance disassembly (such as Category B-M-2 valve bodies), they are scheduled for each period with an examination note referring to the specific scheduling requirement or to the Section discussing the scheduling requirement.

7.3.4 Where items are scheduled for examination each refueling outage or at a frequency different from the per period frequency, they are scheduled for each period with an examination note identifying the specific frequency.

7.4 Symbols and Abbreviations

7.4.1 Appendix E provides an index that explains the symbols and abbreviations used on the ISI drawings.

7.4.2 The following abbreviations are used in the Period Examination Tables for examination item. In some instances, these abbreviations may be combined with the use of a virgule "/" and or a hyphen "-" to describe two different items joined by a weld:

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<u>Abbreviation</u>	<u>Description</u>
A	Attachment Weld
B	Branch Weld
BG	Nuts, Bushings, Washers
BT	Bolt/Stud
C	Cirumferential Weld
E	Elbow
EQS	Equipment Support
F	Flange
FS	Flange Surface
H	Flued Head
HD	Vessel Head Section
I	Instrument
L	Longitudinal Weld
M	Pump
MD	Meridional Weld
NIR	Nozzle Inner Radius
NZ	Nozzle To Vessel Weld
P	Pipe
PC	Pump Casing Weld/Internal Surface
R	Reducer
S	Penetration Sleeve
SA	One Directional Rod Hanger
SB	Multi Directional Restraint
SC	Support with Thermal Movement
SE	Safe-end
SH	Vessel Shell Weld
SW	Socket Weld
SX	Safe-end Extension
T	Tee Fitting
THF	Vessel Flange Threads
TS	Thermal Sleeve
V	Valve
VB	Valve Body Weld/Internal Surface
W	Weldolet
X	Pipe Cap Or Pipe Cross
Z	Nozzle

- 7.5 Weld Examination Coverage - Examination coverage includes essentially 100% of the weld length except as permitted below:

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- 7.5.1 Examination coverage may be reduced when allowed by Code or when specific relief from the Code required coverage has been granted by the NRC. Where relief is granted, it is documented in Section 4 of this Program Section.
- 7.5.2 When essentially 100% of the examination volume or area cannot be examined due to component interference or part geometry, a reduction in examination coverage on any Class 1 or 2 weld is acceptable provided the reduction in coverage for that weld is less than 10%. Applicable examination records identify both the cause and % of reduced examination coverage. (As permitted by Code Case N-460)

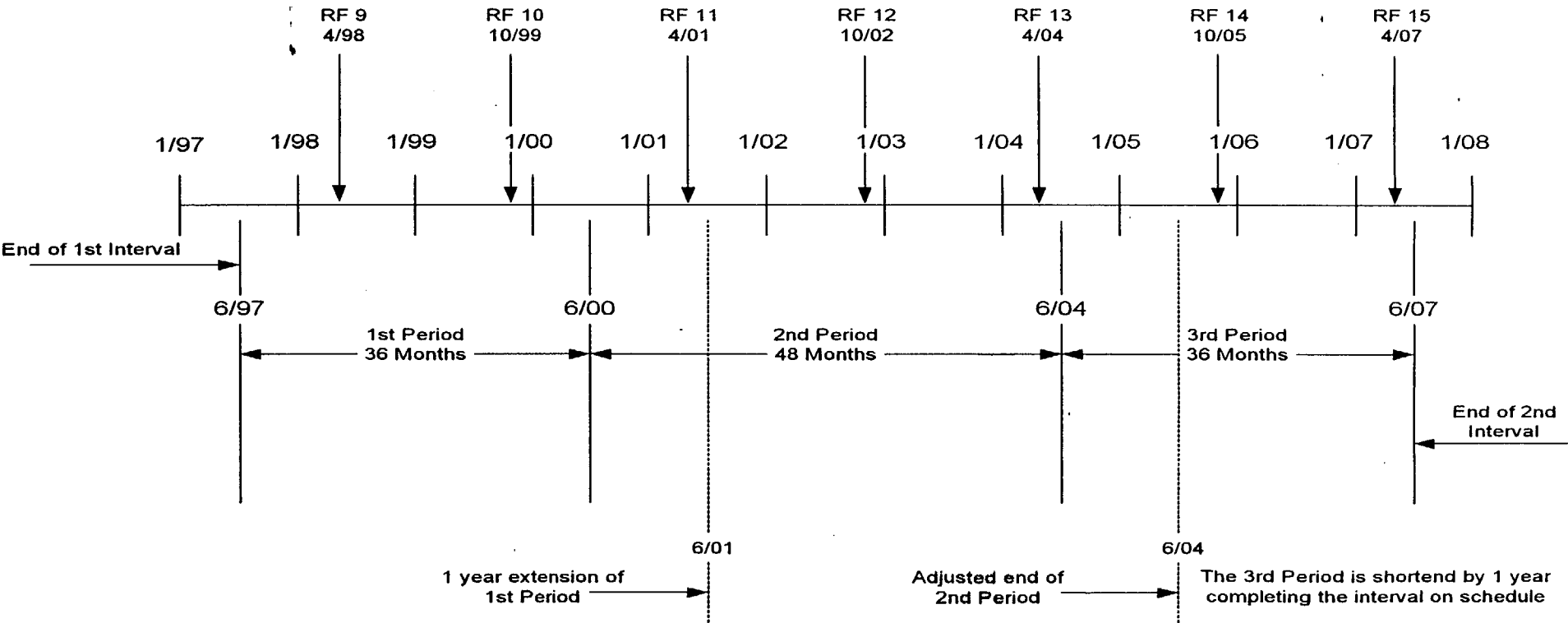


FIGURE 1.1

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LATER EDITIONS
AND ADDENDA

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SECTION 2
LATER EDITIONS AND ADDENDA

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1.0 Later Edition and Addenda

- 1.1. Within the provisions of ASME Section XI and 10 CFR 50.55a, the use of later Editions and/or Addenda of ASME Section XI is permitted with specific NRC approval. This provision has been further clarified by the NRC (Reference Ltr # 0CAN109510 from the NRC Region IV Office) to mean that their prior approval for use of later Edition/Addenda listed in 10 CFR 50.55a(b)(2) is not required and that only notification within a reasonable time frame is necessary.
- 1.2. Additionally, as the NRC determines appropriate through changes to 10 CFR 50.55a, they sometimes mandate the use of later portions of ASME Section XI. Section 2 of this program section identifies those later Editions and/or Addenda that have been included into the GGNS ISI program based on NRC approval or requirements.

2.0 1993 Addenda

- 2.1 Prior to the NRC approval of the 1992 Edition of ASME Section XI, by incorporation into 10 CFR 50.55a(b), the NRC authorized the use of the 92 Edition with select portions of the 1993 Addenda at GGNS (Reference GNRI 96-00244). Table 2.1 identifies the portions of the 1993 Addenda that have been adopted by Entergy and approved by the NRC for use with the GGNS ISI program.

TABLE 2.1
1993 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>
1. Table IWA-5210-1	Table IWA-5210-1 is revised to reflect a change in referenced paragraphs for Test Temperature requirements from IWB/IWC-5230 to IWB/IWC-5240 to be consistent with changes in paragraph numbers in IWB and IWC. This change has no impact on examination and test requirements.
2. Paragraphs IWA-5250(a)(2)	Paragraph IWA-5250(a)(2) is revised to delete the requirement for removal and examination of bolting in leaking bolted connections in gaseous systems.

TABLE 2.1
1993 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>
3. IWA-5265(b):	Paragraph IWA-5265(b) is revised to clarify that even if the test pressure at the highest elevations is not achieved, the maximum test pressure that any component is allowed to see is 106% of the specified test pressure.
4. Table IWB-2500-1, Examination Categories B-P	Table IWB-2500-1, Examination Category B-P is revised to delete the requirement for the Class 1 hydrostatic test once per interval.
5. Table IWB-2500-1, Examination Categories B-E	Table IWB-2500-1, Examination Category B-E is deleted. The requirements of this category involved duplicate examinations that were already addressed in Category B-P. This change has no affect on examinations and is considered to be a clarification.
6. Article IWB-5000 in its entirety	Article IWB-5000 is rewritten for clarity. Also the boundary requirements have been revised to change the end of the interval test boundary requirements for the hydrostatic test to the end of the interval requirements for the system leakage test. This is consistent with deletion of the periodic hydrostatic test requirement from Category B-P.
7 Table IWC-2500-1, Examination Category C-H	Table IWC-2500-1, Examination Category C-H is revised to delete the requirement for the Class 2 hydrostatic test once per interval.
8 Article IWC-5000 in its entirety	Article IWC-5000 is rewritten for clarity. Also, the boundary requirements have been revised to exempt open-ended discharge piping from the system leakage test.
9. Article IWD-5000 in its entirety	Article IWD-5210(b) has been rewritten for clarity. Paragraph IWD-5222(g) which required pressure tests of open-ended piping discharging to the suppression pool is deleted and IWD-5222(f) is rewritten to

TABLE 2.1
1993 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>
	exempt all open-ended piping (including open-ended suppression pool piping). The boundary requirements have been revised to exempt open-ended discharge piping from the system leakage test.
3.0	1995 Edition Through and Including the 1995 Addenda
3.1	As discussed in Paragraph 1.1, the NRC has approved the use of the 1995 Edition through and including the 1996 Addenda in 10 CFR 50.55a(b). Table 2.2 identifies the portions of the 1995 Addenda that are adopted by Entergy for use with the GGNS ISI program.

TABLE 2.2
1995 ADDENDA

<u>Code Paragraph</u>	<u>Code Change Description</u>	<u>Related Requirements</u>
1. Table IWA-5213	IWA-5213 is revised to reflect a change in the required hold time after pressurization to test conditions prior to performing visual examinations during the conduct of a system leakage test. This change eliminates the hold time after attaining the test pressure and temperature for periodic pressure testing. Repair/Replacement pressure testing hold times remain unchanged.	None
4.0	1995 Edition Through and Including the 1996 Addenda	
4.1	On September 22, 1999 10 CFR 50.55a was revised mandating the implementation of the 1995 Edition, through and including the 1996 Addenda of ASME Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems". Appendix VIII is comprised of multiple supplements for varying scopes of ultrasonic application. The NRC has mandated each supplement's use in accordance with a	

specific schedule for implementation. Additionally, by implementing Appendix VIII for each of the specific supplements, it also requires the use of Appendix VII from the 1995 Edition through the 1996 Addenda within the same schedule.

- 4.2 The Examination Category Item Numbers listed in Table 2.3 shall be ultrasonically examined in accordance with ASME Section XI, 1977 Edition through and including the 1979 Summer Addenda until the specified date. Beginning with the specified date, the ultrasonic examinations (preservice and inservice) shall be in accordance with ASME Section XI, Appendix VIII, 1995 Edition through and including the 1996 Addenda **and the additional requirements of 10 CFR 50.55a.**
- 4.3 Personnel performing ultrasonic examination of the Examination Category Item Numbers listed in Table 2.3 shall be qualified in accordance with ASME Section XI, Appendix VII, 1992 Edition until the specified date. Beginning with the specified date, personnel performing these examinations (preservice and inservice) shall be qualified in accordance with ASME Section XI, Appendix VII, 1995 Edition through and including the 1996 Addenda **and the additional requirements of 10 CFR 50.55a.** When updating to the requirements of Appendix VII, 1995 Edition, 1996 Addenda, IWA-2300 accepts existing qualifications using SNT-TC-1A until the re-qualification is required. Re-qualification shall be in full compliance with the 1995 Edition through the 1996 Addenda including the use of CP-189.

TABLE 2.3 1995 EDITION, 1996 ADDENDA IMPLEMENTATION SCHEDULE				
Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examination Requirements	New Certification Requirements	Notes
Examination Category: B-A				
B1.11	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.12	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.21 Clad	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.21 Unclad	11/20/00	Supps. 1 & 6	App. VII, 95E, 96A	
B1.22 Clad	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.22 Unclad	11/20/00	Supps. 1 & 6	App. VII, 95E, 96A	
B1.30	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.40	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
B1.51	11/20/00	Supps. 1, 4 & 6	App. VII, 95E, 96A	
Examination Category: B-D				

TABLE 2.3
1995 EDITION, 1996 ADDENDA IMPLEMENTATION
SCHEDULE

Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examination Requirements	New Certification Requirements	Notes
B3.90	11/22/02	Supps. 1 & 7	App. VII, 95E, 96A	
B3.100	11/22/02	Supps. 1 & 5	App. VII, 95E, 96A	
Examination Category: B-F				
B5.10	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: B-G-1				
B6.20	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.30	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.40	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.150	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.180	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
B6.210	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
Examination Category: B-J				
B9.11 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.12 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.31 Stainless	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
B9.11 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.12 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.31 Ferritic	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
B9.11 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
B9.12 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
B9.31 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: B-L-1 AND B-M-1				
B12.10	No Changes, Appendix VIII does not apply			
B12.40	No Changes, Appendix VIII does not apply			
Examination Category: B-O				
B14.10	No Changes, Appendix VIII does not apply			
Examination Category: C-A				
C1.10	No Changes, Appendix VIII does not apply			
C1.20	No Changes, Appendix VIII does not apply			
C1.30	No Changes, Appendix VIII does not apply			
Examination Category: C-B				
C2.21	No Changes, Appendix VIII does not apply			
C2.22	No Changes, Appendix VIII does not apply			

TABLE 2.3
1995 EDITION, 1996 ADDENDA IMPLEMENTATION
SCHEDULE

Item Number	Specified Date to Begin New Requirements	New Appendix VIII Examination Requirements	New Certification Requirements	Notes
C2.32	No Changes, Appendix VIII does not apply			
Examination Category: C-D				
C4.10	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.20	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.30	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
C4.40	5/22/00	Supps. 1 & 8	App. VII, 95E, 96A	
Examination Category: C-F-1				
C5.11 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.12 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.21 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.22 SS or HA	5/22/00	Supps. 1 & 2	App. VII, 95E, 96A	
C5.11 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.12 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.21 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
C5.22 Dissimilar	11/22/02	Supps. 1 & 10	App. VII, 95E, 96A	
Examination Category: C-F-2				
C5.51	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.52	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.61	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	
C5.62	5/22/00	Supps. 1 & 3	App. VII, 95E, 96A	

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CODE CASES

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CODE CASES

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1.0 Adoption of Code Cases

This Section addresses the adoption of Code Cases during the Second Inservice Inspection Interval. All Code Cases adopted for ASME Section XI activities for use during the Second Interval are listed in Tables 3.1, 3.2 or 3.3. The use of Code Cases is in accordance with ASME Section XI, IWA-2440, 10 CFR 50.55a, and Regulatory Guide 1.147. As permitted by 10 CFR 50.55a, and ASME Section XI with the additional provisions of Regulatory Guide 1.147, ASME Section XI Code Cases may be adopted and used as described below.

1.1 Adoption of Code Cases Listed for Generic Use in Regulatory Guide 1.147

Code Cases that are listed for generic use in the latest revision of Regulatory Guide 1.147 may be included into the ISI program provided any additional provisions specified in the Regulatory Guide are also incorporated. Code Cases that are listed in Regulatory Guide 1.147 and that have been adopted for use are listed in Table 3.1

1.2 Adoption of Code Cases Not Listed in Regulatory Guide 1.147

Adoption of Code Cases that have been approved by the Board of Nuclear Codes and Standards, but that have not been listed for generic use in Regulatory Guide 1.147, may be requested in the form of a "Request for Alternative" in accordance with 10 CFR 50.55a(a)(3). Once approved, these Requests for Alternatives will be available for use until such time that the Code Cases are adopted into Regulatory Guide 1.147, at which time compliance with the provisions contained in the regulatory Guide is required.

For convenience to the user of this ISI Plan, Requests for Alternative are included as an attachment to this section when their volume and format permit. Alternatively when the Request for Alternative is not attached, the appropriate internal correspondence number is provided to assist in retrieval from Entergy Document Control Centers. All other Requests for Alternatives and Relief Requests (those not associated with NRC approval of Code Cases) are addressed in Section 4 of this ISI Plan. Table 3.2 identifies those Requests for Alternatives that are provided as an attachment to this section.

1.3 Adoption of Code Cases Listed in 10 CFR 50.55a

Code Cases that are listed for generic use in 10 CFR 50.55a may be included into the ISI program provided any additional provisions specified in 10 CFR 50.55a

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CODE CASES

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are also incorporated. Code Case that are listed in 10 CFR 50.55a and that have been adopted for use are listed in Table 3.3

1.3 Use of Annulled Code Cases

As permitted by Regulatory Guide 1.147 (D) (3), Code Cases that have been adopted for use in the current interval that are subsequently annulled by ASME, may be used for the remainder of the interval.

1.4 Code Case Revisions

As permitted by Regulatory Guide 1.147 (D) (2), activities performed to a specific revision of an approved Code Case need not be changed because a subsequent revision of the Code Case is listed as the approved version in the Regulatory Guide.

1.5 Adoption of Code Cases Issued Subsequent to Filing the Inservice Inspection Plan

Code Cases issued by ASME Section XI subsequent to filing the Inservice Inspection Plan with the NRC may be incorporated within the provisions of paragraphs 1.1, 1.2, or 1.3 by either a revision or a PCN to this ISI Plan.

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TABLE 3.1

CODE CASES ADOPTED from REGULATORY GUIDE 1.147

Code Case Number	Title	Reg. Guide 1.147 Revision
N-307-1	Revised Ultrasonic Examination Volume for Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1, When the Examinations are Conducted From the Center-Drilled Hole, Section XI, Division 1	12
N-335-1	Rules for Ultrasonic Examination of Similar and Dissimilar Metal Piping Welds, Section XI, Division 1. (Inc W85)	12
N-416-1	Alternative Pressure Test Requirements for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2, and 3, Section XI, Division 1	12 (Limitations) (See Note 1)
N-435-1	Alternative Examination Requirements for Vessels with Wall Thickness 2 in. or Less, Section XI, Division 1	12
N-460	Alternative Examination Coverage for Class 1 and 2 Welds, Section XI, Division 1	12
N-461	Alternative Rules for Piping Calibration Block Thickness, Section XI, Division 1	12 (Limitations) (See Note 2)
N-496-1	Helical Coil Threaded Inserts, Section XI Division 1	12
N-498-1	Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1, 2, and 3 Systems, Section XI, Division 1	12
N-509	Alternative Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments, Section XI, Division 1	12 (Limitations) (See Note 3)
N-524	Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping, Section XI, Division 1	12

Table 3.1 Notes:

1. Additional surface examinations should be performed on the root (pass) layer of butt and socket welds of the pressure retaining boundary of Class 3 components when the surface examination method is used in accordance with Section III.

Table 3.1 Notes (continued):

2. Thickness measurements and weld joint contour/component must be known and used by the inspector who conducts the UT examination.
3. A minimum 10% sample of integrally welded attachment for each item in each Code Class per interval should be examined.

TABLE 3.2

CODE CASES APPROVED THROUGH REQUESTS FOR ALTERNATIVES

Code Case Number	Title	Submittal Letter Number	Approved By The NRC	Attached
N-508-1	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purposes of Testing	GNRO 96/00071 GNRO 96/00102 GNRO 97/00003	GNRI 96/00200 GNRI 97/00031	NO
N-532	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000	1CAN069704	GNRI 97/08144	NO
N-546	Alternative Requirements for Qualification of VT-2 Examination Personnel	GNRO 96/00069 GNRO 97/00003 GNRO 97/00042	GNRI 97/00031 (See Note 1)	NO

Table 3.2 Notes:

1. The use of Code Case N-546 includes:
 - (a) Development of procedural guidelines for obtaining consistent, quality VT-2 visual examinations in accordance with ASME Section XI, IWA-2210.
 - (b) Document and maintenance of records to verify the qualification of persons selected to perform VT-2 visual examinations in accordance with IWA-1400(k).

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- (c) Independent review and evaluation of leakage by persons other than those that performed the VT-2 visual examinations in accordance with IWA-1400(n).
- (d) VT-2 inspections requiring the oversight of an authorized nuclear inservice inspector in accordance with IWA-1400(f).
- (e) VT-2 results evaluated in accordance with IWB/IWC/IWD-3000, and Corrective measures in accordance with IWA-5250.

TABLE 3.3
CODE CASES ADOPTED from 10 CFR 50.55a

Code Case Number	Title	Notes
N-513	Evaluation Criteria for Temporary Acceptance of Flaws in Class 3 Piping	1
N-523-1	Mechanical Clamping Devices for Class 2 and 3 Piping	2

Table 3.3 Notes:

1. The use of Code Case N-513 includes:
 - (a) Licensees must apply all of the Code Cases provisions
 - (b) When implementing the Code Case, the specific safety factors in paragraph 4.0 of the Code Case shall be satisfied.
 - (c) The NRC approves the use of Code Case N-513 only for application to pipes and tubes and the NRC does not accept its application to:
 1. Components such as pumps, valves expansion joints, and heat exchangers.
 2. Leakage through a flange gasket.
 3. Threaded connections employing nonstructural seal welds for leakage prevention. Through seal weld leakage is not a structural flaw, thread integrity must be maintained.
 4. Degraded socket welds.
2. When using Code Case N-523-1 all of its provisions shall be applied and the NRC limits its use to Class 3 applications.

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RELIEF REQUESTS

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I-2-00001	1 - 9	0
ISI2-08	1 - 3	0

SECTION 4
RELIEF REQUESTS

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1.0 Purpose and Scope

- 1.1 Section 4 identifies Requests for Alternative that have been approved by the NRC under the provisions of 10 CFR 50.55a(a)(3) and Requests for Relief that have been approved by the NRC under the provisions of 10 CFR 50.55a(g)(6).
- 1.2 Requests for Alternatives that approve the use of Code Cases are addressed in Section 3 of this ISI Plan.

2.0 Request for Alternative/ Request for Relief Index

For convenience to the user of this ISI Plan, Requests for Alternative and Requests for Relief are included as an attachment to this section when their volume and format permit. Alternatively when the Request for Alternative or the Request for Relief is not attached, the appropriate internal correspondence number is provided to assist in retrieval from Entergy Document Control Centers. Table 4.1 provides an index for all Requests for Alternatives and Requests for Relief that are within the scope of this section and indicates which are included as an attachment.

TABLE 4.1			
Relief Request No.	Request Description	Entergy Correspondence	ATTACHED
		NRC SER Correspondence	
I-2-00001, Revision 0	Circumferential Shell Welds in Reactor Vessel	GNRO 98/00030	Yes
		GNRI 98/00059	
ISI2-08, Revision 0	System Pressure Test Corrective Actions	CNRO 98/00004	Yes
		CNRI 98/00002, GNRI 98/00029	
N/A	Use of the 1992 Edition with Portions of the 1993 Addenda of ASME Section XI	GNRO 96/00066	No
		GNRI 96/0244	

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RELIEF REQUESTS

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3.0 Relief Requests

The attached Relief Requests are identical to what is approved by the NRC with the exception of sections that are added to each relief request after NRC approval. This section reflects conditions that may have been included in the NRC Safety Evaluation that result in additional requirements/action that were not part of the initial request.

**ENTERGY OPERATIONS, INC.
GRAND GULF NUCLEAR STATION
2 nd TEN YEAR INTERVAL
REQUEST NO. I-2-00001**

I. COMPONENT / EXAMINATION IDENTIFICATION:

Code Class:	1
References:	ASME Section XI, 1992 Edition, IWB-2500; 10 CFR 50.55a(a)(3)(i) and 10 CFR 50.55a(g)(6)(ii)(A)(2); BWRVIP-05, "BWR Reactor Pressure Vessel Shell Weld Inspection"; NRC Information Notice 97-63, "Status of NRC Staff's Review of BWRVIP-05"; BWRVIP Response to NRC RAI on BWRVIP-05, 12/22/97
Examination Category:	B-A
Item No.:	B1.11
Examination Required:	Volumetric Examination of Welds and Adjacent Base Materials
Description:	Circumferential Shell Welds in Reactor Vessel
Component Number:	Q1B13D001

II. REQUIREMENTS:

ASME Section XI, 1992 Edition, IWB-2500 requires the subject welds and associated base material to be volumetrically examined once each interval. The examinations are to be dispersed over the three periods of the interval within the limits specified by IWB-2412-1. Deferral of the examinations until the end of the interval is permissible; however, the examinations during the initial interval were not deferred, and IWB-2420 requires the sequence of examinations established in the first interval to be repeated during subsequent intervals to the extent practical.

In 1992, Title 10 of the Code of Federal Regulations (10 CFR) were amended with the addition of 50.55a(g)(6)(ii)(A), "Augmented Examination of Reactor Vessel." Section 50.55a(g)(6)(~~ii~~)(A)(2) requires licensees to augment their reactor vessel examinations by implementing once, as part of the inservice inspection interval in effect on September 8, 1992, the examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel" in Table IWB-2500-1 of subsection IWB of the 1989 Edition of ASME Section XI, subject to the conditions specified in 50.55a(g)(6)(ii)(A)(3) and (4). The augmented examination when not deferred in accordance with the provisions of 50.55a(g)(6)(ii)(A)(3), shall be performed in accordance with the related procedures specified in the Section XI Edition

and Addenda applicable to the inservice inspection interval in effect on September 8, 1992. For the purpose of this augmented examination, "essentially 100%", as used in Table IWB-2500-1, means more than 90% of the examination volume of each weld, where the reduction in coverage is due to interference by another component or part geometry.

Section 50.55a(g)(6)(ii)(A)(3) permits licensees with fewer than 40 months remaining in the inservice inspection interval in effect on September 8, 1992, to defer the augmented reactor vessel examination specified in 50.55a(g)(6)(ii)(A)(2) to the first period of the next inspection interval under certain conditions. However, if the augmented examinations are deferred to the first period of the next inspection interval, 50.55a(g)(6)(ii)(A)(3)(vi) requires the deferred examinations to be performed in accordance with the related procedures specified in the Section XI edition and addenda applicable to the inspection interval in which the augmented examination is performed.

Section 50.55a(g)(6)(ii)(A)(4) indicates that the requirement for augmented examination of the reactor vessel may be satisfied by an examination of essentially 100% of the reactor shell welds specified in 50.55a(g)(6)(ii)(A)(2) that have been completed, or are scheduled for implementation with a written commitment, or are required by 50.55a(g)(4)(i), during the inservice inspection interval in effect on September 8, 1992.

III. BASIS FOR ALTERNATIVE

Pursuant to the provisions of 10 CFR 50.55a(a)(3)(i), and consistent with information contained in NRC Information Notice 97-63, an alternative is requested from the examination of RPV circumferential welds as required by ASME Section XI, IWB-2500, Examination Category B-A, Item No. B1.11, and 10 CFR 50.55a(g)(6)(ii)(A)(2) as described within. This proposed alternative is to postpone the examination of the RPV circumferential welds for two operating cycles, until Refueling Outage RF11 that is presently scheduled to begin in approximately April, 2001. The basis for this request for alternative is documented in the report "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)" that was transmitted to the NRC in September 1995 and BWRVIP Response to NRC RAI on BWRVIP-05 that was transmitted to the NRC on December 18, 1997.

The BWRVIP-05 report provides the technical basis for eliminating examinations of BWR RPV circumferential shell welds. The BWRVIP-05 report concludes that the probability of failure of the BWR RPV circumferential shell welds is orders of magnitude lower than that of the axial shell welds. Additionally, the NRC assessment demonstrated that examination of BWR RPV circumferential shell welds does not measurably affect the probability of failure. Therefore the NRC evaluation appears to support the conclusions of BWRVIP-05.

The independent NRC assessment utilized the FAVOR code to perform a probabilistic fracture mechanics (PFM) analysis to estimate RPV failure probabilities. Three key assumptions in the PFM analysis are:

- (1) the neutron fluence was that estimated to be end-of-license (EOL) mean fluence,
- (2) the chemistry values are mean values based on vessel types, and
- (3) the potential for beyond-design-basis events is considered.

Although BWRVIP-05 provides the technical basis supporting the request for alternative, the following information is provided to show the conservatisms of the NRC analysis for the Grand Gulf Nuclear Station (GGNS). For plants with RPVs fabricated by Chicago Bridge & Iron (CB&I), the mean EOL neutron fluence used in the NRC PFM analysis was $0.19\text{E}+19 \text{ n/cm}^2$. However, the highest surface fluence for the GGNS RPV beltline region at the end of the requested alternative period is predicted to be $0.102\text{E}+19 \text{ n/cm}^2$. Thus the effect of fluence on embrittlement is much lower, and the NRC analysis as described in the NRC independent assessment is conservative for GGNS in this regard. Therefore, there is significant conservatism in the already low circumferential-weld-failure probabilities as related to GGNS. Other GGNS RPV shell weld information that the NRC staff has requested be included in this relief request is provided in the attached Table 1.

As shown in UFSAR Figure 5.3-9, GGNS does not have any circumferential welds in the beltline region. However, an evaluation showing the effects of radiation have been performed on the two circumferential welds that are closest to the core. The effects of irradiation depicted in this relief request are significantly exaggerated because:

- the two welds are not located in the peak fluence region of the beltline, however peak beltline fluence values have been used in their evaluation (weld AB is approximately 5 inches below the core and weld AC is approximately 22 inches above the core),
- the fluence used in this relief request represents surface fluence and not $1/4t$ fluence, and
- there is no credit taken for the attenuation caused by the RPV inner surface cladding.

The results of the evaluations are listed in Table 1. As shown in Table 1, the calculated embrittlement shift in RT_{NDT} (i.e., ΔRT_{NDT}) for the GGNS Unit 1 vessel is a maximum of 22.76° F at the end of the requested relief period. By comparison, using the mean values for fluence and weld chemistry assumed for CB&I reactor vessels in Table 7-5 of Enclosure 1 to the NRC independent assessment report, a ΔRT_{NDT} of 30.16° F would be derived. Therefore, the calculated ΔRT_{NDT} value for the GGNS vessel is less than, and thus bounded by, the embrittlement shift assumed in the NRC's independent assessment.

Furthermore, it can be seen in the attached Table 1 that the calculated Upper Bound RT_{NDT} value for the GGNS near-beltline welds is a maximum of 25.52°F at the end of the requested relief period. For comparison, the Upper Bound RT_{NDT} value in Table 7-8 of Enclosure 1 to the NRC's independent assessment report of BWRVIP-05 is 32.7°F for fluence reference case 1. Again, the calculated Upper Bound RT_{NDT} values for the GGNS vessel circumferential welds are clearly bounded by the limiting RT_{NDT} from Table 7-8 (CB&I vessels) of the NRC independent assessment report, thus providing additional assurance that the GGNS vessel welds are also bounded by BWRVIP-05 report.

An added safety margin has been provided at GGNS by the nondestructive examination (NDE) of the vessel welds. A complete Preservice Inspection (PSI) was performed on all of the RPV shell welds, both longitudinal and circumferential, to the maximum extent practical before GGNS initially loaded fuel. The same welds have also completed Inservice Inspection (ISI) ultrasonic examinations required during the first 10-year interval. The examination coverage for both PSI and ISI for all welds except for circumferential weld AA exceeded 90% coverage of the full volume. Weld AA has been examined over its complete length, but due to scanning limitations from the lower head side of the weld, it was only examined for approximately 67% of the Code required volume.

At the August 8, 1997 meeting and in the NRC's independent assessment, the NRC staff indicated that the potential for, and consequences of, nondesign-basis events not addressed in the BWRVIP-05 report should be considered. In particular, the NRC staff stated that nondesign-basis cold over-pressure transients should be considered. It is highly unlikely that a BWR would experience a cold over-pressure transient. In fact, for a BWR to experience such an event would generally require several operator errors. At the August 8, 1997 meeting, the NRC staff described several types of events that could be precursors to BWR RPV cold over-pressure transients. These were identified as precursors because no cold over-pressure event has occurred at a U.S. BWR. Also at the August 8 meeting, the NRC staff identified one actual cold over-pressure event that occurred during shutdown at a non-U. S. BWR. This event apparently included several operator errors that resulted in a maximum RPV pressure of 1150 psi with a temperature range of 79°F to 88°F. As a result of the NRC's concerns, the BWRVIP has included in Attachment 1 to their response to the NRC's RAI on BWRVIP-05 significant discussion regarding BWR cold pressurization events. GGNS has reviewed the BWRVIP's response and concurs that the conditions and events are accurately depicted and that the procedures and personnel training at GGNS are comparable to those described by the BWRVIP and are adequate to prevent a cold over-pressure transient event. Consequently, the probability of a cold over-pressure transient is considered to be less than or equal to that used in the NRC analysis described in the NRC independent assessment and is conservative for GGNS.

Review of Potential Injection Sources That Could Cause a Reactor Pressure Vessel Cold Over-Pressurization:

The Reactor Core Isolation Cooling (RCIC) system is one of the high pressure make-up systems at GGNS. The RCIC system is a steam turbine driven system. RCIC injection during cold shutdown is not possible as no steam is available to drive the RCIC turbine. The RCIC turbine was designed to also operate on Auxiliary Steam for testing purposes. The supply line has a removable spool piece and is blind flanged. Operation with Auxiliary Steam is not allowed by procedure.

The High Pressure Core Spray (HPCS) system is another high pressure make-up system at GGNS. The HPCS pump is motor operated so it can be operated when the reactor is in cold shutdown. However, to start the HPCS system would require either manual initiation, inadvertent initiation or manual startup for the HPCS system to start and inject into the reactor vessel. Also, there is a high level interlock for the HPCS injection valve to prevent overfilling the reactor vessel. This high level interlock cannot be overridden. Even if the HPCS system is inadvertently started it should not overfill and pressurize the reactor due to the high level interlock.

The Standby Liquid Control (SBLC) is another high pressure system used to shut down the reactor if the control rods fail to insert. The SBLC system has no auto start function so it is unlikely that a spurious initiation could occur. The SBLC system must be manually initiated by a key lock switch. The Plant Supervisor maintains custody of the keys. SBLC is a low flow rate system (about 42 gpm per pump) and is limited to the amount of water that is contained in the storage tank (about 5000 gallons). Even if the SBLC system was manually initiated and not monitored there would not be enough water in the storage tank to fill the reactor from normal water level and would not, therefore, pressurize the reactor.

The Reactor Feed pumps are the high pressure makeup system during normal operation. The Reactor Feed pumps are steam driven and cannot be operated when the reactor is in cold shutdown because no steam is available to drive the turbine. The Reactor Feed pumps also have a reactor hi level trip.

The Condensate system is the supply source to the Reactor Feed pumps. The Condensate pumps have a discharge pressure of about 150 psig and the Condensate Booster pumps have a discharge pressure of about 650 psig. During operation of both Condensate and Condensate Booster pumps, sufficient temperature margin is provided to ensure that the Technical Specification for the reactor pressure-temperature is not exceeded. This is accomplished by plant procedures dictating when Condensate and Condensate Booster operation is allowed. When the plant is in cold shutdown, reactor temperature is maintained above 70°F per Technical Specifications. If a Condensate pump was started (requires manual action) and lined up for injection and the resulting reactor level increase ignored, the reactor pressure-temperature limit would still not be exceeded since the shut

off head of the Condensate pump is about 150 psig (about 300 psig required to exceed limit).

For the reactor pressure-temperature limit to be exceeded, a Condensate pump would have to be manually started, a Condensate Booster pump would have to be manually started, and both manually lined up for injection. Then the injection would have to be ignored by the operating crew and allowed to continue until the reactor is then pressurized above the pressure-temperature limits. The operating crew would have numerous indications that Condensate was injecting (feedflow indicators and recorders, check valve indication) and reactor level and pressure increases (Upset and shutdown level indication and recorders, narrow and wide range pressure indicators and recorders). Because of the number of operator errors that would have to occur and the number of indications that would have to be ignored, the probability of this event is very low.

The Low Pressure Core Spray (LPCS) system is a low pressure ECCS spray system. Technical Specifications for the reactor pressure temperature limit permit pressures up to about 300 psig at temperatures from 70 up to 100°F. Above 100°F, pressures permitted by Technical Specifications increase immediately to above 700 psig and thereafter increase rapidly with temperature increases. The LPCS system has a discharge pressure of about 500 psig. During refueling outages there is typically only a very short period of time during detensioning and following vessel head retensioning that an overpressurization event could occur. As soon as the vessel head is retensioned, the IOIs instruct the operators to begin heatup. Plant procedures also specify that temperatures be maintained between 120 and 130°F during shutdown. Therefore, the reactor bulk coolant temperature is normally well above 100°F. Procedural controls and the short period of time when the vessel coolant temperatures could be below 100°F make the probability for an over-pressurization due to an inadvertent actuation of this system very low.

The Low Pressure Core Injection (LPCI) systems (3 total) are low pressure ECCS injection systems. The LPCI systems have a discharge pressure of about 300 psig. If they were to be inadvertently initiated or manually started and lined up to the reactor they would only pressurize the reactor to approximately 300 psig. Technical Specifications requires that reactor metal temperature be maintained above 70°F. Because of this, the Technical Specification requirement for reactor pressure-temperature limit would not be exceeded.

The Control Rod Drive (CRD) system is a high pressure system used to operate control rods. The CRD system is a low flow rate system with about 60 gpm flow rate to the reactor. During cold shutdown conditions reactor water level is maintained with CRD (makeup) and Reactor Water Cleanup (reject). Per plant procedures the reactor head vents are open when reactor coolant temperature is less than 190°F. During cold shutdown conditions the operators closely monitor reactor water level, temperature and pressure. With the CRD flowrate low and the reactor head vents open, the operators

should have sufficient time to react to regain control of reactor pressure, should any abnormalities occur.

Post Outage Primary System Hydrostatic Testing is another postulated over-pressurization event. GGNS has plant procedures as well as Technical Specifications that dictate parameters and steps in performing hydrostatic testing. Hydrostatic testing is considered an "Infrequently Performed Test or Evolution". This requires management oversight, crew briefs, review of industry events and assigned responsibilities for the test to be performed. Reactor coolant is heated up to 155 -175°F before reactor pressure is increased to test pressure. Reactor level is maintained with CRD (make-up) and/or RWCU (blowdown). Reactor pressure changes are limited to 50 psi per minute by plant procedures. Two safety relief valves are required to be operable during the test by plant procedures. Because of these strict controls, the likelihood of an overpressurization event during a hydrostatic test is minimal.

Procedural Controls and Operator Training That Prevent Reactor Pressure Vessel Cold Over-Pressurization:

Plant procedures and Technical Specifications dictate bands at which reactor water level, pressure and temperature are to be maintained which ensures an adequate level of safety during all modes of operation. Operation of GGNS follows the steam saturation curve. Therefore, the operating temperatures are expected to be well in excess of the minimum temperatures required by Technical Specifications. The Control Room Operators are required by procedure to maintain reactor parameters (i.e., water level, pressure and temperature) within these bands and to frequently monitor those parameters. They are also required by procedure to report to the Plant Supervisor anytime operation is outside of a prescribed band. The Plant Supervisor is responsible to ensure that actions are taken to establish those parameters back within the desired band. Also, as previously noted, plant procedures require pre-job briefings and contingency plans before infrequent tests or evolutions are performed. Training reinforces these requirements in both classroom and simulator training. Finally, plant conditions, status of plant equipment, special activities along with their potential effect on key plant parameters, and contingency planning are discussed with oncoming crews during shift turnover.

At GGNS, work performed during an outage is scheduled by the Outage Management group. Outage Management includes Senior Reactor Operators who provide oversight of the outage schedule development to avoid conditions that could adversely affect reactor water level, pressure or temperature. From the outage schedule, a plan of the day is developed listing the work activities that will be performed that day. The plan of the day schedule is approved and reviewed by management. The plan of the day is assessed for shutdown risk to ensure an adequate level of safety is maintained. Any changes to the plan of the day must be approved by management.

The Refueling Integrated Operating Instruction (IOI) procedure requires that the reactor be depressurized before flooding up to the cold shutdown water level of about 230 inches when entering Refuel operations. Shutdown IOI requires that the Reactor Head Vents be opened when reactor coolant temperature is about 190°F during reactor cooldown. During Hydrostatic testing, the Reactor Vessel In-Service Leak Test IOI requires reactor coolant temperature be heated up to 155-175°F and at least 2 Safety Relief Valves to be operable prior to increasing reactor pressure. All of these help ensure the Technical Specifications requirements for reactor pressure-temperature limits are not exceeded.

IV. CONCLUSION

Based on BWRVIP-05, the risk-informed independent assessment performed by the NRC staff, the BWRVIP's response to the NRC's RAI, and the discussion contained within, an alternative to the cited requirements under the provisions of 10 CFR 50.55a(a)(3)(i) to delay the described examinations until Refueling Outage RF11 is reasonable and will provide an acceptable level of quality and safety.

V. NRC CONDITIONS

NRC's approval of the requested alternative does not contain any conditions. The request for alternative is implemented as written.

Table 1

GGNS RPV Shell Weld Information

Variable	Variable Value by Weld Seam Identification		
Weld Seam ¹ / Welding Process	AB (Lower Circ. Seam) SAW	AC (Upper Circ. Seam) SAW	AC (Upper Circ. Seam) SMAW
Fluence ² @ 13.1 EFPY (end of relief request period)	$0.102 \times 10^{19} \text{ n/cm}^2$	$0.102 \times 10^{19} \text{ n/cm}^2$	$0.102 \times 10^{19} \text{ n/cm}^2$
Initial RT _{NDT}	- 40.0 ° F	- 20.0 ° F	- 60.0 ° F
Weld Chemistry Factor	41	54	27
Weld Copper Content	0.03 wt%	0.04 wt%	0.02 wt%
Weld Nickel Content	0.81 wt%	0.95 wt%	0.91 wt%
Increase in Reference Temperature due to Irradiation (ΔRT_{NDT})	17.28 ° F	22.76 ° F	11.38 ° F
Margin Term	17.28 ° F	22.76 ° F	11.38 ° F
Mean Adjusted Reference Temperature. (Mean ART)	- 22.72 ° F	2.76 ° F	- 48.62 ° F
Upper Bound Adjusted Reference Temperature (Upper Bound ART)	- 5.44 ° F	25.52 ° F	-37.24 ° F

NOTES:-

1) GGNS RPV beltline does not contain circumferential welds. Figure 5.3-9 of the GGNS UFSAR shows that weld seam AB is approximately 5 inches below the core and weld seam AC is approximately 22 inches above the core.

2) The value is the peak fluence in the beltline region that was linearly interpolated to 13.1 EFPY. The use of peak fluence from the beltline region to compute the shift due to irradiation of the circumferential welds (that are not actually in the beltline region) provides a conservative upper bound ART_{NDT}.

**Relief Request ISI2-08
System Pressure Test Corrective Actions**

I. Code Requirement

In a letter to Entergy, the NRC authorized the use of the 1992 Edition and portions of the 1993 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI for the updated inservice inspection program at Entergy's nuclear sites¹.

ASME Section XI, 1992 Edition, 1993 Addenda, Subarticle IWA-5250(a)(2) states that if leakage occurs at a bolted connection during a system pressure test, one bolt shall be removed, VT-3 examined, and evaluated for degradation in accordance with IWA-3100.

II. Requested Authorization

Entergy requests authorization to perform an alternative to the code-required removal and VT-3 visual examination of bolting if leakage occurs during a system pressure test of Class 1, 2, and 3 systems.

III. Basis for Requesting Authorization

Entergy believes the actions specified in IWA-5250(a)(2) are not always the most prudent course of action to determine the condition of the bolting and/or the root cause of the leak.

A situation which may be encountered involves a leaking joint following complete replacement of bolting materials (studs, bolts, nuts, washers, etc.). When the associated system process piping is pressurized during plant start-up, the joint leaks. The root cause of this leakage may be due to thermal expansion of the piping and bolting materials and subsequent process fluid seepage at the joint gasket. In such cases, re-torquing the joint bolting usually stops the leak. Removing any of the joint bolting to evaluate for corrosion

¹Letter dated December 12, 1996 from Mr. William D. Beckner, Director - Project Directorate IV-1, Office of Nuclear Reactor Regulation, NRC to Mr. Jerrold G. Dewease, Vice President - Operations Support, Entergy Operations, Inc., "Evaluation of Entergy Operations, Inc. Request for Authorization to Update Inservice Inspection Programs to the 1992 and Portions of the 1993 ASME Boiler and Pressure Vessel Code, Section XI for Arkansas Nuclear One, Units 1 and 2, Grand Gulf Nuclear Station, River

would be unwarranted in this situation if the bolting material is new. ASME Section XI Interpretation XI-1-92-01 recognizes this situation as one in which the requirements of IWA-5250(a)(2) do not apply.

Additionally, IWA-5250(a)(2) does not address other factors which may indicate the condition of mechanical joint bolting. Entergy considers this requirement to be unnecessarily prescriptive and restrictive.

Other factors which should be considered when evaluating bolting condition at a leaking mechanical joint include, but are not limited to:

- joint bolting materials
- service age of joint bolting materials
- location of the leakage
- history of leakage at the joint
- evidence of corrosion with the joint assembled
- corrosiveness of process fluid
- plant/industry studies of similar bolting materials in a similar environment

IV. Proposed Alternative Examination

In accordance with 10 CFR 50.55a(a)(3)(i), Entergy proposes the following alternative to the requirements of IWA-5250(a)(2).

When leakage is identified at bolted connections by visual VT-2 examination during system pressure testing, an evaluation will be performed. The evaluation will determine the susceptibility of the bolting to corrosion, assess the potential for failure, and identify appropriate corrective actions. The following factors will be considered, as necessary, when evaluating the leakage:

- 1) Bolting materials
- 2) Corrosiveness of the process fluid
- 3) Leakage location
- 4) Leakage history at connection
- 5) Visual evidence of corrosion at connection (connection assembled)

Bend Station, and Waterford Steam Electric Station, Unit 3 (TAC Nos. M94472, M94471, M94454, M94473, and M94488)"

- 6) Industry studies and history of similar bolting in similar environment
- 7) Condition and leakage history of adjacent components

Furthermore if the initial evaluation indicates the need for a more in-depth evaluation, the actions specified in IWA-5250(a)(2) shall be performed.

Entergy believes this proposed alternative provides an equivalent level of quality and safety when evaluating leakage and bolting material condition at Class 1, 2, and 3 bolted connections.

V. Conclusion

10CFR50.55a(a)(3) states:

“Proposed alternatives to the requirements of (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that:

- (i) The proposed alternatives would provide an acceptable level of quality and safety, or
- (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.”

Entergy believes that the proposed alternative, to use a systematic approach with an engineering evaluation, provides an acceptable level of quality and safety. Therefore, we request the proposed alternative be authorized pursuant to 10CFR50.55a(a)(3)(i).

VI. NRC Conditions

The Staff's SE indicates that all seven (7) of the attributes contained in Section IV will be considered for each case of leakage and not “as necessary” as stipulated in the relief request.

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1.0 Pressure Testing ASME Class 1 Components

- 1.1 Code Class/Category: Class 1, Exam Category B-P, Item No. B15.10, B15.50, B15.60, and B15.70 pressure retaining components.
- 1.2 Exam required: Visual, VT-2
- 1.3 Class 1 pressure retaining components must undergo a System Leakage Test prior to plant startup following each refueling outage. The pressure retaining boundary during this test shall correspond with IWB-5222(a).
- 1.4 Class 1 pressure retaining components must undergo a System Leakage Test at or near the end of each interval. The pressure retaining boundary during this test shall correspond with IWB-5222(b).
- 1.5 The ISI Boundary Diagrams (P-Drawings) listed below and the ISI Line List contained in Appendix A define the Class 1 system boundaries.
- 1.6 Pressure tests shall be performed in accordance with GGNS-M-489.4 and visual examinations (VT-2) shall be in accordance with GGNS-M-489.2.

2.0 Pressure Testing ASME Class 2 Components

- 2.1 Code Class/Category: Class 2, Exam Category C-H, Item No. C7.10, C7.30, C7.50, and C7.70 pressure retaining components
- 2.2 Exam required: Visual, VT-2
- 2.3 Class 2 pressure retaining components must undergo a System Leakage Test during each inspection period.
- 2.4 The ISI Boundary Diagrams (P-Drawings) listed below and the ISI Line List contained in Appendix A define the Class 2 system boundaries.
- 2.5 Pressure tests shall be performed in accordance with GGNS-M-489.4 and visual examinations (VT-2) shall be in accordance with GGNS-M-489.2.

3.0 Pressure Testing ASME Class 3 Components

- 3.1 Code class/category: Class 3 Exam Category D-B, Item No. D2.10, D2.20, D2.30, D2.40, D2.50, D2.60, D2.70, and D2.80 Pressure Retaining Components
- 3.2 Exam required: Visual, VT-2

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- 3.3 All Class 3 pressure retaining components must meet the following requirements:
- 3.3.1 Class 3 pressure retaining components must undergo a System Leakage Test during each inspection period.
 - 3.3.2 Class 3 pressure retaining components must undergo a system hydrostatic test at or near the end of the ten year inspection interval or during the same inspection period of each ten year inspection interval.
 - 3.3.3 As an alternative to the hydrostatic test required by 3.3.2, a system leakage test may be performed in accordance with Code Case N-498-1.
- 3.4 The ISI Boundary Diagrams (P-Drawings) listed below and the ISI Line List contained in Appendix A define the Class 3 system boundaries.
- 3.5 Pressure tests shall be performed in accordance with GGNS-M-489.4 and visual examinations (VT-2) shall be in accordance with GGNS-M-489.2.

4.0 ISI Boundary Diagram (P Drawing) Index

<u>ISI BOUNDARY DIAGRAM</u>	<u>SYSTEM NAME</u>
P-0030	N/A - Drawing Index Sheet
P-0033B	P21 - Makeup Water Treatment System
P-0034B	P66 - Domestic Water Treatment
P-0035B	P64 - Fire Protection System
P-0035E	P64 - Fire Protection System
P-0049	Z51 - Control Room HVAC System
P-1061A	P41 - Standby Service Water System
P-1061B	P41 - Standby Service Water System
P-1061C	P41 - Standby Service Water System
P-1061D	P41 - Standby Service Water System
	E12 - Residual Heat Removal

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P-1063A	P42 - Component Cooling Water P41 - Standby Service Water G41 - Fuel Pool Cooling and Cleanup
P-1063B	P42 - Component Cooling Water
P-1065	P11 - Condensate & Refueling Water Storage & Transfer System
P-1067A	P53 - Instrument Air System
P-1067E	P53 - Instrument Air System
P-1068A	P52 - Service Air System
P-1070A	P75 - Standby Diesel Generator
P-1070B	P75 - Standby Diesel Generator
P-1070C	P75 - Standby Diesel Generator
P-1070D	P75 - Standby Diesel Generator
P-1072A	P44 - Plant Service Water P47 - Radial Well System
P-1072B	P44 - Plant Service Water P41 - Plant Service Water P72 - Drywell Chilled Water
P-1072H	P44 - Plant Service Water
P-1077A	B21 - Nuclear Boiler System
P-1077B	B21 - Nuclear Boiler System E31 - Leak Detection System B33 - Reactor Recirculation System
P-1077C	B21 - Nuclear Boiler System
P-1077D	B21 - Nuclear Boiler System
P-1078A	B13 - Reactor Pressure Vessel (See P-1077A) B33 - Reactor Recirculation System
P-1078B	B33 - Reactor Recirculation System B21 - Nuclear Boiler System
P-1078E	B33 - Reactor Recirculation System

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P-1079	G33 - Reactor Water Clean-Up System B21 - Nuclear Boiler System B33 - Reactor Recirculation System E31 - Leak Detection System E12 - Residual Heat Removal
P-1080B	G36 - Filter/Demin. System (RWCU)
P-1081A	C11 - CRD Hydraulic System
P-1081B	N19 - Condensate System C11 - CRD Hydraulic System
P-1082	C41 - Standby Liquid Control System
P-1083A	E51 - Reactor Core Isolation Cooling System
P-1083A	P11 - Condensate and Refueling Water Storage & Transfer System
P-1083B	E51 - Reactor Core Isolation Cooling System
P-1085A	E12 - Residual Heat Removal B21 - Nuclear Boiler System E51 - Reactor Core Isolation Cooling System G41 - Fuel Pool Cooling and Clean-Up
P-1085B	E12 - Residual Heat Removal
P-1085C	E12 - Residual Heat Removal
P-1085D	E12 - Residual Heat Removal
P-1086	E22 - High Pressure Core Spray
P-1087	E21 - Low Pressure Core Spray
P-1088C	G41 - Fuel Pool Cooling and Clean-Up System E12 - Residual Heat Removal
P-1088E	G41 - Fuel Pool Cooling and Clean-Up System
P-1088D*	G41 - Fuel Pool Cooling and Clean-Up System E31 - Leak Detection System
P-1089	G17 - Liquid Radwaste
P-1090A	E31 - Leak Detection System E12 - Residual Heat Removal E22 - High Pressure Core Spray

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	B21 - Nuclear Boiler System
	E21 - Low Pressure Core Spray Clean-Up
P-1090B*	E31 - Leak Detection System
P-1091	E61 - Combustible Gas Control System
P-1093A	P81 - HPCS Diesel Generator System
P-1093B	P81 - HPCS Diesel Generator System
P-1093C	P81 - HPCS Diesel Generator System
P-1094A	P45 - Floor & Equipment Drains System
P-1094B	P45 - Floor & Equipment Drains System
P-1094C	P45 - Floor & Equipment Drain System
P-1094E	P45 - Floor & Equipment Drains System
P-1096	E30 - Suppression Pool Make-Up System
	E12 - Residual Heat Removal
P-1097	E32 - Main Steam Isolation Valve Leakage Control System
	B21 - Nuclear Boiler System
P-1099	P60 - Suppression Pool Clean-Up System
	E12 - Residual Heat Removal
	N22 - Precoat Filters and Demineralizers
P-1100A	M41 - Containment Cooling System
P-1100B	M41 - Containment Cooling System
	E61 - Combustible Gas Control
P-1101	M51 - Drywell Cooling System
	M41 - Containment Cooling System
P-1102A	T48 - Standby Gas Treatment System
P-1102B	T48 - Standby Gas Treatment System
P-1103A	1T41 - Auxiliary Bldg. Ventilation System
P-1104A	T42 - Fuel Handling Area Ventilation System
P-1109A	P71 - Plant Chilled Water System
P-1109D	P71 - Plant Chilled Water System
P-1109F	P71 - Plant Chilled Water System

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P-1110A	M71 - Containment and Drywell Inst. & Control System
	D23 - Drywell Monitoring
P-1111A -	M61 - CTMT. Leakage Rate Test System
P-1112	E38 - Feedwater Leakage Control System

*-All ASME Section III Piping on this diagram is exempt from the inspection requirements of ASME Section XI.

SECTION 6 CALIBRATION STANDARDS

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SECTION 6
CALIBRATION STANDARDS

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- 1.0 Calibration standards are used to calibrate ultrasonic examination equipment. These standards were used during preservice examination and the first ISI interval, and are maintained at GGNS.
- 2.0 Calibration Block Thickness - Calibration block thickness is the same nominal thickness as the material being examined. Any calibration block thickness that is within $\pm 25\%$ of the material being examined may be considered to be the same nominal thickness. (As permitted by Code Case N-461).
- 3.0 Additions or changes to the calibration blocks contained in these tables shall be requested with the use of a PCN in accordance with Section 12.

The following indexes identify the calibration blocks available for use at GGNS:

TABLE 6.1			
REACTOR PRESSURE VESSEL CALIBRATION STANDARD INDEX			
ITEM #	CALIBRATION STANDARD NO.	MATERIAL	MATERIAL THICKNESS
1	123-1	533	8.45"
2	124-1	533	7.6"
3	125-1	533	6.79"
4	126-1	533	7.95"
5	127-1	533	5.263"
6	128-1B	533	3.45"
7	141-A	285	2.0"
8	141-B	285	2.0"
9	36-0	508, 336	1.498"
10	38-0	508, SB166	0.88"
11	40-0	508, 336	0.768"
12	42-0	336, SB166	0.88"
13	135K	508, SB166	1.15"
14	121-1	516 GR70	1.5"
15	122-1	508, SB166	0.74"
16	1-A-7	508, SB166	0.515"
17	2B	508, 182	1.267"
18	129-1	508	6.8"

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TABLE 6.2					
ASME CLASS 1, 2, & 3 PIPING CALIBRATION STANDARD INDEX					
ITEM #	STANDARD NO.	CLASS	MATERIAL	WALL THICKNESS	PIPE SIZE/SCHEDULE
1.	1	DBA	106C	0.362"	4"/80
2.	2	DBA	106C	0.564"	4"/160
3.	3	DCA	312/304	0.338"	4"/80
4.	4	DBA	106C	0.462"	6"/80
5.	5R1	DBA	106C	0.594"	10"/100
6.	6	DBA	106C	0.694"	12"/80
7.	7	DBA	106C	0.740"	14"/80
8.	8	DBA	106C	0.926"	18"/80
9.	9	DBA	106C	1.046"	20"/80
10.	10	DCA	358/304	0.875"	20"/N/A
11.	11R1/17R1	DBA	106C	1.350"	24"/100
12.	12	DBB	106B	0.569"	6"/120
13.	13	DBB	106B	0.647"	8"/100
14.	14	DBB	106B	0.748"	10"/100
15.	15	DBB	106B	0.914"	12"/100
16.	16	DBB	106B	0.956"	14"/100
17.	This calibration standard has been deleted by Item # 11, Std. 11R1/17R1 per Code Case N-461.				
18.	18	DBB	155/KC70	1.308"	28"/*1.250"
19.	19	DBA	155CL.1	1.454"	28"/*1.437"
20.	20	DBA	155/KCF70	1.731"	28"/*1.620"
21.	21	DCA	358/304	1.278"	24"/*1.153"
22.	22	DCA	358/304	1.069"	16"/*0.871"
23.	23	DCA	240/304	0.649"	12"/*0.575"
24.	24	DCA	376/304	0.335"	4"/80
25.	25	DCA	40/304	1.171"	24"/*1.125"
26.	26	DCA	58/304	1.037"	24"/*0.877"
27.	27	---	106B	1.340"	28"/*1.245"
28.	28	---	106C	0.310"	3"/80
29.	29	---	106C	1.632"	28"/*1.102"
30.	30	DBB	106B	0.452"	4"/120
31.	31	---	106C	0.430"	3"/160
32.	32	DBB	106B	1.041"	16"/100
33.	33	DBB	106B	0.746"	10"/100
34.	34	EBB	106B	0.423"	6"/100
35.	35	GBB	106B	0.273"	6"/40
36.	36	GBB	106B	0.400"	12"/40
37.	37	GBB	106C	0.377"	14"/40
38.	38	GBB	106C	0.378"	16"/30
39.	39	GBB	106C	0.455"	18"/30
40.	40	GBB	106C	0.514"	20"/30
41.	41	GBB	106C	0.550"	24"/30
42.	42	CL.I	358/304	1.310"	24"/CRC
43.	42-1	CL.I	358/304	1.4"	24"/CRC
44.	43	CL.I	358/304	0.645"	12"/CRC

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TABLE 6.2					
ASME CLASS 1, 2, & 3 PIPING CALIBRATION STANDARD INDEX					
ITEM #	STANDARD NO.	CLASS	MATERIAL	WALL THICKNESS	PIPE SIZE/SCHEDULE
45.	44	---	312/304	0.438"	4"/120
46.	45	---	106B	0.340"	2"/160
47.	46	---	106B	0.521"	8"/80
48.	47	---	106B	1.142"	10"/160
49.	48	---	312/304	0.527"	4"/160
50.	49	---	312/304	0.218"	2"/80
51.	134	---	358/304	1.037"	20"/80
52.	136	Class II	516/GR70	2.000"	30"
53.	148	Class I	403/304	1.080"*	24"-X-CAP
54.	149	Class I	304L	0.513"	4"-CRC

*Minimum Wall Thickness

TABLE 6.3				
BOLTING CALIBRATION STANDARD INDEX				
ITEM #	CALIBRATION STANDARD	QUANTITY	MATERIAL	AVG. THICKNESS
1	BT-001	4	540/B24	5.900"
2	BT-002	4	193/B7	2.250"
3	BT-003	4	540/B23	2.250"
4	BT-004	4	540/B23	3.250"
5	BT-001A	1	540/B24	6.00"

TABLE 6.4					
CLASS 2 EXCHANGER CALIBRATION STANDARD INDEX					
ITEM #	STANDARD	CLASS	MATERIAL	THICKNESS	SCHEDULE
1	145-1	2	516-70	1.026"	N/A
2	150	2	105	4.00"	18"-40"

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1.0 Class 1 Pumps Subject to VT-3 Examination of Internal Surfaces

Class 1 pumps subject to examination of internal surfaces are identified in Table 7.1.

TABLE 7.1					
Category B-L-2, Item No. B12.20: Pump Casing					
Group I					
Item	Pump No.	ISI Dwg.	NDE Method	Line No.	Schedule Period
1.	1B33C001A	RR-11-02	VT-3	RRA-1	1,2,3
2.	1B33C001B	RR-11-09	VT-3	RRA-1	1,2,3

Notes:

1. Examination of only one pump from the group of pumps is required a maximum of once during the inspection interval.
2. Examination is required only when the pump is disassembled for maintenance or repair. Examination of the internal pressure boundary is required to the extent practicable and does not include internal components of the pump. Examination is required only once during the inspection interval.

2.0 Class I Valves Subject to VT-3 Examination of Internal Surfaces

Table 7.2 groups all Class 1 valves into groups that are of the same size, manufacturing method and that are performing similar functions in the system, such as containment isolation and system overpressure protection. Valves listed as UNIQUE do not fall under any group.

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TABLE 7.2						
CATEGORY B-M-2, ITEM NO. B12.50						
Examination Method Visual, VT-3						
Item	Valve No.	Description	Function	ISI Dwg.	Line No.	Period
GROUP #1						
1.	B21F010A	24" PISTON CK.	CTMT ISO.	FW-11-01	DBA-13	1,2,3
2.	B21F010B	24" PISTON CK.	CTMT ISO.	FW-11-07	DBA-13	1,2,3
GROUP #2						
1.	B21F011A	24" GATE	RPV ISO.	FW-11-01	DBA-13	1,2,3
2.	B21F011B	24" GATE	RPV ISO.	FW-11-07	DBA-13	1,2,3
GROUP #3						
1.	E12F039A	14" GATE	RPV ISO.	RH-11-03	DBA-29	1,2,3
2.	E12F039B	14" GATE	RPV ISO.	RH-11-04	DBA-29	1,2,3
3.	E21F007	14" GATE	RPV ISO.	LP-11-01	DBA-1	1,2,3
4.	E22F036	14" GATE	RPV ISO.	HP-11-01	DBA-5	1,2,3
GROUP #4						
1.	B21F032A	24" SWING CK.	CTMT ISO.	FW-8-02	DBA-13	1,2,3
2.	B21F032B	24" SWING CK.	CTMT ISO.	FW-8-04	DBA-13	1,2,3
GROUP #5						
1.	E12F041A	14" SWING CK.	CTMT ISO.	RH-11-03	DBA-29	1,2,3
2.	E12F041B	14" SWING CK.	CTMT ISO.	RH-11-04	DBA-29	1,2,3
3.	E21F006	14" SWING CK.	CTMT ISO.	LP-11-02	DBA-1	1,2,3
4.	E22F005	14" SWING CK.	CTMT ISO.	HP-11-01	DBA-5	1,2,3
GROUP #6						
1.	B21F022A	28" GLOBE	CTMT ISO.	MS-11-03	MSA-3	1,2,3
2.	B21F022B	28" GLOBE	CTMT ISO.	MS-11-06	MSA-3	1,2,3
3.	B21F022C	28" GLOBE	CTMT ISO.	MS-11-09	MSA-3	1,2,3
4.	B21F022D	28" GLOBE	CTMT ISO.	MS-11-12	MSA-3	1,2,3
5.	B21F028A	28" GLOBE	CTMT ISO.	MS-08-01	MSA-3	1,2,3
6.	B21F028B	28" GLOBE	CTMT ISO.	MS-08-02	MSA-3	1,2,3
7.	B21F028C	28" GLOBE	CTMT ISO.	MS-08-03	MSA-3	1,2,3
8.	B21F028D	28" GLOBE	CTMT ISO.	MS-08-04	MSA-3	1,2,3
GROUP #7						
1.	E12F023	6" GLOBE	CTMT ISO.	RH-08-08	DBA-32	1,2,3
2.	G33F102	6" GLOBE	MAINT ISO	CU-11-02	DBA-9	1,2,3
GROUP #8						
1.	B21F041A	8" RELIEF	MS RELIEF	RV-11-01	N/A	1,2,3
2.	B21F041B	8" RELIEF	MS RELIEF	RV-11-05	N/A	1,2,3
3.	B21F041C	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
4.	B21F041D	8" RELIEF	MS RELIEF	RV-11-16	N/A	1,2,3
5.	B21F041E	8" RELIEF	MS RELIEF	RV-11-01	N/A	1,2,3

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TABLE 7.2						
CATEGORY B-M-2, ITEM NO. B12.50						
Examination Method Visual, VT-3						
Item	Valve No.	Description	Function	ISI Dwg.	Line No.	Period
6.	B21F041F	8" RELIEF	MS RELIEF	RV-11-05	N/A	1,2,3
7.	B21F041G	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
8.	B21F041K	8" RELIEF	MS RELIEF	RV-11-05	N/A	1,2,3
9.	B21F047A	8" RELIEF	MS RELIEF	RV-11-01	N/A	1,2,3
10.	B21F047C	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
11.	B21F047D	8" RELIEF	MS RELIEF	RV-11-16	N/A	1,2,3
12.	B21F047G	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
13.	B21F047H	8" RELIEF	MS RELIEF	RV-11-16	N/A	1,2,3
14.	B21F047L	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
15.	B21F051A	8" RELIEF	MS RELIEF	RV-11-1	N/A	1,2,3
16.	B21F051B	8" RELIEF	MS RELIEF	RV-11-5	N/A	1,2,3
17.	B21F051C	8" RELIEF	MS RELIEF	RV-11-11	N/A	1,2,3
18.	B21F051D	8" RELIEF	MS RELIEF	RV-11-16	N/A	1,2,3
19.	B21F051F	8" RELIEF	MS RELIEF	RV-11-05	N/A	1,2,3
20.	B21F051K	8" RELIEF	MS RELIEF	RV-11-05	N/A	1,2,3
GROUP #9						
1.	B33F023A	24" GATE	RECIRC ISO.	RR-11-01	RRA-1	1,2,3
2.	B33F023B	24" GATE	RECIRC ISO.	RR-11-08	RRA-1	1,2,3
3.	B33F067A	24" GATE	RECIRC ISO.	RR-11-03	RRA-1	1,2,3
4.	B33F067B	24" GATE	RECIRC ISO.	RR-11-10	RRA-1	1,2,3
GROUP #10						
1.	B33F060A	24" BALL	Flow Control	RR-11-02	RRA-1	1,2,3
2.	B33F060B	24" BALL	Flow Control	RR-11-09	RRA-1	1,2,3
GROUP #11						
1.	E12F008A	20" GATE	CTMT ISO.	RH-11-01	DBA-64	1,2,3
2.	E12F009	20" GATE	CTMT ISO.	RH-11-01	DBA-64	1,2,3
GROUP #12						
1.	E12F042A	14" GATE	CTMT ISO.	RH-11-09	DBA-29	1,2,3
2.	E12F042B	14" GATE	CTMT ISO.	RH-11-11	DBA-28	1,2,3
3.	E21F005	14" GATE	CTMT ISO.	LP-11-04	DBA-1	1,2,3
GROUP #13						
1.	E22F004	12" GATE	CTMT ISO.	HP-08-01	DBA-5	1,2,3
2.	E12F042C	12" GATE	CTMT ISO.	RH-11-08	DBA-38	1,2,3
GROUP #14						
1.	E51F063	10" GATE	CTMT ISO.	RI-11-02	DBA-24	1,2,3
2.	E51F064	10" GATE	CTMT ISO.	RI-08-01	DBA-24	1,2,3
GROUP #15						
1.	G33F001	6" GATE	CTMT ISO.	CU-11-03	DBA-9	1,2,3

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TABLE 7.2						
CATEGORY B-M-2, ITEM NO. B12.50						
Examination Method Visual, VT-3						
Item	Valve No.	Description	Function	ISI Dwg.	Line No.	Period
2.	G33F004	6" GATE	CTMT ISO.	CU-08-05	DBA-9	1,2,3
3.	G33F252	6" GATE	CTMT ISO.	CU-11-12	DBA-90	1,2,3
4.	G33F250	6" GATE	D. W. ISO.	CU-11-10	DBA-89	1,2,3
5.	G33F251	6" GATE	D. W. ISO.	CU-11-11	DBA-89	1,2,3
6.	E12F394	6" GATE	CTMT ISO.	RI-11-07	DBA-30	1,2,3
7.	E12F395	6" GATE	MAINT. ISO.	RI-11-06	DBA-30	1,2,3
UNIQUE VALVES						
1.	E12F019	6" PISTON CK.	ISO TEST	RH-08-08	DBA-32	1,2,3
1.	E12F010	20" GATE	RPV ISO.	RH-11-01	DBA-64	1,2,3
1.	E12F039C	12" GATE	RPV ISO.	RH-11-05	DBA-38	1,2,3
1.	E12F041C	12" SWING CK.	CTMT ISO.	RH-11-05	DBA-38	1,2,3
1.	E51F066	6" SWING CK.	CTMT ISO.	RI-11-04	DBA-30	1,2,3

Notes:

1. Examination of only one valve from each group is required a maximum of once during the inspection interval.
2. Examination is required only when the valve is disassembled for maintenance or repair. Examination of the internal pressure boundary is required to the extent practicable and does not include internal components of the valve. Examination is required only once during the inspection interval.
3. Examination of each valve in the UNIQUE group of valves is required a maximum of once during the inspection interval.

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1.0 This section provides the population of items within each Examination Category and identifies the quantities selected for examination.

1.1 ASME Section XI Inservice Inspections

The ASME Section XI Inservice Inspection Summary Table 8.1 provides the following information:

1.1.1 Examination Category

This column lists the examination category as identified in ASME Section XI, Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1. Only those Examination Categories applicable to GGNS are identified.

1.1.2 Total Items

This column lists the population of items within each Examination Category

1.1.3 Selected

The column lists the number of items actually examined during the inspection interval and is based upon the Code requirements for the subject Examination Category (e.g., 7.5% of Examination Category C-F-1, items will be examined during the inspection interval), included in Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1.

1.1.4 % of Total Items Selected

This column provides the percentage of the total number of items that are selected for examination.

1.1.5 *Number in First Period.

This column provides the number of items in the examination category that are scheduled to be examined during the first period.

1.1.6 % of Total Selected for First Period

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- This column provides the percentage of the Total Items (1.1.2) scheduled to be examined during the first period. These percentages must meet the requirements of IWX-2412-1.

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1.1.7 Number in Second Period.

This column provides the number of items in the examination category that are scheduled to be examined during the Second Period.

1.1.8 % of Total Selected for Second Period

This column provides the percentage of the Total Items (1.1.2) scheduled to be examined during the Second Period. These percentages must meet the requirements of IWX-2412-1.

1.1.9 Number in Third Period.

This column provides the number of items in the examination category that are scheduled to be examined during the Third Period.

1.1.10 % of Total Selected for Third Period

This column provides the percentage of the Total Items (1.1.2) scheduled to be examined during the Third Period. These percentages must meet the requirements of IWX-2412-1.

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TABLE 1

Exam Category	Code Item No.	Total Items	Total Selected	% of Total Items Selected	Number in First Period	% of Total Selected in First Period	Number in Second Period	% of Total Selected in Second Period	Number in Third Period	% of Total Selected in Third Period
B-A	B01.011	4	4	100%	Later	Later	Later	Later	Later	Later
	B01.012	14	14	100%						
	B01.021	2	2	100%						
	B01.022	10	10	100%						
	B01.030	1	1	100%						
	B01.040	1	1	100%						
B-D	B03.090	35	35	100%						
	B03.100	35	35	100%						
B-F	B05.010	28	28	100%						
B-G-1 ¹	B06.010	3	3	100%						
	B06.020	3	3	100%						
	B06.030	3	3	100%						
	B06.040	3	3	100%						
	B06.050	3	3	100%						
	B06.180	2	2	100%						
	B06.190	2	2	100%						
	B06.200	2	2	100%						
	B06.210	8	8	100%						

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TABLE 1

Exam Category	Code Item No.	Total Items	Total Selected	% of Total Items Selected	Number in First Period	% of Total Selected in First Period	Number in Second Period	% of Total Selected in Second Period	Number in Third Period	% of Total Selected in Third Period
B-G-2 ¹	B06.220	8	8	100%						
	B06.230	8	8	100%						
	B07.010	4	4	100%						
	B07.050	9	9	100%						
	B07.060	5	5	100%						
	B07.070	35	35	100%						
B-H	B07.080	1	1	100%						
	B08.010	1	1	100%						
B-J	B09.011	608	153	25%						
	B09.012	268 ²	46	17%						
	B09.021	201	51	25%						
	B09.031	39	10	26%						
	B09.032	11	3	27%						
	B09.040	48	12	25%						
B-K-1	B10.010	27	3	11%						
	B10.020	20	6	30%						

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TABLE 1

Exam Category	Code Item No.	Total Items	Total Selected	% of Total Items Selected	Number in First Period	% of Total Selected in First Period	Number in Second Period	% of Total Selected in Second Period	Number in Third Period	% of Total Selected in Third Period
B-L-2	B12.020	2	2	100%						
B-M-2	B12.050	71	71	100%						
B-N-1	B13.010	1	1	100%						
B-N-2	B13.020	33	33	100%						
	B13.030	53	53	100%						
	B13.040	1	1	100%						
B-O	B14.010	1	1	100%						
C-A	C01.020	2	1	50%						
	C01.030	2	1	50%						
C-B	C02.021	4	2	50%						
	C02.022	4	2	50%						
C-C	C03.020	22	2	9%						
	C03.030	5	1	20%						

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TABLE 1

Exam Category	Code Item No.	Total Items	Total Selected	% of Total Items Selected	Number in First Period	% of Total Selected in First Period	Number in Second Period	% of Total Selected in Second Period	Number in Third Period	% of Total Selected in Third Period
C-D	C04.030	1	1	100%						
C-F-2	C05.051	925	70	8%						
	C05.081	18	2	11%						
C-G	C06.010	75	45	60%						
	C06.020	1	1	100%						
D-A	D01.010	30	3	10%						
	D01.020	137	15	11%						
F-A	F01.010	185	50	27%						
	F01.020	193	29	15%						
	F01.030	341	34	10%						
	F01.040	87	34	39%						

SECTION 8
EXAMINATION SELECTION
SUMMARY

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¹ Because B-G-1 and B-G-2 bolting contained in pumps and valves is only required to be inspected when the component is disassembled and inspected to the requirements of B-L-2 or B-M-2, percentages of completion for each period may not meet the requirements of Table IWB-2412-1. B-G-1 and B-G-2 bolting contained in flanged connections of piping which contains Examination Category B-J welds shall be inspected and the minimum/maximum percentages specified in Table IWB-2412-1 met.

² There are only 134 longitudinal welds in Code Item No. B09.012, but each end of each longitudinal weld has been assigned a unique weld number to allow association with each circumferential weld. This method of numbering causes the database to count the longitudinal welds twice (268). A total of 46 (34%) of the 134 longitudinal welds are scheduled to be examined.

SECTION 9
SUCCESSIVE EXAMINATIONS

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SUCCESSIVE EXAMINATIONS

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SECTION 9
SUCCESSIVE EXAMINATIONS

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- 1.0 This section identifies successive examinations that are required for compliance with ASME Section XI, IWB, IWC, IWD, and IWF-2420.
- 2.0 Where examinations identify flaws that require successive examinations, the successive examinations are scheduled in the applicable Appendix containing the item. The successive exams are also summarized in this section in the following table.

SUCCESSIVE CODE EXAMINATIONS				
Item	I. D. Number	ISI Drawing	Exam Req'd	Schedule
1 ¹	CRD Cap Screws	RPV-11-05	Eddy Current	Periods 1, 2, & 3

Notes:

1. CRD cap screws of the original design have been evaluated by MNCR 92/0173 for flaws in the head to shank radius. Analytical evaluations determined that the cap screws were acceptable for end of service life and a conservative flaw depth limit of 0.150" was established as a threshold for acceptance. Until the original design cap screws are replaced with the new design, a sample size (176) equal to the number of cap screws inspected during RF05 shall be removed during the 1st, 2nd, and 3rd period of the 2nd Interval for examination. Eddy current techniques developed and qualified by EPRI shall be used for determining flaw depth. If cap screws are detected with flaws that exceed .150 inches in depth, a condition report shall be initiated prior to returning to operation.

SECTION 10
RISK-INFORMED SELECTIONS

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SECTION 10
RISK-INFORMED SELECTIONS
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SECTION 11
AUGMENTED EXAMINATIONS

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SECTION 11
AUGMENTED EXAMINATIONS

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1.0 SCOPE

- 1.1 This section of the Inservice Inspection Program describes inspection requirements that augment the ASME Section XI Code required examinations. This section describes the requirements for examination, component identification, type of examinations, drawings, procedures and the schedule of examinations.
- 1.2 When examinations are performed solely for the purpose of fulfilling an augmented examination requirement they are identified as Exam Category "X-AUG".
- 1.3 Changes to the augmented requirements contained in this section are subject to evaluation in accordance with 10 CFR 50.59 unless they are a result of NRC requirements like those contained in paragraph 2.8. These augmented requirements are imposed by the NRC through 10 CFR 50.55a and therefore required by law. Changes to these requirements require prior NRC approval and are not subject to change with evaluations described in 10 CFR 50.59.
- 1.4 The ultrasonic examination techniques and requirements contained within this section are to be implemented when performing the applicable augmented examination until the requirements of ASME Section XI, Appendix VIII become effective as described in Section 2. At that time, the requirements of ASME Section XI, Appendix VIII as modified by 10 CFR 50.55a shall be used.

2.0 AUGMENTED EXAMINATIONS

This section addresses the following augmented examinations:

- GE's Rapid Information Communication Service Information Letter (RICSIL) #055, Rev. 1 - RPV Head Stud Cracking.
- GE's Service Information Letter (SIL) #415 Rev. 1 - Inspection of Recirculation Pump Suction Splitters.
- GE's Service Information Letter (SIL) #455 Rev. 1, Supp. 1, Cat. 1 - ISI of Additional Alloy 182 Weldments
- GE's Service Information Letter (SIL) #483 - CRD cap screw crack indications.
- SRP 3.6.2, Determination of Break Location and Dynamic Effects Associated with Postulated Rupture of Piping (No-Break Zone exams).
- NUREG-0619, BWR Feedwater Nozzle and Control Rod Drive Return Nozzle Cracking
- Generic Letter 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping
- 10 CFR 50.55a(g)(6)(ii)(A)(2), Augmented Examination of Reactor Vessel

2.1 RICSIL No. 055, Rev. 1 - RPV Head Stud Cracking

This RICSIL reports cracking found in two RPV head studs during a routine inservice inspection at a BWR plant. The following recommendations apply when performing the ASME Code examination of the RPV head studs.

2.1.1 The cracks were detected with a Code UT examination in which a 0 degree L wave introduced from the upper end of the stud traverses the length of the stud. The calibration reflector was a 3/8 inch flat bottom hole. The reflections from the cracks had amplitudes of 10% to 25% of the calibration reflector.

2.1.2 A metallurgical evaluation of a stud showed transgranular cracking and branching which is typical of stress corrosion cracking (SCC). The evaluation reported a tensile strength value of 180 ksi and a hardness of R_c38 for the material in the outside threaded area of one cracked stud. Reg Guide 1.65 requires a maximum tensile strength of 170 ksi on RPV studs, because stud material with tensile strength greater than 170 ksi had shown increased susceptibility to SCC. Since GGNS is in compliance with Reg Guide 1.65 requirements for tensile strength, studs at GGNS are relatively immune to SCC.

2.1.3 Stud cracking is not expected at GGNS. However, to provide added assurance that stud cracking, if present, is detected, recorded and evaluated, the following GE recommendations apply when performing a Code examination of RPV studs with a straight beam (0 degree L wave) UT from the end of the stud:

2.1.3.1 Use a 3/4 inch to 1 inch diameter transducer with a frequency not less than 2.25 MHZ and not greater than 5.0 MHZ. Increase the sensitivity of the examination to obtain a background noise level of about 5% of full screen height. Normally, this will require about 20 dB above reference level assuming calibration on a 3/8 inch diameter flat bottomed hole.

2.1.3.2 Record and evaluate any indications in accordance with the Code. In addition, any indication that is judged to be suspect, regardless of amplitude, should be recorded and evaluated. An ultrasonic examination from the bore should be considered for sizing the crack indications if required.

2.1.3.3 Studs with suspect indications should be removed where possible and examined by magnetic particle testing for confirmation of the UT results.

2.1.3.4 As an alternate, the complete UT examination can be performed from the center-drilled hole of the studs in accordance with ASME Code Case N-307-1.

2.2 SIL #415 - Examination of Recirculation Pump Suction Splitters

This SIL reports cracking in Byron Jackson reactor recirculation pump suction splitters at a BWR 4. The splitters, two 8" x 8" x 1" Type 304 stainless steel plates, contained cracks in the area of the heat affected zone of the welds.

2.2.1 Perform a VT-3 examination of the suction splitter to recirculation pump body welds. The exam is to be performed when the pump is disassembled for maintenance and/or when the VT-3 exam of the recirculation pump internal surface is performed.

2.2.2 Ultrasonic examination requirements will be specified by Central Engineering Programs when visual examination indicates the presence of cracking.

2.2.3 Apply ASME XI-IWB-3519 acceptance standards to any indications found.

2.2.4 Results of these inspections should be reported to GE for information.

2.3 SIL #455 Rev. 1, Supp. 1, Cat 1 - ISI of Additional Alloy 182 Weldments

This SIL documents extensive axial cracking that has been observed in inconel alloy 182 safe end to nozzle weldments and specifies precautions during examination to assure that the cracks, if present, are located. When a weld examination is performed to meet ASME Code requirements, and this SIL is referenced, the following examination techniques apply. The weld exam is identified by its Code Category:

2.3.1 Discussion

2.3.1.1 Using ultrasonic (UT) examination, the cracking has been observed in recirculation inlet nozzle to safe end welds and in core spray nozzle to safe end welds.

2.3.1.2 The axial cracks appear to have initiated in the alloy 182 weld butter in the nozzle bore as intergranular stress corrosion cracking (IGSCC) and propagated into the low alloy steel (LAS) of the nozzle where the cracking becomes transgranular. One circumferential crack was reported which was located completely in the alloy 182 material.

2.3.1.3 All of the axial cracks extended into the LAS of the nozzle.

2.3.1.4 Cracking has been identified in weldments after application of mechanical stress improvement (MSIP) which, prior to MSIP, were examined and found to be free of cracks. Propagation of cracks has been observed in weldments that were subjected to weld overlay repairs. GE suspects that processes such as MSIP, induction heating stress improvement (IHSI) or chemical decontamination enhance the detectability of the cracks with UT. Also, previously existing stresses and strains combined with the

welding and stress improvement process stresses may contribute to the crack propagation.

2.3.1.5 The transgranular cracking is harder to detect using UT due to the absence of branching. The cracks cannot be easily identified by skewing or angulating the transducer.

2.3.1.6 It may be difficult to show that the indication originates on the inside surface because the inconel butter is difficult to penetrate using shear waves. Refracted longitudinal waves do not reflect well from the intersection of the crack face with the inside surface.

2.3.2 Action

2.3.2.1 This SIL applies to inconel alloy 182 safe end to nozzle weldments identified in Appendices B, C, or D that reference this SIL.

2.3.2.2 45-degree and 60-degree refracted longitudinal wave UT should be used for crack detection in the inconel alloy 182 material.

2.3.2.2.1 This should be conducted so that the small signals received from the inside surface (ID roll) are at approximately 10% of full screen height.

2.3.2.2.2 Scanning should be conducted with the sound beams directed both axially and circumferentially.

2.3.2.3 45-degree shear wave UT should be used to examine the LAS after suspect indications are detected using 45-degree and 60-degree refracted longitudinal wave UT.

2.3.2.4 The examination techniques should be qualified and calibrated to the satisfaction of the NDE Level III using a realistic mockup of the weld configuration which contains suitable reflectors in the area of concern.

2.3.2.5 Use of an automatic UT scanning and recording system is recommended. If manual UT is used:

2.3.2.5.1 Special care must be exercised to assure that coupling and coverage is adequate.

2.3.2.5.2 Slow methodical scanning rates and continual observation of UT oscilloscopes are essential.

2.4 GE's Service Information Letter (SIL) #483, R2 - CRD cap screw crack indications.

2.4.1 This SIL reports circumferential cracking and corrosion pitting that was found during visual examination of CRD to CRD housing cap screws.

- 2.4.1.1 The cracking is typically found in the shank-to-head transition region.
- 2.4.1.2 The GE metallurgical evaluation (See R0) revealed that cracks initiated at the bottom of the corrosion pits.
- 2.4.1.3 GE has concluded that the cause of the cracking is stress corrosion.
- 2.4.1.4 The SIL notes the crack indications in CRD cap screws are a common occurrence.
- 2.4.2 Whenever the cap screws are removed for CRD maintenance, an ASME Section XI visual (VT-1) examination of the cap screws is required. Give special attention to the shank-to-head region where cracking is typically found.
- 2.4.3 If the visual examination reveals any questionable cap screws (cap screws that may contain cracking), a surface or volumetric examination is required for further evaluation of the cap screw condition.
- 2.4.4 When a cap screw examination is performed to meet ASME Code requirements, and this SIL is referenced, the SIL examination recommendations apply. The cap screw exam is identified by its Code Category and is counted as a Code examination.
- 2.4.5 In the event that the same CRD(s) are subsequently disassembled during the ten year interval, the SIL examination recommendations apply; the examination is an augmented examination and is not counted as a Code exam.
- 2.5 SRP 3.6.2, Determination of Break Location and Dynamic Effects Associated with Postulated Rupture of Piping (No-Break Zone exams).

In compliance with NRC Standard Review Plan (SRP) 3.6.2, GGNS has identified certain piping as no-break-zone (NBZ) piping. Welds in NBZ piping are no-break-zone welds. The piping is located such that the consequences of a postulated pipe break are unacceptable. The design and installation methods used for this piping minimize the potential for a pipe break. Per GGNS SAR Section 3.6a.1.c.2(g), additional inservice examinations are required to assure the integrity of the piping is maintained.

 - 2.5.1 NBZ welds are identified in the Program Table Examination notes.
 - 2.5.2 All NBZ circumferential and branch welds greater than 4 inch nominal pipe size are 100% volumetrically examined once every ten-year interval.
 - 2.5.3 All NBZ circumferential and branch welds 4 inch nominal pipe size and less are 100% surface examined once every ten-year interval.
 - 2.5.4 All longitudinal NBZ welds greater than 4 inch nominal pipe size are volumetrically examined for at least one pipe diameter length but not

more than 12" of the weld at the intersection with the no-break zone circumferential weld. The exam is required once every ten-year interval.

2.5.5 All longitudinal NBZ welds 4 inch nominal pipe size and less are surface examined for at least one pipe diameter length but not more than 12" of the weld at the intersection with the no-break zone circumferential weld. The exam is required once every ten-year interval.

2.5.6 Examination techniques and acceptance criteria are in accordance with ASME Section XI. The acceptance standards of IWB-3514 are applied. Where the specified examination coverage cannot be obtained, relief requests are prepared and submitted to the NRC for approval as required for ASME Code exams.

2.5.7 NBZ welds are identified by their applicable Code Category and Item No. or "N/A" when they are outside the description of the Examination Category and Item No., and by the "Require" column as described in Paragraph 1.0:

2.5.7.1 When a NBZ weld is selected for examination to meet ASME Code requirements and the weld is also a NBZ weld, the weld examination performed for Code credit meets or exceeds the NBZ requirement and is counted as both a Code and a NBZ examination.

2.5.7.2 When a NBZ weld is not selected for examination to meet Code requirements, the examination is performed to meet the NBZ criteria. These welds are not credited toward completion of Code examinations.

2.6 NUREG-0619, BWR Feedwater Nozzle Cracking

NUREG-0619 was issued by the NRC describing a cracking phenomena of RPV feedwater nozzle inner radii. Examinations performed at GGNS during the first interval were performed in strict compliance with the recommended guidelines of the NUREG. However, as a result of enhanced technology, and more sophisticated techniques for fatigue analysis, examination of the feedwater nozzle blend radius in the second interval is being altered and shall be performed as described below.

2.6.1 During RF09 each feedwater nozzle inside radius and bore shall be ultrasonically examined to these requirements as a baseline. Credit for the baseline examination may be applied to the requirements of ASME Section XI except the total percentage of credit for Examination Category B-D, Item Number B3.100 shall not exceed 34% for the first period.

2.6.2 The examination may be performed from the external surface of the RPV with either manual or automated techniques. The UT technique shall be demonstrated to acceptably detect and size flaws located on the entire inside surface of all 3 examination zones as shown in Figure 11.1. An

acceptable UT technique is one that has the ability to reliably detect radially oriented flaws with a depth equal to 0.250 inches for each of the zones. Depth sizing capabilities shall be demonstrated on a range of flaws in each zone. The depth sizing results may be statistically analyzed to the criteria of ASME Section XI, Appendix VIII, or alternate methods of statistical analysis may be used provided that justification is included.

- 2.6.3 Technique qualification for detection and sizing need not be a blind test provided that the procedures contain definitive criteria. Furthermore, techniques demonstrated for use at one facility may be used at others provided applicability is technically supported through computer modeling for the different geometrical characteristics.
- 2.6.4 When UT techniques are qualified on a mockup without the use of modeling, the specimen thickness should be at least equal to the maximum thickness of the vessel nozzles to be examined, and the ratio of the nozzle thickness to shell thickness should be within $\pm 30\%$ of the ratio for the actual vessel nozzle to be examined. Flaws in mockups for qualification shall be surface connected. Flaws may be notches and need not be cracks. The aspect ratio (depth to length) of the flaws shall be in the range of 0.1 to 0.5.
- 2.6.5 Modeling may be used to qualify the technique. One form of modeling is where the UT beam paths are predicted using ray tracing algorithms with predetermined beam angle parameters. The beam paths are used to determine the incident angles of the beam on the ID surfaces. Modeling should only be used for qualification of UT techniques when acceptable incident beam angles have been previously determined by full scale mockup.
- 2.6.6 Personnel performing detection and sizing shall be qualified in accordance with ASME Section XI, GGNS-M-489.2, and shall demonstrate their technical proficiency with qualified techniques on full scale mockups. Personnel demonstration shall be a blind test.
- 2.6.7 Zones 1 and 2 of each feedwater nozzle shall be examined at least once every eight years from when the baseline has been completed. Examinations may be performed more frequent in order to establish a staggered schedule for all six nozzles. Zone 3 shall be examined at least once every 16 years. The examination of Zone 3 may be performed more frequent to coincide with the examination of Zones 1 and 2, or to establish a staggered frequency for all six nozzles.
- 2.6.8 The examinations frequencies specified in 2.6.7 are based on a GGNS specific fracture mechanics analysis. In this analysis it has been assumed that beginning from RF09, that GGNS will not exceed three (3) startup/shutdown events and/or two (2) SCRAM events within any 18 month operating cycle. If these limits are exceeded, a PCN shall be

SECTION 11
AUGMENTED EXAMINATIONS

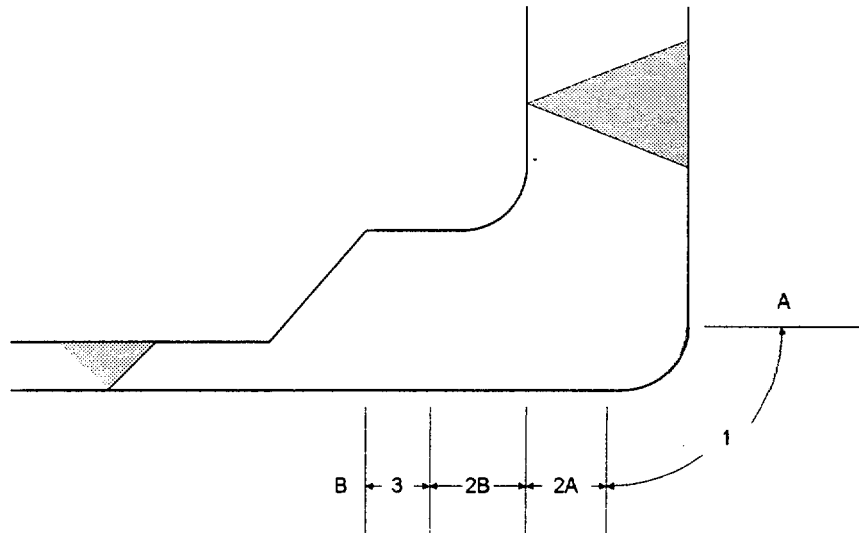
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initiated in accordance with Section 12 and transmitted to Central Engineering Programs to obtain a new inspection frequency.

- 2.6.9 These examination requirements augment those required by ASME Section XI for Examination Category B-D, as such, credit may be taken for these examinations for satisfying the percentage requirements of ASME Section XI, IWB-2412.
- 2.6.10 Because these examinations are performed at a frequency more often than required by ASME Section XI and with augmented requirements, they are identified in the database and Appendixes B, C, and D under Examination Category X-Aug. However, they are included in the total population count for Examination Category B-D.
- 2.6.11 The results of these examinations shall be included in the NIS-1 or OAR-1 report. They shall be identified as both ASME Section XI and NUREG 0619 examinations.



The examination region begins at the inner radius-to-vessel intersection point (A). The examination region ends at the point on the inner diameter corresponding to the point on the outer diameter where the taper on the nozzle thickness starts (B).

Figure 11.1

2.7 Generic Letter (GL) 88-01, NRC Position on IGSCC in BWR Austenitic Stainless Steel Piping

2.7.1 GL 88-01 applies to all BWR piping made of austenitic stainless steel that is four inches or larger in nominal diameter and contains reactor coolant at a temperature above 200°F during power operation regardless of code classification.

2.7.2 This generic letter does not apply to piping made of carbon steel classified as P-1 by the ASME Boiler and Pressure Vessel Code. A total of 361 welds have been identified that are within the seven categories given in Attachment A, Table 11.1, to GL 88-01. These welds have been categorized as shown below.

Category A	303 welds
Category B	24 welds
Category C	34 welds
Category D	0 welds
Category E	0 welds
Category F	0 welds
Category G	0 welds

A summary of the staff position on Inspection schedules is given in Table 11.1. Additional details and definitions are provided below as applicable.

2.7.2.1 Category A Welds

Category A welds are weldments that are within the scope of Generic letter 88-01 but have met the criteria of the staff positions and determined to be fabricated of "resistant materials." In the Category A population are welds containing corrosion resistant cladding (CRC) and welds that have been solution heat treated (SHT). These welds are examined similar to ASME Section XI.

2.7.2.2 Category B Welds

Category B welds are weldments that are fabricated from "nonresistant materials" but have received stress improvement (SI) within 2 years of operation.

2.7.2.3 Category C Welds

Category C welds are weldments that are not made of IGSCC resistant materials and have had an IHSI process performed after more than two years of operation. An ultrasonic (UT) examination is conducted after IHSI to assure the weldments are not cracked.

<p align="center">Table 11.1 Summary Of Inspection Schedules For BWR Piping Weldments</p>			
Description Of Weldments	Notes	IGSCC Inspection Category	Extent & Schedule
Resistant Materials		A	25% every 10 years (at least 12% in 6 years)
Non-resistant Matls SI within 2 yrs of operation	(1)	B	50% every 10 years (at least 25% in 6 years)
Non-resistant Matls SI after 2 yrs of operation	(1)	C	100% every 10 years (at least 50% in 6 years)
Non-resistant Matls NO SI	(1)	D	100% every 2 refueling cycles
Cracked reinforced by weld overlay or mitigated by SI	(1)(2)	E	50% next refueling outage, then 100% every 2 refueling cycles
Cracked Inadequate or no repair	(2)	F	100% every refueling outage
Non-Resistant Not Inspected	(3)	G	All next refueling outage
<p>Notes:</p> <p>(1) All welds in non-resistant material should be inspected after a stress improvement process as part of the process. Schedules shown should be followed after this initial inspection.</p> <p>(2) See recommendations for acceptable weld overlay reinforcements and stress improvement mitigation.</p> <p>(3) Welds that are not UT inspectable should be replaced, "sleeved", or local leak detection applied. RT examination or visual inspection for leakage may also be considered.</p>			

2.7.3 When an IGSCC weld examination is performed to meet ASME Code requirements, the examination includes the procedure, personnel and acceptance criteria requirements of GL 88-01 (see below) and is also counted as the GL 88-01 examination. The weld exam is identified by its Code Category and by "BOTH" in the "Require" column in Appendices B, C, and D.

2.7.4 When an IGSCC weld examination is not performed to meet ASME Code requirements, the examination is performed to meet the GL 88-01 criteria. The weld exam is identified by "AUG" in the "Require" column of Appendices B, C, and D.

- 2.7.5 Procedures, personnel and acceptance criteria used in the performance of IGSCC weld examinations meet the requirements of ASME Section XI as supplemented by the following:
 - 2.7.5.1 Procedures used to perform ultrasonic examination for detection of IGSCC shall include the necessary parameters identified in EPRI module 910-17 entitled "Generic Procedural Elements and Parameter Ranges for Detection and Discrimination of IGSCC" as applicable. EPRI module 911-7 entitled "Generic Procedures for IGSCC Sizing" shall be used as a guideline for parameters for IGSCC sizing procedures.
 - 2.7.5.2 Personnel performing or evaluating the results of ultrasonic examination for detection or sizing of IGSCC shall be certified to Level II or III in accordance with the requirements of ASME Section XI. Additionally, the personnel shall be currently qualified to the appropriate requirements for ultrasonic examination of BWR piping systems for detection and/or sizing of IGSCC in accordance with the "NRC/EPRI/BWROG Coordination Plan" on or after September, 1985 which references the competence requirements set forth in the EPRI NDE Center's training program manuals.
 - 2.7.5.2.1 Ultrasonic testing operator training for IGSCC, Competency area 910, developed by the EPRI NDE Center, is required for personnel involved in detection of IGSCC.
 - 2.7.5.2.2 Ultrasonic testing operator training for planar flaw sizing course, competency area 911, developed by the EPRI NDE Center, is required for personnel involved in flaw sizing.
 - 2.7.5.2.3 Personnel qualification documentation shall include copies of EPRI course transcripts and performance documenting summaries, as applicable.
- 2.7.6 In the event GGNS identifies IGSCC flaws exceeding the acceptance criteria of IWB-3500, the NRC shall be notified as required by Generic Letter 88-01. If continued operation is permissible based on evaluations performed in accordance with IWB-3640 or repairs made in accordance with IWA-4130 or weld overlay repairs, NRC approval will be obtained prior to resumption of operation.
- 2.7.7 Flawed pipe analysis and weld overlay repair design will be performed in accordance with the criteria presented in NUREG 0313, Revision 2 with the following additions and clarifications.

2.7.7.1 For flawed pipe analysis involving weldments with nominal diameters smaller than 12 inches, representative butt weld residual stress distributions given in industry literature will be used.

2.7.7.2 In the determination of crack tip stress intensity, K_I , for the prediction of IGSCC crack growth will be used,

$$K_I = K_{IA} + K_{IR}$$

where

K_{IA} = stress intensity factor due to applied loads including pressure, dead weight, differential thermal expansion, and overlay axial shrinkage.

K_{IR} = stress intensity factor due to residual stress.

2.7.7.3 In the prediction of fatigue crack growth, a fatigue crack correlation representative of actual plant conditions will be used.

2.7.7.4 Predicted IGSCC and fatigue crack growth depths will be combined per the methodology provided in ASME (1992 Edition), Section XI, Appendix C.

2.8 10 CFR 50.55a(g)(6)(ii)(A)(2), Augmented Examination of Reactor Vessel

2.8.1 In 1992, Title 10 of the Code of Federal Regulations (10 CFR) was amended with the addition of 50.55a(g)(6)(ii)(A), "Augmented Examination of Reactor Vessel". Section 50.55a(g)(6)(ii)(A)(2) requires licensees to augment their reactor vessel examinations by implementing once, as part of the inservice inspection interval in effect on September 8, 1992, the examination requirements for reactor vessel shell welds specified in Item B1.10 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel" in Table IWB-2500-1 of subsection IWB of the 1989 Edition of ASME Section XI, subject to the conditions specified in 50.55a(g)(6)(ii)(A)(3) and (4). Application of the augmented requirements to the GGNS RPV has been evaluated and specified by ER 97/0185-00-0.

2.8.2 Compliance with the augmented examination requirements has been achieved on all subject welds, except for weld seam AA. Because of interferences with the RPV skirt, weld AA has not been examined for 90% of the required volume. However, with additional evaluations it has been determined that use of alternate angles will result in coverage that meets the augmented requirements. Weld AA shall be examined for its full circumference with alternate angles to the extent necessary to ensure examination of more than 90% of its required volume. This examination is required to be completed before 12/31/98 (See ER 97/0185-00-0 for details).

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- 2.8.3 Section 4 of this Program Section contains Relief Request I-2-00001 that is approved by the NRC to defer the examination of welds AA, AB, AC, and AD until RF11. This deferral also includes the additional examination required by 2.8.2 above.

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PROGRAM CHANGE NOTICE

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1.0 SCOPE

This section provides Entergy organizations the method for requesting changes to this Program Section. Changes are requested by using the Program Section Change Notice (PCN), Attachment 1 to this section. The PCN does not make Design Changes to the Plant or make changes to design documents. PCNs are processed in accordance with this Program Section and DEAM EP-P-002.

2.0 RESPONSIBILITY

2.1 Entergy Organizations

Submit PCNs to CE Programs for review and approval.

2.2 Central Engineering (CE) Programs

2.2.1 Approves or disapproves submitted change requests.

2.2.2 Incorporates approved PCNs into the Program Section

2.2.3 Maintains the Program Section PCN Log.

3.0 REFERENCES

3.1 DEAM EP-P-002, Control of Entergy Code Programs

3.2 ASME Section XI Code.

4.0 ATTACHMENTS

Attachment 1 - PCN Form

5.0 DEFINITIONS

5.1 PCN - A form originated by any GGNS organization requesting changes to the Program Section. The PCN provides a means of changing the ISI Program without the issuing a complete revision. The PCN form shall be similar to Attachment 1 of this section.

5.2 PCN Log - A record of Program Section PCNs received by CE.

6.0 DETAILS

6.1 A PCN may be initiated by any organization to request a change to the Program Section or the boundary diagrams referenced in Section 5 of this Program Section.

6.2 Any Section/Group may submit a PCN to CE Programs for review.

6.3 The CE Programs group responsible for maintenance of the Program Section has responsibility for approval or disapproval of requests.

6.4 Examples of changes to be documented via PCN:

6.4.1 The addition, deletion, or modification of components (valves, pumps, piping, hangers).

SECTION 12
PROGRAM CHANGE NOTICE

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- 6.4.2 Addition of welds due to repair or replacement.
- 6.4.3 Editorial corrections
- 6.4.4 Software changes
- 6.4.5 Changes to reference drawings or revisions
- 6.4.6 Requests for relief from examinations
- 6.4.7 Material or specification changes.
- 6.4.8 Modification or addition of examination technique.
- 6.5 All PCNs received by CE Programs must be recorded in the PCN log. At minimum, the log contains:
 - 6.5.1 The PCN number;
 - 6.5.2 The Originators initials and organization;
 - 6.5.3 A brief description of the PCN content.
 - 6.5.4 The PCN status (open/closed)
- 6.6 Preparation of PCNs
 - 6.6.1 Upon determining the need for a change to the Program Section, the originator prepares the PCN.
 - 6.6.1.1 The originator completes Part I of the form and identifies requested changes by attaching Program Section pages which are clearly marked (clouding, shading, or other conventional method) to indicate the desired changes.
 - 6.6.2 The responsible organization supervisor or superintendent reviews and approves all requests prior to submittal to CE Programs.
 - 6.6.3 Once the initiator has obtained approval, he contacts CE Programs and a PCN Number is assigned.
 - 6.6.4 The PCN is forwarded to CE Programs.
- 6.7 Central Engineering (CE) Programs
 - 6.7.1 The CE Programs Responsible Engineer (RE) reviews all submitted PCNs.
 - 6.7.2 A PCN log is maintained by CE Programs for all PCNs.
 - 6.7.3 If the RE determines the PCN should be disapproved, he indicates such on the PCN form, Part II, and provides justification for disapproval. After obtaining concurrence/signature from the CE Programs Supervisor, the RE forwards the original disapproved PCN to the originator.
 - 6.7.4 If the RE determines the PCN should be approved, he then assembles a change package including the PCN Form, and affected Program Section.

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pages marked in a manner which allows for page replacement (identifying each page with the PCN number), and submits the package to a Checker for review. PCNs are to receive the same level of review and concurrence as the original Program Section revision. Additionally, for PCNs which satisfy changes originated by the Site organization (with no additional technical changes added by CE), submittal for Site review is not required.

- 6.7.5 PCNs that affect ASME Code Program Sections require ANII concurrence signature.
- 6.7.6 After PCN comment incorporation, rechecking of changes, and concurrence reviews are complete, the RE prepares a transmittal with instructions for incorporation of the PCN into the current Program Section revision and forwards to Document Control for distribution.
- 6.7.7 Revision of the Program Section to incorporate outstanding PCNs is accomplished in accordance with Section 5.6 of DEAM EP-P-002. The number of outstanding PCNs allowed to be issued prior to PCN incorporation by revision is to be determined by the Responsible Supervisor.
- 6.7.8 Revisions to the Program Section are scheduled for completion ninety (90) days, or sooner, prior to the next scheduled refueling outage, as time allows.

6.8 Form Instructions

- 6.8.1.1 Indicate current revision of the affected Program Section to be revised.
- 6.8.1.2 Describe the change which necessitates revision.
- 6.8.1.3 List all reference documents.
- 6.8.1.4 Requests require initiator plus supervisor approval signatures.
- 6.8.1.5 PCNs are submitted to the CE Programs RE responsible for the Program Section.
- 6.8.1.6 PCNs are logged in the Program Section PCN log.
- 6.8.1.7 Following CE Program RE review, check appropriate block: Approval, Disapproval.

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PROGRAM SECTION CHANGE NOTICE

PART I - INITIATION SECTION

PCN NO.: _____

PCN PAGE: _____ OF _____

Program Section No. / Rev.: Program Section GGNS-M-489.1 /

Program Section Title: ASME Section XI, Division 1 - 1992 Edition - Inservice Inspection Program

PROPOSED CHANGE:

(List section, page number, etc.; Attach markup)

REASON FOR CHANGE:

Initiator: _____ Date: _____ Organization: _____

Initiator's Supervisor: _____ Date: _____

PART II - DISPOSITION SECTION

DISPOSITION: Approved ☐

DISPOSITION JUSTIFICATION:

Disapproved ☐

_____ Dispositioner	/ _____ Date	_____ Checker	/ _____ Date
_____ Review	/ _____ Date	_____ ANII Concurrence	/ _____ Date

Concurred: _____ / _____
Responsible Supervisor Date

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REVISION STATUS SHEET

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DBA 1	13	GBB 1	13
DBA 2	13	GBB 2	13
DBA 3	13	GBB 3	13
DBA 4	13	GBB 4	13
DBA 5	13	GBB 5	13
DBB 1	13	GBB 6	13
DBB 2	13	GBB 7	13
DBB 3	13	GBB 8	13
DBB 4	13	GBB 9	13
DBB 5	13	GBB 10	13
DBB 6	13	GBB 11	13
DBB 7	13	GBB 12	13
DBB 8	13	GBB 13	13
DBB 9	13	GBB 14	13
DBB 10	13	GBB 15	13
DBB 11	13	GBB 16	13
DBC 1	13	GBB 17	13
DCA 1	13	GBB 18	13
DCA 2	13	GBB 19	13
DCB 1	13	GBB 20	13
DCB 2	13	GBC 1	13

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EBB 2	13	HBB 1	13
HBB 2	13	HBC 5	13
HBB 3	13	HBC 6	13
HBB 4	13	HBC 7	13
HBB 5	13	HBC 8	13
HBB 6	13	HBC 9	13
HBB 7	13	HBC 10	13
HBB 8	13	HBC 11	13
HBB 9	13	HBC 12	13
HBB 10	13	HBC 13	13
HBB 11	13	HBC 14	13
HBB 12	13	HBC 15	13
HBB 13	13	HBC 16	13
HBB 14	13	HBC 17	13
HBB 15	13	HBC 18	13
HBB 16	13	HBC 19	13
HBB 17	13	HBC 20	13
HBB 18	13	HBC 21	13
HBB 19	13	HBC 22	13
HBB 20	13	HBC 23	13
HBB 21	13	HBC 24	13
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HBC 2	13	HBC 29	13
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HBC 4	13	HBC 31	13
HBC 32	13	SBB 1	13
HBC 33	13	SBC 1	13
HBC 34	13	SBC 2	13
HBC 35	13	HNC 1	13
HBC 36	13	MSA 1	13
HBC 37	13	MSC 1	13
HBC 38	13	RRA 1	13
HBC 39	13		
HBC 40	13		
HBC 41	13		
HCB 1	13		
HCB 2	13		
HCB 3	13		
HCB 4	13		
HCC 1	13		
HCC 2	13		
HCC 3	13		
HCC 4	13		
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ISI LINE LIST

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1.0 Purpose and Scope

- 1.1 The ISI Line List (Appendix A) addresses piping within the scope of the ASME Section XI Inservice Inspection Program. All ASME Class 1, 2 and 3 piping is included.
- 1.2 Use of the Line List is limited to tasks related to the ASME Section XI Inservice Inspection Program. It is not used as a replacement for GGNS-MS-02 or GGNS-MS-03.
- 1.3 Instrument tubing that branches from Class 1, 2 or 3 piping is not identified in the line list. Class 2 or 3 instrument tubing is subject to the same pressure test requirements as the corresponding piping. Instrument tubing is size exempt and is not subject to examination other than pressure testing. Unless otherwise noted, instrument tubing code classifications are as follows:
 - 1.3.1 For Class 1 piping systems, the instrument tubing is Class 2 from the piping root valve up to and including the instrument shutoff valve.
 - 1.3.2 For Class 2 and 3 piping systems, the instrument tubing is the same class as the piping from the piping root valve up to and including the instrument shutoff valve.
 - 1.3.3 Where questions exist regarding instrument tubing code classification, refer to the FSK-I instrument isometric drawings or MPL-JS-01.
- 1.4 Examination requirements for non-pressure retaining components (such as supports) are not addressed in the line list.

2.0 Document Details

- 2.1 Two systems contain GE supplied piping which was not given a line number in MS-02: Reactor Recirculation (B33) and Main Steam (B21). Piping in the B33 system is assigned numbers using line size + RRA + service number. Piping in the B21 system is assigned numbers using line size + MSA or MSC + service number. The "A" and "C" indicate that the piping is ASME Class "1" and "3" respectively. The service number was assigned sequentially for each system.
- 2.2 Line numbers are not unique and may have been used for more than one application (i.e. same number describing portions of piping of different sizes, different systems, different operating conditions, etc.). Where necessary, multiple line numbers entries are used in the Line List to identify each section of unique piping.

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- 2.3 Several P drawings include spool pieces which have not been assigned line classes. These spool pieces have been included in the line list in sections SBB (class 2) and SBC (class 3). The line class designation is as follows:

2.3.1 SBB (S) - spool piece, (B) - carbon steel, (B) - class 2

2.3.2 SBC (S) - spool piece, (B) - carbon steel, (C) - class 3

3.0 Line List Table Format

- 3.1 LINE NO. - Line sequence number. The sequence number has been repeated in the ISI Line List when necessary to describe uniquely different piping segments.
- 3.2 SERVICE/CRITICAL SERVICES/P DWG NO. - Describes the service (and boundary where applicable) of the specific segment of piping addressed. Includes the P Drawing(s) on which the pipe segment is located.
- 3.3 DESIGN PSIG - Piping design pressure.
- 3.4 DESIGN TEMP - Piping design temperature.
- 3.5 NORMAL PSIG - Pressure in the pipe during normal plant operations.
- 3.6 NORMAL TEMP - Temperature in the pipe during normal plant operations.
- 3.7 MAXIMUM PSIG - Maximum pressure in the pipe when the system (or portion of a system) is required to operate.
- 3.8 MAXIMUM TEMP - Maximum temperature in the pipe when the system (or portion of the system) is required to operate.
- 3.9 SYS. NO. - Number of the system in which the piping segment is located.
- 3.10 SIZE - Nominal pipe diameter of the piping segment.
- 3.11 THK. IN. - Pipe wall thickness in inches.
- 3.12 MAT -General material type (CS for carbon steel or SS for stainless steel).
- 3.13 VOL - An X in this column indicates that items in this piping segment are subject to volumetric examination.

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- 3.14 SUR - An X in this column indicates that items in this piping segment are subject to surface examination.
- 3.15 VT1 - An X in this column indicates that items in this piping segment are subject to a VT-1 visual examination.
- 3.16 VT2 - An X in this column indicates that a VT-2 visual examination is required during pressure testing.
- 3.17 VT3 - An X in this column indicates that items in this piping segment are subject to a VT-3 visual examination.
- 3.18 CODE EXEMPT - This column provides the reference Code paragraph for piping exempt from examination and/or pressure testing.
- 3.19 OTHER EXAM - This column provides examination requirements for other than Code required examinations.
- 3.20 OTHER REF. - This column provides the reference for non Code examination requirements (i.e. vol exams for IGSCC)
- 3.21 NOTES - This column provides explanatory information and references Line List Table Notes.

4.0 Conventions

4.1 Welds at Transitions

- 4.1.1 Welds at pipe to components (i.e. weld from pipe to pump nozzle, pipe to valve, etc.) locations will be considered as a pipe weld and subject to examination and pressure testing requirements of the piping section attached to the component.
- 4.1.2 Welds between two different pipe segments will be considered as part of the higher order pipe segment. For example a weld between a Class 2 and a Class 3 segment will be considered as a Class 2 weld. A weld between an exempt portion of pipe and a non exempt portion of pipe will be treated as non exempt.

4.2 Non Transition Welds

Welds from piping to components where the line number does not change across the component (i.e. a valve welded into a piping segment where the line number is the same on both sides of the valve). The weld on each end of the component will be considered to be a piping weld and part of the pipe segment attached to the component at the weld.

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5.0 GGNS ISI Line List Table Notes

5.1 Note 1: IWD-1210 defines the scope of Class 3 components as pressure retaining components in systems in support of the following functions.

- reactor shutdown,
- emergency core cooling,
- containment heat removal,
- atmosphere cleanup,
- reactor residual heat removal,
- residual heat removal from spent fuel storage pool.

This line does not perform any of these functions and is outside the scope of examinations and pressure testing requirements. (Reference P Drawing Legend Note 2)

5.2 Note 2: IWA-1320(e) states that non-nuclear piping that has been optionally upgraded to ASME Class 2 or Class 3 does not require the implementation of Section XI examination and pressure testing. This is an optionally upgraded section of pipe that is excluded from Section XI examination and pressure testing. (Reference P Drawing Legend Note 3)

5.3 Note 3: Piping whose only safety function is to maintain the secondary containment boundary. This piping was installed to the guidelines of Section III without Code stamping. The piping is, in effect, an optional upgrade and does not require Section XI examination or pressure testing. (Reference P Drawing Legend Note 4)

5.4 Note 4: This piping is a portion of a Containment or Drywell penetration. The piping does not perform any Nuclear Power System function. The only safety function is for Containment or Drywell integrity. Section XI examination requirements apply. Pressure testing shall be in accordance with 10 CFR 50 Appendix J in lieu of Section XI, except that when leakage is recorded, additional examinations shall be performed to ensure that leakage is not through wall. (Reference P Drawing Legend Note 6)

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- 5.5 Note 5: IWC-1221(d) and IWC-1222(d) exempts piping in open ended portions of systems that do not contain water during normal plant operations from volumetric and surface examinations.
- 5.6 Note 6: IWD-5240(b) excludes open ended discharge piping from periodic pressure testing. This piping is excluded from pressure testing (Reference P Drawing Legend Note 1)
- 5.7 Note 7: Table IWC-2500-1 note(2) requires that some welds excluded from surface and volumetric examinations be included in the total weld count used to determine percentages of welds examined. Welds in this line are excluded from surface and volumetric examination, but the welds are counted in the total population.
- 5.8 Note 8: IWD-1220(d) exempts examination of integral attachments that are inaccessible due to being encased in concrete, buried underground, or encapsulated by guard pipe. Integral attachments to this line are exempt.
- 5.9 Note 9: IWC-5222(b) excludes open ended discharge piping from periodic pressure testing requirements. (Reference P Drawing Legend Note 1)

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GRAND GULF NUCLEAR STATION
INSERVICE INSPECTION PROGRAM

LINE CLASS CCB
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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S O U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.	NOTES
		PSIG	TEMP	NORMAL PSIG	TEMP PSIG	MAXIMUM PSIG	TEMP PSIG												
001	CRD WATER FROM CCD-3 TO VALVE F122. CTMT. PENETRATION #33. P-1081A	2000	140	1740	140	1740	140	C11	2.000	0.34	SS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
002	TEST CONNECTION FROM CCB-1 TO CCD-7. P-1081A	2000	140	1740	140	1740	140	C11	0.750	0.15	SS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
003	REACTOR WATER FROM REACTOR RECIRC. PUMPS C001A & B-N TO PT N006A & B AND N005A & B. P-1078A P-1078E	1609	575	1200	500	1765	565	B33	0.750	0.15	SS				X		IWC-1222(a)		
004	CRD WATER FROM CCD-5 TO CCB-3. P-1078A P-1078E	1609	575	1200	500	1765	565	B33	0.750	0.15	SS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
005	CRD INSERT LINE FROM HCU's TO CRD DRIVE HOUSING. P-1081B	2000	140	1310	140	1500	140	C11	1.250	0.25	SS				X		IWC-1222(a)		
006	CRD WITHDRAW LINE FROM CRD DRIVE HOUSING TO HCU's. P-1081B	1500	280	1310	280	1500	280	C11	1.000	0.17	SS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCUR LESS THAN 1% OF THE SYS. OPERATING LIFE.
007	CRD SCRAM DROP, FROM HCU's TO EBB-7. P-1081A P-1081B	1250	280	0	80	1250	280	C11	0.750	0.15	SS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCUR LESS THAN 1% OF THE SYS. OPERATING LIFE.
008	VENT FROM CCB-6. P-1081B	1500	280	1310	280	1500	280	C11	0.750	0.15	SS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCUR LESS THAN 1% OF THE SYS. OPERATING LIFE.
009	VENT FROM CCB-5. P-1081B	2000	140	1310	140	1500	140	C11	0.750	0.15	SS				X		IWC-1222(a)		

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LINE CLASS DBA
REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
001	CONDENSATE FROM GBB-7 TO REACTOR. CONTAINMENT PEN. #31 DRYWELL PENETRATION #317. P-1087	1250	575	1060	555	1100	560	E21	14.000	0.75	CS	X	X		X					
004	LOW POINT DRW DRAIN FROM DBA-29 TO HBD-1024. P-1085B	1250	575	1060	550	1100	575	E12	1.000	0.25	CS				X		IWB-1220(b)(1			
005	CONDENSATE FROM 12-DBB-8 TO 14-DBA-5. P-1086	1250	575	1060	555	1100	560	E22	12.000	0.68	CS	X	X		X					
005	FROM VALVE F036 TO RPV NOZZLE. P-1086	1575	200	1325	94	1480	185	E22	14.000	0.75	CS	X	X		X					
005	CONDENSATE FROM 12-DBA-5 TO VALVE F036. P-1086	1250	575	1060	555	1100	560	E22	14.000	0.75	CS	X	X		X					
007	SODIUM PENTABORATE FROM SLC SYSTEM DCA-2 TO DBA-5. P-1086	1250	575	1060	555	1060	555	C41	3.000	0.30	CS		X		X					
009	REACTOR WTR. HDR.FROM 4-DBA-9 & 4-DBA-10 TO 6-DBC-1. P-1079	1250	575	1060	555	1100	560	G33	6.000	0.43	CS	X	X		X					
009	REACTOR WTR. HDR. FROM VALVE F100 TO 6-DBA-9 (4X6 REDUCER). P-1079	1250	575	1060	555	1100	560	G33	4.000	0.33	CS	X	X		X					
010	REACTOR WATER FROM DCA-1 TO DBA-9. P-1079	1250	575	1060	555	1100	560	G33	4.000	0.33	CS	X	X		X					
011	REACTOR WATER FROM DBA-40 AND DBA-41 TO DBA-9. P-1078A P-1079	1250	575	1060	555	1100	560	G33	4.000	0.53	CS	X	X		X					
012	BYPASS FOR VALVE F101 FROM DBA-11. P-1079	1250	575	1060	555	1100	560	G33	2.000	0.34	CS		X		X					
013	FROM VALVE F011 TO DBA-17. P-1077A P-1077D	1250	575	1090	425	1120	560	B21	18.000	0.93	CS	X	X		X					

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GRAND GULF NUCLEAR STATION
INSERVICE INSPECTION PROGRAM

LINE CLASS DBA
REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.	NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
013	FROM 24-DBA-13 TO VALVE F011. P-1077A P-1077D	1500	575	1125	425	1420	560	B21	18.000	0.93	CS	X	X		X				
013	FEEDWATER HEADERS FROM DBB-73 TO 18-DBA-13. P-1077A P-1077D	1500	575	1125	425	1420	560	B21	24.000	1.21	CS	X	X		X				
017	FEEDWATER FROM DBA-13 TO REACTOR. P-1077A P-1077D	1250	575	1090	425	1120	560	B21	12.000	0.68	CS	X	X		X				
019	REACTOR STEAM FROM DBA-30 TO GBD-63. P-1077A	1250	575	1060	555	1100	560	B21	2.000	0.34	CS		X		X				
020	REACTOR STEAM FROM DBA-19 TO DCA-6. P-1077A	1250	575	1060	555	1100	560	B21	1.000	0.25	CS				X		IWB-1220(b)(1)		
021	REACTOR STEAM FROM DBA-19 TO STEAM LINE "A". P-1077A	1250	575	1060	555	1100	560	B21	2.000	0.34	CS		X		X				
022	MAIN STEAM LINE DRAINS INSIDE DRYWELL FROM ISOLATION VLVS. A,B,C, & D TO DBA-23. P-1077A P-1077D	1250	575	1060	555	1100	560	B21	2.000	0.34	CS		X		X				
023	MSL DRAIN FROM DBA-22 TO DBD-31 CTMT. PENE. #19, DRYWL. PENET. #312. P-1077A	1250	575	1060	555	1100	560	B21	3.000	0.30	CS		X		X				
024	MAINSTEAM/RCIC FROM MAINSTEAM LINE "A" TO DBB-56. CTMT. PENT#17, DRYWELL PENTE. #310. P-1077A P-1083B	1250	575	1060	555	1150	560	E51	10.000	0.59	CS	X	X		X				
025	MAINSTEAM LINE DRAINS OUTSIDE CONTAINMENT FROM 2-DBA-25 TO DBD-35. P-1077A P-1077D	1250	575	1060	555	1100	560	B21	1.500	0.28	CS		X		X				
025	MAIN STEAM LINE DRAINS OUTSIDECONTAINMENT FROM ISOLATION VALVE TO 1.5-DBA-25. P-1077A P-1077D	1250	575	1060	555	1100	560	B21	2.000	0.34	CS		X		X				

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LINE CLASS DBA
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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.	NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
028	CONDENSATE FROM 14-GBB-81 TO 12-DBA-28 (PORTION INSIDE THE CONTAINMENT). P-1085A	1250	575	1060	100	1100	212	E12	14.000	0.75	CS	X	X		X				
028	CONDENSATE FROM 14-GBB-81 TO 12-DBA-28 (PORTION INSIDE THE DRYWELL). P-1085A	1250	575	1060	555	1100	560	E12	14.000	0.75	CS	X	X		X				
028	CONDENSATE FROM 14-DBA-28 TO RPV NOZZLE. P-1085A P-1077D	1250	575	1060	555	1100	560	E12	12.000	0.68	CS	X	X		X				
029	CONDENSATE FROM 14-GBB-20 TO 12-DBA-29 (PORTION INSIDE THE DRYWELL). P-1085B	1250	575	1060	555	1100	560	E12	14.000	0.75	CS	X	X		X				
029	RHR PUMP CONDENSATE FROM 14-DBA-29 TO REACTOR VESSEL. P-1085B P-1077D	1250	575	1060	555	1100	560	E12	12.000	0.68	CS	X	X		X				
029	CONDENSATE FROM 14-GBB-20 TO 12-DBA-29 (PORTION INSIDE THE CONTAINMENT). P-1085B	1250	575	1060	100	1100	212	E12	14.000	0.75	CS	X	X		X				
030	RHR DISCHARGE TO REACTOR VESSEL HEAD. CTMT. PENT. #18, DRYWELL PENT. #311. P-1077A P-1085A	1250	575	1060	555	1100	560	E51	6.000	0.43	CS	X	X		X				
031	DRW DRAIN FROM DBA-1 TO 113. P-1087	HBD-1250	575	1060	555	1100	560	E21	1.000	0.25	CS				X		IWB-1220(b)(1)		
032	CONDENSATE FROM E12-F023 TO DBA-30. P-1085A	1250	575	1060	555	1100	560	E12	6.000	0.43	CS	X	X		X				
034	BYPASS FOR VALVE F063 IN DBA-24. P-1083B	1250	575	1060	555	1150	565	E51	1.000	0.25	CS				X		IWB-1220(b)(1)		
038	RHR PUMP "C" DISCHARGE FROM GBB-58 TO VALVE F039(B12 SYS). P-1085C	1250	575	1060	555	1100	560	E12	12.000	0.68	CS	X	X		X				

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
038	RHR PUMP "C" DISCHARGE FROM VALVE F039 TO RPV. P-1077D P-1085C	1250	575	1060	555	1100	560	B21	12.000	0.68	CS	X	X		X				
040	REACTOR WATER FROM REACTOR TO DBA-11 (2X4 REDUCER). P-1078A	1250	575	1060	555	1100	560	B33	2.000	0.34	CS				X		IWB-1220(c)		INACCESSIBLE DUE TO CRD MECHANISMS
041	REACTOR WATER FROM REACTOR TO DBA-11 (2X4 REDUCER). P-1078A	1250	575	1060	555	1100	560	B33	2.000	0.34	CS				X		IWB-1220(c)		INACCESSIBLE DUE TO CRD MECHANISMS
042	CRW DRAIN FOR REACTOR FROM DBA-41 TO HBD-818. P-1078A	1250	575	1060	555	1100	560	G33	2.000	0.34	CS		X		X				
064	REACTOR RECIRC. WATER FROM DCA-25 TO GBB-31. P-1085B	1250	575	1060	555	1100	560	E12	20.000	1.03	CS	X	X		X				
069	STEAM FROM DBA-25 TO MSIV CONTROL SYSTEM. P-1077A,D P-1097	1250	575	1060	555	1100	560	B21	1.500	0.28	CS		X		X				
078	DRW DRAIN FROM DBA-5 TO 1080. P-1086	HBD-	1575	575	1325	555	1480	575	E22	1.000	0.25	CS			X		IWB-1220(b)(1		
079	DRW DRAIN FROM DBA-38 TO 1030. P-1085C	HBD-	1250	575	1060	555	1100	560	E12	1.000	0.25	CS			X		IWB-1220(b)(1		
080	DRW DRAIN FROM DBA-30 TO 681 P-1085A	HBD-	1250	575	1060	555	1100	560	E51	1.000	0.25	CS			X		IWB-1220(b)(1		
081	DRW DRAIN FROM DBA-28 TO 1029. P-1085A	HBD-	1250	575	1060	545	1100	560	E21	1.000	0.25	CS			X		IWB-1220(b)(1		
082	TEST CONNECTION FROM DBA-9. P-1079	1250	575	1060	555	1100	560	G33	0.750	0.21	CS			X			IWB-1220(b)(1		
086	DRAIN LINE FROM DBA-11. P-1079	1250	575	1060	555	1100	560	G33	1.000	0.25	CS			X			IWB-1220(b)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
087	FROM GBB-145 TO DBA-13. P-1077A,D P-1112	1500	575	1125	425	1420	560	E38	1.500	0.28	CS		X		X					
087	DRAIN LINE FROM VALVE F010A,B. P-1077A,D	1500	575	1125	425	1420	560	B21	1.000	0.25	CS				X		IWB-1220(b)(1)			
089	RWCU FROM 6"-DBA-9 TO DBA-22. P-1079	1250	575	1040	550	1080	555	G33	6.000	0.43	CS	X	X		X					
090	RWCU RETURN FROM DBB-140 TO DBA-9. P-1079	1250	575	1040	550	1080	555	G33	6.000	0.43	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
003	TEST CONNECTION FROM DBA-24 TO DBD-81. P-1083B	1250	575	1060	555	1150	560	E51	0.750	0.21	CS				X		IWC-1222(a)			
008	HPCS PUMP C001-C DISCHARGE 16 X 12 REDUCER. P-1086	TO	1575	200	1325	95	1480	185	E22	16.000	1.03	CS	X	X		X				
008	HPCS PUMP C001-C DISCHARGE FROM 16X12 REDUCER TO VALVE F004. P-1086		1575	200	1325	95	1480	185	E22	12.000	0.84	CS	X	X		X				
010	DRW DRAIN FROM HPCS PUMP C001-C TO HBD-207. P-1086		1575	200	1325	95	1480	185	E22	0.750	0.21	CS				X		IWC-1221(a)(1)		
011	HPCS TEST LINE FROM DBB-8 HBB-31 AND HBB-32. P-1086	TO	1575	200	1325	95	1480	185	E22	4.000	0.43	CS				X		IWC-1221(a)(1)		
012	DRW DRAIN FROM DBB-8 TO 214. P-1086	HBD-	1575	200	1325	95	1480	185	E22	1.000	0.25	CS				X		IWC-1221(a)(1)		
013	CONDENSATE FROM DBB-14 TO DBB-8. P-1086		1575	200	1325	95	1480	185	E22	4.000	0.43	CS				X		IWC-1221(a)(1)		
014	CONDENSATE FROM DBB-8 TO 4X1 RED. IN LINE TO PSV F035. P-1086		1575	200	1325	95	1480	185	E22	4.000	0.43	CS				X		IWC-1221(a)(1)		
014	FROM 4-DBB-14 TO PSV F035. P-1086		1575	200	1325	95	1480	185	E22	1.000	0.25	CS				X		IWC-1221(a)(1)		
015	HPCS JOCKEY PUMP C003-C DISCHARGE FROM HBB-27 TO DBB-14. P-1086		1575	200	1325	95	1480	185	E22	1.000	0.25	CS				X		IWC-1221(a)(1)		
016	HPCS TEST LINE FROM 14-DBB-16 TO HBB-32. P-1086		1575	200	1325	95	1480	185	E22	12.000	0.84	CS	X	X		X				

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			PSIG	TEMP	NORMAL PSIG	MAXIMUM TEMP												
016	HPCS TEST LINE FROM DBB-8 TO 12-DBB-16. P-1086	1575 200	1325	95	1480	185	E22	14.000	0.93	CS	X	X		X				
017	LPCS TEST LINE FROM DBA-1 TO DBD-83. P-1087	1250 575	1060	555	1100	560	E21	0.750	0.21	CS				X		IWC-1221(a)(1		
018	CONDENSATE FROM DBB-16 TO HCD-4. P-1086	1575 200	1325	95	1480	185	E22	10.000	0.71	CS	X	X		X				
019	VENT FROM DBB-18 TO HBD-213. P-1086	1575 200	1325	95	1480	185	E22	0.750	0.21	CS				X		IWC-1221(a)(1		
020	FLUSHING WATER SUPPLY FROM HBD-216 TO DBB-8. P-1086	1575 200	1325	95	1480	185	E22	4.000	0.43	CS				X		IWC-1221(a)(1		
021	VENT FROM DBB-8 TO HBD-212. P-1086	1575 200	1325	95	1480	185	E22	0.750	0.21	CS				X		IWC-1221(a)(1		
023	MAIN STEAM FROM NUCLEAR BOILERSYSTEM TO DBB-143. P-1077A P-1077D	1250 575	1000	545	1050	550	B21	28.000	1.10	CS	X	X		X				
040	STEAM FROM DBB-23 TO DBB-75 IN MSIV LEAKAGE CONTROL SYSTEM P-1077A P-1077D	1250 575	1060	555	1100	560	B21	2.000	0.34	CS				X		IWC-1222(a)		
044	RCIC PUMP C001 DISCHARGE TO VALVE F013. P-1083A	1500 140	1230	140	1375	170	E51	6.000	0.56	CS	X	X		X				
044	RCIC PUMP C001 DISCHARGE FROM VALVE F013 TO DBB-68. P-1083A P-1085A	1500 450	1230	420	1375	425	E51	6.000	0.56	CS	X	X		X				
044	PRESSURE EQUALIZATION LINE FROM E51F013 P-1083A	1500 140	1230	140	1375	170	E51	0.750	.154	CS				X		IWC-1222(a)		
045	DRW DRAIN FROM 3/4-DBB-45 TO HBD-689. P-1083A	1500 140	1230	140	1375	170	E51	1.000	0.25	CS				X		IWC-1222(a)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
045	DRW DRAIN FROM RCIC PUMP D001 TO 1-DBB-45. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS					X	IWC-1222(a)		
046	DRW VENT FROM RCIC PUMP D001 TO HBD-688. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS					X	IWC-1222(a)		
047	CONDENSATE FROM DBB-44 TO HBB-70. P-1083A P-1083B	1500	140	1230	140	1375	170	E51	2.000	0.34	CS					X	IWC-1222(a)		
048	DRW DRAIN FROM DBB-44 TO HBD-686. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS					X	IWC-1222(a)		
049	RCIC PUMP MINIMUM FLOW TEST RETURN FROM DBB-44 TO HBB-60. P-1083A	1500	140	1230	140	1375	170	E51	2.000	0.34	CS					X	IWC-1222(a)		
050	TEST CONNECTION FROM DBB-49 TO DBD-98. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS					X	IWC-1222(a)		
051	CONDENSATE FROM DBB-44 TO DBD-222. P-1083A	1500	140	1230	140	1375	170	E51	4.000	0.43	CS					X	IWC-1222(a)		
052	DRAIN FROM DRAIN POT DBB-57 TO HBD-125. P-1083B	1250	575	1060	555	1150	560	E51	1.500	0.28	CS					X	IWC-1222(a)		
054	TEST CONNECTION FROM DBB-52 TO DBD-82. P-1083B	1250	575	1060	555	1150	560	E51	0.750	0.21	CS					X	IWC-1222(a)		
056	STEAM FROM DBA-24 TO DBB-87. P-1083B P-1085A	1250	575	1060	555	1150	560	E51	10.000	0.71	CS	X	X			X			
057	STEAM FROM DBB-56 TO 6X4 REDUCER (4-DBB-057) IN LINE TO TUBRINE STOP VALVE. P-1083B	1250	575	1060	555	1150	560	E51	6.000	0.56	CS	X	X			X			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
057	FROM 6" DBB-057 (6X4 REDUCER) TO TURBINE STOP VALVE. P-1083B	1250	575	1060	555	1150	560	E51	4.000	0.43	CS				X		IWC-1222(a)			
058	AUXILIARY STEAM FROM BLIND FLANGE TO DBB-57. P-1083B	1250	575	1060	555	1150	560	E51	6.000	0.56	CS	X	X		X					
059	TEST CONNECTION FROM DBB-56 TO DBD-80. P-1083B	1250	575	1060	555	1150	560	E51	0.750	0.21	CS				X		IWC-1222(a)			
062	DRAINS FROM RCIC TURBINE TRIP THROTTLE VALVE TO HBD-65. P-1083B	1250	575	1060	555	1150	560	E51	0.750	0.21	CS				X		IWC-1222(a)			
065	TEST CONNECTION FROM DBA-81 TO DBD-103. P-1085A	1250	450	1120	560	1120	560	E12	0.750	0.21	CS				X		IWC-1221(a)(1)			
066	TEST CONNECTION FROM DBB-68 TO DBD-104. P-1085A	600	450	400	350	400	350	E12	0.700	0.21	CS				X		IWC-1221(a)(1)			
067	TEST CONNECTION FROM DBA-23 TO DBD-143. P-1077A	1250	575	1060	555	1100	560	B21	0.750	0.21	CS				X		IWC-1222(a)			
068	CONDENSATE FROM GBB-86 TO THERMAL SLEEVE, DBB-73 (RHR PUMP B DISCHRG. TO FW LOOP B). P-1077D P-1085A	1500	575	1260	545	1260	545	E12	12.000	0.84	CS	X	X		X					
070	BYPASS FOR VALVE F087B-B FROM DBB-87 TO GBB-77. P-1085A	1250	575	1060	555	1100	560	E12	8.000	0.59	CS	X	X		X					
071	RWCW WATER FROM DBB-104 TO DBB-72. P-1085B P-1079	1500	575	1160	470	1260	545	E12	6.000	0.56	CS	X	X		X					
072	CONDENSATE FROM GBB-114 TO THERMAL SLEEVE, DBB-73 (RHR PUMP A DISCHRG. TO FW LOOP A). P-1077A P-1085B	1250	575	1100	560	1100	560	E12	12.000	0.84	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
073	FEEDWATER FROM VALVES F065A & B TO DBA-13. P-1077A	1500	575	1140	420	1260	545	B21	24.000	1.53	CS	X	X		X					
074	TEST CONNECTION FROM DBB-72 TODBD-105. P-1085B	1250	450	400	350	400	350	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
075	STEAM FROM DBB-40 TO MSIV LEAKAGE CONTROL SYSTEM. P-1077A P-1097	1250	575	1060	555	1100	560	B21	2.000	0.34	CS				X		IWC-1222(a)			
075	STEAM FROM VALVE F006 TO VALVE F007. P-1097	1250	575	1060	555	1100	560	E32	2.000	0.34	CS				X		IWC-1222(a)			
076	TEST CONNECTIONS FROM DBA-25 TO HBD-634. P-1077A P-1077D	1250	575	950	540	980	540	B21	0.750	0.21	CS				X		IWC-1222(a)			
078	TEST CONNECTION FROM DBA-1 TO HBD-114. P-1087	1250	575	1060	555	1100	560	E21	0.750	0.21	CS				X		IWC-1221(a)(1			
080	LOW POINT DRW DRAIN. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS				X		IWC-1222(a)			
081	LOW POINT DRW DRAIN. P-1083A	1500	140	1230	140	1375	170	E51	1.000	0.25	CS				X		IWC-1222(a)			
082	DRW DRAIN FOR DRAIN POT TO HBD-1020. P-1083B	1250	575	1060	555	1150	560	E51	1.000	0.25	CS				X		IWC-1222(a)			
083	TEST CONNECTIONS FROM DBA-13 TO HBD-646. P-1077A P-1077D	1500	450	1125	425	1420	565	B21	0.750	0.21	CS				X		IWC-1222(a)			
084	TEST CONNECTIONS FROM DBB-73 TO HBD-647. P-1077A P-1077D	1500	575	1140	420	1260	545	B21	0.750	0.21	CS				X		IWC-1222(a)			
085	TEST CONNECTIONS FROM DBA-87 TO HBD-648. P-1077A P-1077D	1500	450	1125	425	1420	565	B21	0.750	0.21	CS				X		IWC-1222(a)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
086	LOW POINT DRW DRAIN FROM DBB-72 TO HBD-1025. P-1085B	1250	575	1100	560	1100	560	E12	1.000	0.25	CS				X		IWC-1221(a)(1			
087	STEAM FROM DBB-56 TO VALVE FO52 AND GBB-22. P-1085A P-1085B	1250	575	1060	555	1100	560	E51	8.000	0.59	CS	X	X		X					
088	RWCW WATER FROM DBB-104 TO DBB-68. P-1079 P-1085A	1500	575	1160	476	1260	545	E12	6.000	0.56	CS	X	X		X					
089	TEST CONNECTION FROM DBA-32 TO DBD-109. P-1085A	1250	575	1060	555	1100	560	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
092	TEST CONNECTION FROM DBA-28 TO DBD-102. P-1085A	1250	575	1060	545	1100	575	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
095	TEST CONNECTION FROM DBA-64 TO DBD-108. P-1085B	1250	575	1045	535	1100	560	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
096	TEST CONNECTION FROM DBA-4 TO DBD-107. P-1085B	1250	575	1060	545	1100	575	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
099	TEST CONNECTION FROM DBA-38 TO DBD-101. P-1085C	1250	575	1060	545	1100	565	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
100	TEST CONNECTION FROM DBA-79 TO DBD-100. P-1085C	1250	575	1060	545	1100	565	E12	0.750	0.21	CS				X		IWC-1221(a)(1			
103	RWCW FROM DBZ-2 TO DBZ-3. CTMT. PENETRATION #88. P-1079	1420	575	1210	545	1220	545	G33	4.000	0.43	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
104	RWCW SUPPLY HEADER FROM VALVE F039 TO VALVE F040. P-1079	1420	575	1090	440	1125	545	G33	6.000	0.56	CS	X	X							ISI REQ. PT NOT REQ. SEE NOTE 4
104	RWCW SUPPLY HEADER FROM VALVE F039 TO DBB-71 AND DBB-88. P-1079	1420	575	1090	440	1125	545	G33	6.000	0.66	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
104	TEST CONNECTION FROM DBB-104 TO DBD-115. P-1079	1420	575	1090	440	1125	545	G33	0.750	0.21	CS				X		IWC-1222(a)			
105	DRW VENTS AND DRAINS FROM DBB-23 TO HDB-968. P-1077A P-1077D	1250	575	1000	545	1050	550	B21	0.750	0.21	CS				X		IWC-1222(a)			
106	TEST CONNECTION FROM DBA-9 TO DBD-117. P-1079	1250	575	1060	555	1100	560	G33	0.750	0.21	CS				X		IWC-1222(a)			
108	TEST CONNECTIONS FROM DBB-121 TO DBD-112. P-1097	1200	575	20	500	1050	550	E32	0.750	0.21	CS						IWC-1222(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
109	TEST CONNECTION FROM DBA-30 TO DBD-97. P-1085A	1250	575	1060	555	1100	560	E51	0.750	0.21	CS				X		IWC-1222(a)			
110	TEST CONNECTION FROM DBB-44. P-1083A	1500	450	1230	420	1375	425	E51	0.750	0.21	CS				X		IWC-1222(a)			
113	TEST CONNECTION FROM DBA-5 TO DBD-110. P-1086	1575	575	1325	550	1480	560	E22	0.750	0.21	CS				X		IWC-1221(a)(1)			
114	TEST CONNECTION FROM DBA-5 TO DBD-111. P-1086	1575	575	1325	550	1480	560	E22	0.750	0.21	CS				X		IWC-1221(a)(1)			
115	TEST CONNECTION FROM DBA-29 TO DBD-106. P-1085B	1250	575	1060	545	1100	575	E12	0.750	0.21	CS				X		IWC-1221(a)(1)			
116	DRW DRAIN FROM DBB-68 TO 1031. P-1085A	HDB-1500	575	1260	545	1260	545	E12	1.000	0.25	CS				X		IWC-1221(a)(1)			
117	TEST CONNECTION FROM DBB-44 TO DBD-99. P-1083A	1500	140	1230	140	1375	170	E51	0.750	0.21	CS				X		IWC-1222(a)			

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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.	NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
118	NUCLEAR STEAM FROM DBB-75 THRU VALVE F008 AND F009 TO HBB-172. P-1097	1200	575	20	500	1050	550	E32	2.000	0.34	CS				X		IWC-1222(a)		
120	NUCLEAR STEAM AND AIR FROM VALVE F002 TO DCB-23. P-1097	1200	575	20	500	1050	550	E32	1.500	0.28	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
120	NUCLEAR STEAM FROM VALVE F001 TO VALVE F002. P-1097	1200	575	20	500	1050	550	E32	1.500	0.28	CS				X		IWC-1222(a)		
121	NUCLEAR STEAM AND AIR FROM DCB-23 TO HBB-174. P-1097	1200	575	20	500	1050	550	E32	1.500	0.28	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
124	DRW VENT FROM DBA-1 TO 1099. P-1087	HBD-1250	575	1060	555	1100	560	E21	0.750	0.21	CS				X		IWC-1221(a)(1)		
125	DRW VENT FROM DBA-5 TO 1100. P-1086	HBD-1575	575	1325	555	1480	560	E22	0.750	0.21	CS				X		IWC-1221(a)(1)		
126	TEST CONNECTION FROM DBB-104. P-1079	1420	575	1090	440	1220	545	G33	0.750	0.21	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
127	TEST CONNECTION FROM DBB-103. P-1079	1420	575	1210	545	1220	545	G33	0.750	0.21	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
128	VENT FROM VALVE F063-B. P-1083B	1250	575	1060	555	1150	560	E51	0.750	0.21	CS				X		IWC-1222(a)		
129	FROM CHECK VALVE F039 TO DBB-18. P-1086	1575	200	1325	95	1480	185	E22	1.000	0.25	CS				X		IWC-1221(a)(1)		
130	FROM DBB-18 TO CHECK VALVE F039. P-1086	1575	200	1325	95	1480	185	E22	1.000	0.25	CS				X		IWC-1221(a)(1)		
131	FROM DCB-023 TO DBB-121. P-1097	1200	575	20	500	1050	550	E32	1.000	0.25	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9

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REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
132	FROM DBB-51 TO RELIEF VALVE PSV-F090. P-1083A	1500	140	1230	140	1375	170	E51	1.000	0.25	CS					X	IWC-1222(a)			
133	MISCELLANEOUS VENTS AND DRAINS ON FEEDWATER LEAKAGE CONTROL SYSTEM - INBOARD. P-1112	1500	575	1125	425	1420	560	E38	0.750	0.21	CS					X	IWC-1222(a)			
133	MISCELLANEOUS VENTS AND DRAINS ON FEEDWATER LEAKAGE CONTROL SYSTEM - OUTBOARD. P-1112	1500	575	1140	425	1260	545	E38	0.750	0.21	CS					X	IWC-1222(a)			
133	MISCELLANEOUS VENTS AND DRAINS ON FEEDWATER LEAKAGE CONTROL SYSTEM - OUTBOARD. P-1112	1500	575	1140	425	1260	545	E38	1.000	0.25	CS					X	IWC-1222(a)			
134	FROM GBB-145 TO DBB-87. P-1112 P-1077A,D	1500	575	1140	420	1260	545	E38	1.500	0.28	CS					X	IWC-1222(a)			
135	FROM DBA-11 TO HBD-1219. P-1079	1250	575	1060	555	1100	560	G33	0.750	0.21	CS					X	IWC-1222(a)			
136	LEAK-OFF FROM RPV FLANGE TO LEAK DETECTION SYSTEM. P-1090A P-1077A	1250	575	0	135	1375	575	E31	0.750	0.21	CS					X	IWC-1222(a)			
137	PACKING LEAK-OFF LINES FROM VALVES F028A, B, C, & D. P-1077A P-1077D	1250	575	1000	545	1050	560	B21	0.750	0.21	CS					X	IWC-1222(a)			
138	PRESSURE RELIEF LINE FROM DBA-64 TO DBB-139. P-1085B	1250	575	1045	535	1100	560	E21	0.750	0.21	CS					X	IWC-1221(a)(1)			
139	TEST CONNECTION LINE FROM DBA-64 TO DBD-141. P-1085B	1250	575	1045	535	1100	560	E12	0.750	0.21	CS					X	IWC-1221(a)(1)			
140	RWCU RETURN LINE FROM HEAT EXCHANGERS TO DBA-90. P-1079	1420	150	1195	120	1220	140	G33	6.000	0.56	CS	X	X		X					OPTIONAL UPGRADE TO ASME CLASS 1 INSPECTION REQUIREMENTS.

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REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
141	TRANSITION PIECE FROM DBD-25 TO DBB-73. P-1077A P-1077D	1700	450	1140	420	1260	425	B21	24.000	1.53	CS									NO ISI OR PT REQ. SEE NOTE 3
142	PRESSURE TEST CONNECTION TO FEEDWATER LINE DBA-17. P-1077A P-1077D	1250	575	1060	555	1120	560	B21	0.750	0.21	CS				X		IWC-1222(a)			
143	MOMENT GUIDE ON MAIN STEAM LINE FROM DBB-23 TO DBD-56. P-1077A P-1077D	1250	575	1000	545	1050	550	B21	28.000	1.10	CS									NO ISI OR PT REQ. SEE NOTE 3
144	VENT FROM DBB-68 TO HBD-1494. P-1085A	1500	575	1375	565	1375	565	E12	0.750	0.21	CS				X		IWC-1221(a)(1)			
145	LEAK DETECTION FROM 14" DBA-5 TO 3/4" DBD-38. P-1086	1250	575	1060	555	1160	560	E22	0.750	0.21	CS				X		IWC-1221(a)(1)			
146	AUX. BLDG. FLOOR AND EQUIP. DRAIN TRANSFER TANK PUMP - BACK TO THE SUPPRESSION POOL. P-1094C	150	212	5	200	5	200	P45	4.000	0.43	CS						IWC-1222(d) IWC-5222			OPEN ENDED PIPE
149	TEST CONNECTION FROM DBB-140. P-1079	1420	150	1195	120	1220	140	G33	0.750	0.21	CS				X		IWC-1222(a)			
151	BYPASS LINE AROUND VALVE F045A. DCP 82/0546 P-1083B	E51- 1250	575	1060	555	1150	560	E51	1.000	0.00	CS				X		IWC-1222(a)			
151	BYPASS LINE AROUND VALVE E51-F045A. P-1083B	1250	575	1060	555	1505	60	E51	2.000		CS				X		IWC-1222(a)			
159	DRAIN FROM 6-DBB-104 P-1079	1420	575	1090	440	1125	545	G33	1.000	0.25	CS						IWC-1222(a)			
160	PRESSURE EQUALIZATION FROM E12F042A TO 14-DBA-29 P-1085B	1250	575	1060	555	1100	560	E12	0.750	0.21	CS				X		IWC-1221(a)(1)			
161	PRESSURE EQUALIZATION FROM E12F042B TO 14-DBA-28 P-1085A	1250	575	1060	555	1100	560	E12	0.750	0.21	CS				X		IWC-1221(a)(1)			

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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
162	PRESSURE EQUALIZATION FROM E12F042C TO 12-DBA-38 P-1085C	1250	575	1060	555	1100	560	E12	0.750	0.21	CS					X	IWC-1221(a)(1			
163	PRESSURE EQUALIZATION FROM E21F005 TO 14-DBA-1 P-1087	1250	575	1060	555	1100	560	E21	0.750	0.21	CS					X	IWC-1221(a)(1			
164	PRESSURE EQUALIZATION LINE FROM E22F004 TO 12" DBA-5 P-1086	1575	575	1325	550	1480	560	E22	0.750	0.21	CS					X	IWC-1221(a)(1			
165	TEST CONNECTION FROM DBB-87 TO F429 P-1085A	1250	575	1060	555	1100	560	E12	0.750	0.21	CS					X	IWC-1222(a)			
165	TEST CONECTION FROM DBB-87 TO F271 P-1085A	1250	575	1060	555	1100	560	E51	0.750	0.21	CS					X	IWC-1222(a)			
166	PRESSURE EQUALIZATION LINE FOR VALVE 1E12F009 P-1085B	1250	575	1060	555	1100	560	E12	0.750	.219	CS					X	IWC-1221(a)(1			
167	PRESSURE EQUALIZATION LINE FOR VALVE 1E12F008 P-1085B	1250	575	1060	555	1100	560	E12	0.750	.219	CS					X	IWC-1221(a)(1			
168	TEST CONNECTION FROM DBB-167 P-1085B	1250	575	1060	555	1100	560	E12	0.750	.219	CS					X	IWC-1221(a)(1			

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REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS			SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V 1	V 2	V 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
001	FROM DBA-9 TO 8-DCB-1. P-1079	1250	575	1000	535	1030	545	G33	6.000	0.43	CS								NO ISI OR PT REQ. SEE NOTE 1
001	FROM 8-DBC-1 TO DBZ-1. P-1079	1250	575	1000	535	1030	545	G33	4.000	0.33	CS								NO ISI OR PT REQ. SEE NOTE 1
001	FROM 6-DBC-1 TO INLINE 6X4, REDUCER 4-DBC-1. P-1079	1250	575	1000	535	1030	545	G33	8.000	0.50	CS								NO ISI OR PT REQ. SEE NOTE 1
002	FROM DBZ-2 TO DBB-103. P-1079	1420	575	1195	535	1220	530	G33	4.000	0.33	CS								NO ISI OR PT REQ. SEE NOTE 1
014	DRW DRAIN FROM DBZ-1 TO 479. P-1079	HBD-1250	575	1000	535	1030	545	G33	1.000	0.25	CS								NO ISI OR PT REQ. SEE NOTE 1
015	TEST CONNECTION FROM DBC-1 TO DBD-19. P-1079	1250	575	1000	535	1030	545	G33	0.750	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1
016	TEST CONNECTIN FROM DBZ-2 TO DBD-116. P-1079	1420	575	1195	535	1220	550	G33	0.750	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1

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LINE CLASS DCA
REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
001	REACTOR RECIRCULATION WATER FROM LOOPS A & B TO DBA-9&10. P-1079 P-1078A,E	1250	575	1060	535	1375	565	B33	4.000	0.33	SS	X	X		X			VOL	IGSCC	
002	SODIUM PENTABORATE FROM DCB-33 TO F007. P-1082 P-1086	1400	150	1060	110	1220	150	C41	1.500	0.20	SS		X		X					
002	FROM VALVE F007 TO DBA-7. P-1082 P-1086	1250	575	1060	555	1220	555	C41	1.500	0.20	SS		X		X					
003	REACTOR WATER FROM 10-DCA-3 TO END CAP. P-1082 P-1077B	1250	575	1060	555	1220	560	B21	1.500	0.20	SS		X		X					
003	FROM REACTOR VESSEL TO DCA-3. P-1077B P-1082	1.5-1250	575	1060	555	1220	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
004	VENT AND TEST CONNECTION OUTSIDE DRYWELL FROM DCA-2 TO DCB-45. P-1082	1400	150	1060	110	1220	150	C41	0.750	0.15	SS				X		IWB-1220(b)(1)			
006	RCIC FROM DBA-20 TO CONDENSINGPOT D002. P-1077A P-1077B	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
007	REACTOR WATER TO DCB-4. P-1077B	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
024	CRW DRAINS FROM DCA-1 TO 69. P-1078A P-1078E	HCD-1250	575	1060	535	1100	560	B33	2.000	0.21	SS		X		X					
025	REACTOR RECIRC. WATER FROM LOOP B SUCTION TO RHR SYSTEM, DBA-64. P-1078E P-1085B	1250	575	1060	555	1100	560	B33	20.000	0.87	SS	X	X		X			VOL	IGSCC	
026	STEAM FOR I&C FROM REACTOR TO CONDENSING POTS D004 A, B, C & D, DCB-7. P-1077B	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			

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LINE CLASS DCA
REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
027	CONDENSATE FOR I&C FROM REACTOR TO DCB-8. P-1077B	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
028	CONDENSATE FOR I&C FROM REACTOR TO DCB-9. P-1077B	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
031	FROM DCA-3 TO HCD-371. P-1082	1275	575	1060	555	1220	560	C41	1.000	0.17	SS				X		IWB-1220(b)(1)			
032	FROM MAIN STEAM LINE TO VARIOUS CONDENSING CHAMBERS. P-1077A P-1077C,D	1250	575	1060	555	1100	560	B21	1.000	0.17	SS				X		IWB-1220(b)(1)			
033	VENT & TEST CONN. FROM DCA-3. P-1082	1275	575	1060	555	1220	560	C41	0.750	0.15	SS				X		IWB-1220(b)(1)			
034	DRAIN FROM DCA-2 TO HCD-371. P-1082	1400	150	1060	110	1220	150	C41	0.000	0.17	SS				X		IWB-1220(b)(1)			

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LINE CLASS DCB
REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
001	REACTOR WATER FROM DCD-1 TO FT-N037. P-1079 P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
001	REACTOR WATER FROM FX022 TO DBA-11. P-1079	1250	575	1060	555	1100	560	G33	0.750	0.15	SS				X		IWC-1222(a)			
002	REACTOR WATER FROM DCB-3 TO FX090. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
003	REACTOR WATER FROM DCA-3 TO DCB-2 AND DCD-7. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
004	REACTOR WATER FROM DCA-7 TO PENETRATION #422A (FX066). P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
006	REACTOR WATER SAMPLE LINE FROM RECIRC. SAMPLE PROBE D014 TO F020/F021. P-1078A	1250	575	1060	555	1100	560	B33	0.750	0.30	SS				X		IWC-1222(a)			
007	CONDENSATE FROM CONDENSING POTS D004A, B, C, & D TO INSTRUMENTS AND CONTROLS. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
008	CONDENSATE FROM DCA-27 TO INSTRUMENTS AND CONTROLS. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
009	CONDENSATE FROM DCA-28 TO INSTRUMENTS AND CONTROLS. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			
010	CONDENSATE FROM INSTRUMENTS AND CONTROLS TO CONDENSING POTD002 ON DCA-6. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS				X		IWC-1222(a)			

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REVISION 13

LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S O U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.	NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
011	CONDENSATE FROM DCD-4 TO LOW PRESSURE CONNECTION OF JET PUMP DIFFUSERS. P-1078B	1550	575	1305	535	1400	565	B33	0.750	0.15	SS				X		IWC-1222(a)		
012	CONDENSATE FROM HIGH PRESSURE CONNECTIONS OF JET PUMP DIFFUSERS TO DCD-8. P-1078B	1550	575	1305	535	1400	565	B33	0.750	0.15	SS				X		IWC-1222(a)		
023	AIR OR STEAM FROM DBB-120 TO DBB-121. P-1097	1200	575	20	500	1050	550	E32	2.000	0.21	SS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
024	REACTOR WATER FROM REACTOR RECIRCULATORY PUMP SUCTION TO INSTRUMENTS. P-1078A P-1078E	1250	575	1060	555	1100	560	B33	0.750	0.15	SS				X		IWC-1222(a)		
025	REACTOR WATER RECIRC. PUMP DISCHARGE TO INSTRUMENTS. P-1078A P-1078E	1650	575	1305	535	1350	570	B33	0.000	0.15	SS				X		IWC-1222(a)		
026	WATER FROM DBA-1 TO LEAK DETECTION SYSTEM. P-1087 P-1090A	1500	575	1060	550	1370	575	E21	0.750	0.15	SS				X		IWC-1221(a)(1)		
027	STEAM FROM DBA-24 ELBOW FITTINGS TO LEAK DETECTION SYSTEM. P-1083B P-1090A	1250	575	1060	555	1100	560	E51	0.750	0.15	SS				X		IWC-1222(a)		
028	LEAK-OFF CONNECTION FROM DBA-28 TO HBD-836. P-1085A P-1090A	1250	575	1060	545	1100	560	E12	0.750	0.15	SS				X		IWC-1221(a)(1)		
029	LEAK-OFF CONNECTION FROM DBA-38 TO LEAK DETECTION SYSTEM. P-1085C P-1090A	1250	575	1060	545	1100	565	E12	0.750	0.15	SS				X		IWC-1221(a)(1)		
029	LEAK-OFF CONNECTIONS TO LEAK DETECTION SYSTEM. P-1090A P-1077A,D	1250	575	1060	545	1100	565	N11	0.750	0.15	SS				X		IWC-1222(a)		

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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S U R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
029	LEAK-OFF CONNECTIONS TO LEAK DETECTION SYSTEM. P-1085C P-1090A	1250	575	1060	545	1100	565	E12	0.750	0.15	SS				X		IWC-1221(a)(1			
030	LEAK-OFF CONNECTION FROM DCB-30 TO LEAK DETECTION SYSTEM. P-1085B P-1090A	1250	575	1060	545	1150	575	E12	0.750	0.15	SS				X		IWC-1221(a)(1			
030	LEAK-OFF CONNECTION FROM DBA-29 TO 3/4-DCB-30. P-1085B	1250	575	1060	545	1150	575	E12	1.000	0.17	SS				X		IWC-1221(a)(1			
032	FROM DCB-33 TO PSV-F029A & B P-1082	1500	150	1300	110	1300	150	C41	1.500	0.20	SS				X		IWC-1222(a)			
033	FROM PUMPS C001A & B TO VALVE F004A & B. P-1082	1400	150	1060	110	1300	150	C41	1.500	0.20	SS				X		IWC-1222(a)			
033	STANDBY LIQUID CONTROL PUMP DISCHARGE SPOOL PIECE. P-1082	1500	150	1300	110	1300	150	C41	2.000	0.21	SS				X		IWC-1222(a)			
033	FROM VALVE F004A & B TO VALVE F006. P-1082	1400	150	1060	110	1300	150	C41	1.500	0.20	SS				X		IWC-1222(a)			
034	CROSSTIE BETWEEN PUMPS C001A & B DISCHARGE. P-1082	1500	150	1300	110	1300	150	C41	1.500	0.20	SS				X		IWC-1222(a)			
036	FROM DCB-34 TO HBD-567. P-1082	1500	150	1300	110	1300	150	C41	1.000	0.17	SS				X		IWC-1222(a)			
037	FROM DCB-34 TO DCD-15 P-1082	1500	150	1300	110	1300	150	C41	1.500	0.20	SS				X		IWC-1222(a)			
038	FROM DBA-5 TO LEAK DETECTION SYSTEM. P-1086 P-1090A	1250	575	1060	555	1100	560	E22	0.750	0.15	SS				X		IWC-1221(a)(1			
039	FROM DBA-9 IN DRYWELL TO INSTRU.LINES FOR FLOW TRANS-MITTERS FT-N076A AND FT-N076B P-1079	1250	575	1060	70	1100	555	G33	0.750	0.15	SS				X		IWC-1222(a)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
040	CRW DRAINS FROM VALVES F023A & B TO HCD-72. P-1078A P-1078E	1250	575	1060	555	1100	560	B33	0.750	0.15	SS					X	IWC-1222(a)			
041	CRW VENTS FROM VALVES F023A & B TO HCD-73. P-1078A P-1078E	1250	575	1060	555	1100	560	B33	0.750	0.15	SS					X	IWC-1222(a)			
042	CRW DRAINS FROM VALVES F060A & B TO HCD-76. P-1078A P-1078E	1650	575	1305	535	1350	570	B33	0.750	0.15	SS					X	IWC-1222(a)			
043	CRW DRAINS FROM VALVES F067A & B TO HCD-74. P-1078A P-1078E	1650	575	1305	535	1350	570	B33	0.750	0.15	SS					X	IWC-1222(a)			
044	CRW VENTS FROM VALVES F067A & B TO HCD-75. P-1078A P-1078E	1650	575	1305	535	1350	570	B33	0.750	0.15	SS					X	IWC-1222(a)			
045	VENT AND TEST CONNECTION OUTSIDE DRYWELL FROM DCA-4. P-1082	1400	150	1060	110	1220	150	C41	0.750	0.15	SS					X	IWC-1222(a)			
046	PRESSURE SENSING LINE FOR RPV SEAL LEAK DETECTION FROM DBB-136 TO DRYWELL PENETRATION. P-1090A	1250	575	0	135	1375	575	E31	0.750	0.15	SS					X	IWC-1222(a)			
047	LEAK DETECTION CONNECTION FROM DBB-57. P-1083B P-1090A	1250	575	1060	555	1150	560	E51	0.750	0.15	SS					X	IWC-1222(a)			
048	LINE BETWEEN CONDENSING CHAMBERS ON DCA-32. P-1077C	1250	575	1060	555	1100	560	B21	0.750	0.15	SS					X	IWC-1222(a)			
049	DRAIN LINE OFF DCB-4. P-1077B	1250	575	1060	555	1100	560	B21	0.750	0.15	SS					X	IWC-1222(a)			
050	SAMPLE LINE BETWEEN F128 AND F127 FROM REACTOR WATER TEST CONNECTION. P-1078A	1250	575	1060	555	1100	560	B33	0.750	0.15	SS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
051	SAMPLE LINE BETWEEN F125 AND F126 FROM JET PUMP HIGH PRESSURE CONDENSATE CONNECTION P-1078B	1550	575	1305	535	1550	565	B33	0.750	0.15	SS					X	IWC-1222(a)			
052	PRESSURE SWITCH LINE ON ADS DISCHARGE FROM GBC-22 TO PSN150. P-1077E	1250	575	550	480	550	480	B21	0.750	0.15	SS						IWC-1222(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
053	PRESSURE SWITCH LINE ON NON-ADS DISCHARGE FROM GBD-118. P-1077E	1250	575	550	480	550	480	B21	0.750	0.15	SS						IWC-1222(d)			OPEN ENDED PIPE
																	IWC-5222			
056	VENT FROM F060A/B TO HCD-447. P-1078A P-1078E	1650	575	1305	535	1350	570	B33	0.750	0.15	SS					X	IWC-1222(a)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
001	RWCU FILTERED/DEMIN. WTR. FROM 6-EBB-1 TO EBD-62. CONTAINMENT PENETRATION #43. P-1079	1420	150	1075	120	1105	140	G33	4.000	0.33	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
001	RWCU FILTERED/DEMIN. WATER FROM EBZ-5 TO 4-EBB-1. CTMT. PEN. #43. P-1079	1420	150	1075	120	1105	140	G33	6.000	0.43	CS	X	X						ISI REQ. PT NOT REQ. SEE NOTE 4
003	TEST CONNECTION FROM EBB-1. P-1079	1420	150	1075	120	1105	140	G33	0.750	0.21	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
004	INSTRUMENT LINES FROM SCRAM DISCHARGE VOLUME TO LS-N013A, B, C, & D. P-1081A	1250	280	0	80	1250	280	C11	0.750	0.21	CS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
005	INSTRUMENT LINES FROM LS-N013AB, C, & D TO SCRAM DISCHARGE VOLUME. P-1081A	1250	280	0	80	1250	280	C11	0.750	0.21	CS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
006	CONTROL ROD DRIVE SCRAM INSTRUMENT VOLUME PIPING. P-1081A	1250	280	0	80	1250	280	C11	12.000	0.68	CS	X	X		X				TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
007	CONTROL ROD DRIVE SCRAM DISCHARGE HEADER FROM HCU's TO EBB-6. P-1081A	1250	280	0	80	1250	280	C11	10.000	0.59	CS	X	X		X				TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
007	CONTROL ROD DRIVE SCRAM DISCHARGE HEADER FROM HCU's TO EBB-6. P-1081A	1250	280	0	80	1250	280	C11	8.000	0.50	CS	X	X		X				TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
008	CLEANING CONNECTION FROM EBB-7. P-1081A	1250	280	0	80	1250	280	C11	2.000	0.34	CS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
009	CLEANING CONNECTION FROM EBB-6. P-1081A	1250	280	0	80	1250	280	C11	2.000	0.00	CS				X		IWC-1222(a)		TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.

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		PSIG	TEMP	NORMAL PSIG	TEMP TEMP	MAXIMUM PSIG	TEMP TEMP													
010	INSTRUMENT LINES FROM EBB-6 TO LT-N012A,B,C,&D AND LT-N017A&B. P-1081A	1250	280	0	80	1250	280	C11	0.750	0.21	CS					X	IWC-1222(a)			TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
012	SCRAM VENT FROM EBB-7 TO HBD-971. P-1081A	1250	280	0	80	1250	280	C11	1.000	0.25	CS					X	IWC-1222(a)			TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
013	SCRAM DRAIN FOR SCRAM INSTRUMENT VOLUME PIPING, FROM EBB-6 TO FO11A. P-1081A	1250	280	0	80	1250	280	C11	2.000	0.34	CS					X	IWC-1222(a)			TEMP. ABOVE 280 F OCCURS LESS THAN 1% OF THE SYS. OPERATING LIFE.
014	SDV VENT LINE BETWEEN VALVES C11-F010 AND C11-F180. P-1081A	1250	280	0	120	1100	250	C11	1.000	0.25	CS					X	IWC-1222(a)			
015	SDV DRAIN LINE BETWEEN VALVES C11-F011 AND C11-F181. P-1081A	1250	280	0	120	1100	250	C11	2.000	0.28	CS					X	IWC-1222(a)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
001	FROM GBD-117 TO SUPPRESSION POOL. P-1077E	550	500	550	480	550	480	B21	10.000	0.59	CS						X			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5240			
002	MSL DRAIN TO AUX. BLDG. ISOL. VALVES EBD-6 TO HBD-705. P-1077A	1250	490	600	436	1250	490	B21	4.000	0.33	CS									NO ISI OR PT REQ. SEE NOTE 3
024	RWCW WATER FROM EBD-62 TO HBD-139. P-1079	1410	150	120	120	120	120	G33	4.000	0.33	CS									NO ISI OR PT REQ. SEE NOTE 3

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
004	CONDENSATE FROM GBB-5 TO PSV F018. P-1087	600	200	325	95	560	185	E21	1.500	0.20	CS				X		IWC-1221(a)(1			
005	FLUSHING WATER SUPPLY FROM HBD-115 TO GBB-7. P-1087	600	200	325	95	560	185	E21	4.000	0.23	CS				X		IWC-1221(a)(1			
006	DRW VENT AND DRAIN FROM GBB-7 TO HBD-116. P-1087	600	200	325	95	560	185	E21	0.750	0.15	CS				X		IWC-1221(a)(1			
006	VENT/DRAIN LINE. P-1087	600	200	325	95	560	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1			
007	LPCS PUMP C001-A DISCHARGE TO 14-GBB-7. P-1087	600	200	325	95	560	185	E21	16.000	0.37	CS	X	X		X					
007	LPCS PUMP C001-A DISCHARGE FROM 16-GBB-7 TO DBA-1. P-1087	600	200	325	95	560	185	E21	14.000	0.37	CS	X	X		X					
009	CROSSTIE BETWEEN HBB-11 TO GBB-7. P-1087	600	200	325	95	560	185	E21	4.000	0.23	CS				X		IWC-1221(a)(1			
009	CONDENSATE FROM 1-HBB-11 TO 4-GBB-9. P-1087	600	200	325	95	560	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1			
010	CROSSTIE BETWEEN GBB-9 AND GBB-11. P-1087	600	200	325	95	560	185	E21	4.000	0.23	CS				X		IWC-1221(a)(1			
011	MINIMUM FLOW FROM GBB-7 TO HBB-13. P-1087	600	200	325	95	560	185	E21	4.000	0.23	CS				X		IWC-1221(a)(1			
013	DRW SEAL VENT FROM LPCS PUMP C001-A TO HBD-117. P-1087	600	200	325	95	560	185	E21	0.750	0.15	CS				X		IWC-1221(a)(1			
014	TEST RETURN LINE FROM GBB-7 TO HBB-9. P-1087	600	200	325	95	560	185	E21	14.000	0.37	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
016	DRW DRAINS FROM GBB-17 TO HBD-233. P-1061D	500	480	0	75	165	100	E12	0.750	0.15	CS				X		IWC-1221(a)(1		
017	SSW FROM HBD-132 TO RHR SYS., LOOP B, GBB-81. P-1061D P-1085A	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X		X				
018	RHR PUMP C002A-A DISCHARGE TO RHR HEAT EXCHANGER B001A UPSTREAM OF VALVE F047A. P-1085B	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X		X				
018	RHR PUMP C002A-A DISCHARGE TO RHR HEAT EXCHANGER B001A DOWNSTREAM OF VALVE FO47A. P-1085B	500	480	388	344	388	344	E12	18.000	0.43	CS	X	X		X				
019	CONDENSATE FROM RHR HEAT EXCHANGER B001A TO B002A. P-1085B	500	480	375	388	375	388	E12	20.000	0.50	CS	X	X		X				
019	CONDENSATE FROM RHR HEAT EXCHANGER B001A TO B002A. P-1085B	500	480	375	388	375	388	E12	18.000	0.43	CS	X	X		X				
019	FROM HEAT EXCHANGER B001A DOWN STREAM OF FX050 AND FX051 P-1085B	500	480			375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1		NORMAL PRESSURE AND TEMPERATURE IS PER SFDs
019	FROM HEAT EXCHANGER B001A UPSTREAM OF FX050 AND FX051 P-1085B	500	480			375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1		NORMAL PRESSURE AND TEMPERATURE IS PER SFDs
020	CONDENSATE FROM RHR HEAT EXCHANGER B002A TO 18-GBB-20 (CONTAINMENT PORTION ONLY). P-1085B	500	480	220	100	375	212	E12	20.000	0.50	CS	X	X		X				
020	CONDENSATE FROM RHR HEAT EXCH.FROM 18-GBB-52 TO DBA-29 (AUX. BLDG. PORTION ONLY). P-1085B	500	480	375	344	375	344	E12	14.000	0.37	CS	X	X		X				
020	CONDENSATE FROM RHR HEAT EXCH.B002A TO 20-GBB-20 (AUX. BLDG.PORTION ONLY). P-1085B	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X		X				

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
020	CONDENSATE FROM RHR HEAT EXCH.B002A TO 18-GBB-20 (AUX. BLDG.PORION ONLY). P-1085B	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X		X				
020	CONDENSATE FROM RHR HEAT EXCH.B002A FROM 20-GBB-20 TO DBA-29(CONTAINMENT PORTION ONLY). P-1085B	500	480	220	100	375	212	E12	18.000	0.43	CS	X	X		X				
020	CONDENSATE FROM RHR HEAT EXCH.FROM 18-GBB-52 TO DBA-29 (CONTAINMENT PORTION ONLY). P-1085B	500	480	220	100	375	212	E12	14.000	0.37	CS	X	X		X				
021	BYPASS FOR RHR HEAT EXCHANGERSB001A & B002A FROM GBB-18 TO GBB-20. P-1085B	500	480	375	350	375	350	E12	18.000	0.43	CS	X	X		X				
022	STEAM FROM DBB-87 TO GBB-18. P-1085B	500	480	375	388	375	388	E12	18.000	0.43	CS	X	X		X				
023	BYPASS FOR VALVE F087A FROM DBB-69 TO GBB-22. P-1085B	500	480	375	388	375	388	E12	18.000	0.43	CS	X	X		X				
024	CONDENSATE SUPPLY TO RCIC FROM GBB-20 TO HBB-117. P-1085B	500	480	375	388	375	388	E12	3.000	0.21	CS				X		IWC-1221(a)(1		
024	CONDENSATE SUPPLY TO RCIC FROM GBB-20 TO HBB-117. P-1085B	500	480	375	388	375	388	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
025	CONDENSATE FROM GBB-24 TO HBB-154. P-1085B	500	480	375	388	375	388	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
027	CONDENSATE FROM GBB-18 TO HBD-7. P-1085B	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
028	DRW VENTS FROM GBB-58 TO HBD-1032. P-1085C	500	215	375	200	375	200	E12	0.750	0.15	CS				X		IWC-1221(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
028	DRW VENTS FROM GBB-58 TO HBD-1032. P-1085C	500	215	375	200	375	200	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
029	CONDENSATE FROM GBB-56 TO PSV F017A. P-1085B	200	360	175	350	175	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
030	RHR PUMP C002A-A SUCTION FROM HBB-81. P-1085B	200	360	175	350	175	350	E12	24.000	0.56	CS	X	X		X					
031	REACTOR RECIRC. WATER FROM DBA-64 TO GBB-30 (RHR LOOP A) AND GBB-32. P-1085B	200	360	175	350	175	350	E12	18.000	0.43	CS	X	X		X					
031	REACTOR RECIRC. WATER FROM DBA-64 TO GBB-30 AND GBB-32. P-1085B	200	360	175	350	175	350	E12	20.000	0.50	CS	X	X		X					
032	REACTOR RECIRC. WATER FROM GBB-31 TO GBB-73 AND RHR LOOP B. P-1085A P-1085B	200	360	175	350	175	350	E12	18.000	0.43	CS	X	X		X					
033	FPC & CU WATER FROM HBC-279 TO GBB-30. P-1085B	200	360	175	350	175	350	E12	18.000	0.43	CS	X	X		X					
034	FLUSHING WATER SUPPLY FROM HBD-833 TO GBB-31. P-1085B	200	360	175	350	175	350	E12	4.000	0.23	CS				X		IWC-1221(a)(1			
035	RHR JOCKEY PUMP C003A-A DIS-CHARGE TO GBB-18. P-1085B	500	480	380	344	380	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
035	RHR JOCKEY PUMP C003A-A DIS-CHARGE TO GBB-18. P-1085B	500	480	380	344	380	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1			
036	CONDENSATE FROM GBB-35 TO HBB-181. P-1085B	500	480	380	344	380	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
036	CONDENSATE FROM GBB-35 TO GBB-37. P-1085B	500	480	380	344	380	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1			
037	MINIMUM FLOW BYPASS FOR RHR PUMP A FROM GBB-18 TO HBB-120. P-1085B	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1			
037	MINIMUM FLOW BYPASS FOR RHR PUMP A FROM GBB-18 TO HBB-120 P-1085B	500	480			375	344	E12	0.750	.154	CS				X		IWC-1221(a)			SEE SFDs FOR NORMAL CONDITIONS
037	MINIMUM FLOW BYPASS FOR RHR PUMP A FROM GBB-18 TO HBB-120 P-1085B	500	480			375	344	E12	1.500	.200	CS				X		IWC-1221(a)			SEE SFDs FOR NORMAL CONDITIONS
039	DRW VENT FROM RHR PUMP C002A-ATO HBD-822. P-1085B	500	480	375	344	375	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
040	DRW VENT FROM RHR PUMP C002A-ATO HBD-820. P-1085B	200	360	175	350	175	350	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
041	DRW DRAIN FROM GBB-19 TO HBD-824. P-1085B	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
042	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER B001A TO 2-GBB-42. P-1085B	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
042	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER B001A TO 2-GBB-42. P-1085B	500	480	375	388	375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
042	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER B001A TO HBD-150. P-1085B	500	480	375	388	375	388	E12	2.000	0.21	CS				X		IWC-1221(a)(1			
043	CONDENSATE FROM GBB-22 TO PSV F055A. P-1085B	500	480	375	388	375	388	E12	6.000	0.28	CS				X					NO NDE REQUIRED, BUT INCL IN TOTAL COUNT SEE NOTE 7

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			PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
044	DRW DRAIN FROM GBB-20 TO 823. P-1085B	HBD-	500	480	375	388	375	388	E12	1.000	0.17	CS					X	IWC-1221(a)(1			
045	DRW DRAIN FROM SHELL SIDE OF RHR HEAT EXCHANGER B002A TO GBB-44. P-1085B		500	480	375	388	375	388	E12	1.000	0.17	CS					X	IWC-1221(a)(1			
046	CONDENSATE FROM GBB-20 TO HBC-278. P-1085B		500	480	375	344	375	344	E12	14.000	0.37	CS	X	X			X				
048	CONDENSATE FROM GBB-20 TO PSV F025A. P-1085B		500	480	375	212	375	212	E12	1.000	0.17	CS					X	IWC-1221(a)(1			
049	DRW DRAIN FROM SHELL SIDE OF RHR HEAT EXCHANGER B001A TO GBB-41. P-1085B		500	480	375	388	375	388	E12	1.000	0.17	CS					X	IWC-1221(a)(1			
050	FLUSHING WATER SUPPLY FROM HBD-390 TO GBB-114 AND GBB-20. P-1085B		500	480	375	350	375	350	E12	4.000	0.23	CS					X	IWC-1221(a)(1			
051	RHR TEST RETURN LINE FOR RHR PUMP A FROM GBB-20 TO HBB-82. P-1085B		500	480	375	350	375	350	E12	18.000	0.43	CS	X	X			X				
051	PRESSURE EQUALIZATION FROM E12F024A TO E12F428A P-1085B		500	480	375	350	375	350	E12	0.750	.154	CS					X	IWC-1221(a)(1			
052	CONTAINMENT SPRAY FEED HEADER FROM VALVE F028 TO GBB-53,54 AND 55 (DOWNSTREAM OF F028). P-1085B		125	200	0	80	110	130	E12	18.000	0.43	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
052	CONTAINMENT SPRAY FEED HEADER FROM GBB-20 TO VALVE F028 (UPSTREAM OF VALVE F028). P-1085B		500	480	375	212	375	212	E12	18.000	0.43	CS	X	X			X				
053	CONTAINMENT SPRAY HEADER FROM GBB-52 TO SPRAY NOZZLES. P-1085B		125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
053	CONTAINMENT SPRAY HEADER. P-1085B	125	200	0	80	50	130	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
054	CONTAINMENT SPRAY HEADER FROM GBB-52 TO SPRAY NOZZLES. P-1085B	125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
054	CONTAINMENT SPRAY HEADER. P-1085B	125	200	0	80	50	130	E12	6.000	0.28	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
055	CONTAINMENT SPRAY HEADER FROM GBB-52 TO SPRAY NOZZLES. P-1085B	125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
056	RHR JOCKEY PUMP C003A-A SUC- TION FROM GBB-30. P-1085B	200	360	175	350	175	350	E12	1.500	0.20	CS				X		IWC-1221(a)(1)		
057	CONDENSATE FROM GBB-31 TO PSV F005. P-1085B	200	360	175	350	175	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
058	RHR PUMP C002C-B DISCHARGE TO 12-GBB-58. P-1085C	500	215	375	200	375	200	E12	18.000	0.43	CS	X	X		X				
058	RHR PUMP DISCHARGE FROM 18- GBB-58 TO DBA-38. P-1085C	500	215	375	200	375	200	E12	12.000	0.37	CS	X	X		X				
059	CONDENSATE FROM GBB-62 TO HBC-277. P-1085C	100	215	20	95	75	185	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
060	CONDENSATE FROM GBB-58 TO PSV F025C. P-1085C	500	215	375	200	375	200	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
061	RHR PUMP C TEST RETURN TO HBB-75. P-1085C	500	215	375	200	375	200	E12	14.000	0.37	CS	X	X		X				
062	RHR PUMP C002C-B SUCTION FROM HBB-74. P-1085C	100	215	20	95	75	185	E12	24.000	0.56	CS	X	X		X				

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
062	RHR PUMP C002C-B SUCTIN FROM HBB-74 P-1085C	100	215	20	95	75	185	E12	0.750	.154	CS				X		IWC-1221(a)			
062	RHR PUMP C002C-B SUCTIN FROM HBB-74 P-1085C	100	215	20	95	75	185	E12	1.500	.200	CS				X		IWC-1221(a)			
063	CONDENSATE FROM FPC & CU SYS. (HBC-222) TO GBB-62. P-1085C	100	360	20	95	75	185	E12	18.000	0.43	CS	X	X		X					
064	BYPASS FOR VALVE F031C FROM GBB-58. P-1085C	500	215	375	185	375	185	E12	4.000	0.23	CS				X		IWC-1221(a)(1)			
065	CONDENSATE FROM GBB-66 TO PSV F017C. P-1085C	100	215	20	95	75	185	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
066	RHR JOCKEY PUMP C003C-B SUC-TION FROM GBB-62. P-1085C	100	215	20	95	75	185	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
067	RHR JOCKEY PUMP C003C-B DIS-CHARGE TO 4-GBB-64. P-1085C	500	215	375	185	375	185	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
067	RHR JOCKEY PUMP C003C-B DISCHARGE FROM 1-GBB-67 TO 1-GBB-67. P-1085C	500	215	375	185	375	185	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
068	BYPASS FROM RHR JOCKEY PUMP C002C FROM 1.5-GBB-68 TO GBB-62. P-1085C	100	215	50	95	50	185	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
068	BYPASS FOR RHR JOCKEY PUMP C FROM GBB-67 TO 1-GBB-68. P-1085C	100	215	50	95	50	185	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
070	DRW VENT FROM RHR PUMP C002C-B TO HBD-847. P-1085C	100	215	50	95	50	185	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			

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			PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
071	DRW VENT FROM RHR PUMP C HBD-843. P-1085C	TO	100	215	75	185	75	185	E12	0.750	0.15	CS					X	IWC-1221(a)(1			
072	MINIMUM FLOW BYPASS FOR RHR PUMP C FROM GBB-64 TO HBB-115. P-1085C		500	215	375	185	375	185	E12	4.000	0.23	CS					X	IWC-1221(a)(1			
073	RHR PUMP C002B-B SUCTION FROM HBB-73. P-1085A		200	360	175	200	175	200	E12	24.000	0.56	CS	X	X			X				
074	RHR PUMP C002B-B DISCHARGE RHR HEAT EXCHANGER B001B (UPSTREAM OF VALVE F047B). P-1085A	TO	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X			X				
074	RHR PUMP C002B-B DISCHARGE RHR HEAT EXCHANGER B001B (DOWNSTREAM OF VALVE F047B). P-1085A	TO	500	480	375	388	375	388	E12	18.000	0.43	CS	X	X			X				
075	BYPASS FOR LOOP B RHR HEAT EXCHANGERS FROM GBB-74 TO GBB-81. P-1085A		500	480	375	350	375	350	E12	18.000	0.43	CS	X	X			X				
076	STEAM FROM DBB-87 TO GBB-74. P-1085A		500	480	375	388	375	388	E12	18.000	0.43	CS	X	X			X				
076	FROM GBB-077 TO 1E12DO33B P-1085A		500	480	375	388	375	388	E12	8.000	.594	CS	X	X			X				
077	BYPASS FOR VALVE F087B FROM GBB-70 TO DBB-76. P-1085A		500	480	375	388	375	388	E12	18.000	0.43	CS	X	X			X				
077	FROM VALVES E12F051B AND E12F078B TO GBB-076 P-1085A		500	480	375	388	375	388	E12	8.000	.594	CS	X	X			X				
078	PIPING FROM RHR HEAT EXCHANGERB001B TO B002B. P-1085A		500	480	375	388	375	388	E12	20.000	0.50	CS	X	X			X				
078	PIPING FROM RHR HEAT EXCHANGERB001B TO B002B. P-1085A		500	480	375	388	375	388	E12	18.000	0.43	CS	X	X			X				

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP													
078	FROM HEAT EXCHANGER B001B UPSTREAM OF FX002 AND FX004 P-1085A	500	480			375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1			NORMAL PRESSURE AND TEMPERATURE IS PER SFDs
078	FROM HEAT EXCHANGER B001B DOWN STREAM OF FX002 AND FX004 P-1085A	500	480			375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1			NORMAL PRESSURE AND TEMPERATURE IS PER SFDs
079	DRW DRAIN FROM GBB-78 TO 850. P-1085A	HBD-500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
080	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER B001B TO 2- GBB-80. P-1085A	500	480	375	388	375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
080	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER FROM 3/4-GBB- 80 TO HBB-122. P-1085A	500	480	375	388	375	388	E12	2.000	0.21	CS				X		IWC-1221(a)(1			
080	VENT FROM SHELL SIDE OF RHR HEAT EXCHANGER B001B TO 2- GBB-80. P-1085A	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
081	CONDENSATE FROM RHR HEAT EXCH.FROM 20-GBB-81 TO 14-GBB- 81 (AUX. BLDG. PORTION ONLY) P-1085A	500	480	375	344	375	344	E12	18.000	0.43	CS	X	X		X					
081	CONDENSATE FROM RHR HEAT EXCH.FROM 18-GBB-81 TO DBA-28 (AUX. BLDG. PORTION ONLY). P-1085A	500	480	375	344	375	344	E12	14.000	0.37	CS	X	X		X					
081	CONDENSATE FROM RHR HEAT EXCH.B002B TO 18-GBB-81 (AUX. BLDG.PORTION ONLY). P-1085A	500	480	375	344	375	344	E12	20.000	0.50	CS	X	X		X					
081	CONDENSATE FROM RHR HEAT EXCH.FROM 18-GBB-81 TO DBA-28 (CONTAINMENT PORTION ONLY). P-1085A	500	480	220	100	375	212	E12	14.000	0.37	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
081	CONDENSATE FROM RHR HEAT EXCH.FROM 20-GBB-81 TO 14-GBB-81 (CONTAINMENT PORTION ONLY). P-1085A	500	480	220	100	375	212	E12	18.000	0.43	CS	X	X		X				
081	CONDENSATE FROM RHR HEAT EXCHANGER B002B TO 18-GBB-81 (CONTAINMENT PORTION ONLY). P-1085A	500	480	220	100	375	212	E12	20.000	0.50	CS	X	X		X				
082	DRW DRAIN FROM GBB-81 TO 851. P-1085A	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1		
083	RHR WATER FROM GBB-73 TO HBD-1050. P-1085A	200	360	175	200	175	200	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
084	CONDENSATE FROM GBB-81 TO DBA-32. P-1085A	500	480	375	350	375	350	E12	6.000	0.28	CS				X				NO NDE REQUIRED, BUT INCL. IN TOTAL COUNT SEE NOTE 7
085	FLUSHING WATER SUPPLY FROM HED-391 TO GBB-84 AND GBB-86. P-1085A	500	480	375	350	375	350	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
086	CONDENSATE FROM GBB-81 TO DBB-68. P-1085A	500	480	375	350	375	350	E12	12.000	0.37	CS	X	X		X				
087	CONDENSATE FROM GBB-118 TO PSV F025B. P-1085A	500	480	375	212	375	212	E12	1.000	0.17	CS				X		IWC-1221(a)(1		
088	FLUSHING WATER SUPPLY FROM HBD-831 TO GBB-120. P-1085A	500	480	375	212	375	212	E12	4.000	0.23	CS				X		IWC-1221(a)(1		
089	BYPASS FOR RHR PUMP B FROM GBB-81 TO HBB-76. P-1085A	500	480	375	350	375	350	E12	18.000	0.43	CS	X	X		X				
089	PRESSSSURE EQUALIZATION LINE FROM 1E12F024B TO 1E12F428B P-1085A	500	480	375	350	375	350	E12	0.750	.154	CS				X		IWC-1221(a)(1		

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP												
090	RHR WATER FROM 6-GBB-90 TO 4-GBB-90. P-1085A	500	480	375	344	375	344	E12	3.000	0.30	CS				X		IWC-1221(a)(1)		
090	RHR WATER FROM 3-GBB-90 TO HBB-117. P-1085A	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
090	RHR WATER FROM GBB-81 TO 3-GBB-90. P-1085A	500	480	375	344	375	344	E12	6.000	0.28	CS				X				NO NDE REQUIRED, BUT INCL. IN TOTAL COUNT SEE NOTE 7
091	CONDENSATE FROM GBB-90 TO HBB-114. P-1085A	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
092	CONDENSATE FROM GBB-76 TO PSV F055B. P-1085A	500	480	375	388	375	388	E12	6.000	0.28	CS				X				NO NDE REQUIRED, BUT INCL. IN TOTAL COUNT SEE NOTE 7
093	DRW DRAIN FROM RHR HEAT EXCHANGER B001B TO GBB-79. P-1085A	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
094	DRW DRAIN FROM RHR HEAT EXCHANGER B002B TO GBB-82. P-1085A	500	480	375	388	375	388	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
095	RHR WATER FOR LIQUID RADWASTE SYSTEM FROM GBB-20 TO HBD-788. P-1085B	500	480	375	388	375	388	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
096	CONDENSATE FROM GBB-81 TO HBC-208. P-1085A	500	480	375	350	375	350	E12	14.000	0.37	CS	X	X		X				
098	CONTAINMENT SPRAY HEADER FROM 8-GBB-98. P-1085A	125	200	0	80	50	130	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
098	CONTAINMENT SPRAY HEADER FROM 18-GBB-118 TO 4-GBB-98. P-1085A	125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
099	CONTAINMENT SPRAY HEADER FROM 8-GBB-99. P-1085A	125	200	0	80	50	130	E12	6.000	0.28	CS						IWC-1221(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
099	CONTAINMENT SPRAY HEADER FROM 18-GBB-118 TO 6-GBB-99. P-1085A	125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
100	CONTAINMENT SPRAY HEADER FROM GBB-118. P-1085A	125	200	0	80	50	130	E12	8.000	0.32	CS						IWC-1221(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
101	FLUSHING WATER SUPPLY FROM HBD-829 TO GBB-58. P-1085C	500	215	375	200	375	200	E12	4.000	0.23	CS				X		IWC-1221(a)(1)			
102	SUCTION VENT FROM RHR PUMP C002B-B TO HBD-848 AND DRW. P-1085A	200	360	175	350	175	350	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			
104	SEAL VENT FROM RHR PUMP C002B-B TO HBD-844 AND DRW. P-1085A	500	480	175	350	175	350	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			
105	CONDENSATE FROM GBB-108 TO PSV F015B. P-1085A	200	360	175	350	175	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
106	DRW DRAIN FROM GBB-73 TO HBD-1034. P-1085A	200	360	175	344	175	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
107	FPC & CU WATER FROM HBC-279 TO GBB-73. P-1085A	200	360	175	350	175	350	E12	18.000	0.43	CS	X	X		X					
108	RHR JOCKEY PUMP C003B-B SUC-TION FROM GBB-73. P-1085A	200	360	175	350	175	350	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
109	RHR JOCKEY PUMP C003B-B DIS-CHARGE FROM 1-GBB-109 TO 1-GBB-109 (DOWNSTREAM OF F084B). P-1085A	500	480	375	344	375	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
109	RHR JOCKEY PUMP DISCHARGE FROM PUMP TO 1.5-GBB-109 AND FROM 1.5-GBB-109 TO 18-GBB-74. P-1085A	200	480	375	344	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
109	RHR JOCKEY PUMP C003B-B DISCHARGE FROM 1-GBB-109 TO 1-GBB-109 (UPSTREAM OF F084B). P-1085A	200	480	375	344	375	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
110	MINIMUM FLOW BYPASS FOR RHR PUMP B FROM GBB-74 TO HBB-113. P-1085A	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1)			
110	MINIMUM FLOW BYPASS FOR RHR PUMP B FROM GBB-74 TO HBB-113. P-1085B	500	480			375	344	E12	1.500	.200	CS				X		IWC-1221(a)			SEE SFDs FOR NORMAL CONDITIONS
110	MINIMUM FLOW BYPASS FOR RHR PUMP B FROM GBB-74 TO HBB-113. P-1085B	500	480			375	344	E12	0.750	.154	CS				X		IWC-1221(a)			SEE SFDs FOR NORMAL CONDITIONS
111	BYPASS FOR RHR JOCKEY PUMP B FROM GBB-109 TO GBB-110 (UPSTREAM OF F273). P-1085A	200	480	375	344	375	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
111	BYPASS FOR RHR JOCKEY PUMP B FROM GBB-109 TO GBB-110 (DOWNSTREAM OF VALVE F273). P-1085A	500	480	375	344	375	344	E12	1.500	0.20	CS				X		IWC-1221(a)(1)			
112	CONDENSATE FROM GBB-74 TO HBD-1050. P-1085A	500	480	375	344	375	344	E12	4.000	0.23	CS				X		IWC-1221(a)(1)			
113	LOW POINT DRW DRAIN FROM GBB-30 TO HBD-1026. P-1085B	200	360	175	350	175	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
114	RHR PUMP A DISCHARGE FROM GBB-20 TO DBB-72. P-1085B	500	480	375	344	375	344	E12	12.000	0.37	CS	X	X		X					
1140	RHR HIGH PT. VENT FROM HT. EX. B001A DCP-84/0088. P-1085B	500	480	375	388	375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
1141	RHR HIGH PT. VENT FROM HT. EX. B001B DCP 84/0088. P-1085A	500	480	375	388	375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			
1142	ADHRS HT. EX. B003A & B DIS-CHARGE FROM GBC-25 TO GBB-58. P-1085C P-1085D	500	215	375	200	375	200	E12	10.000	0.36	CS				X				NO NDE REQUIRED, BUT INCL. IN TOTAL COUNT SEE NOTE 7	
1143	VALVE SEAT DRAIN FROM VALVE F004A TO HBB-81. P-1085B	0	0	0	0	0	0	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			
1144	VALVE SEAT DRAIN FROM VALVE F004B TO HBB-73. P-1085A	0	0	0	0	0	0	E12	0.750	0.15	CS				x		IWC-1221(a)(1)			
1147	TEST CONNECTION FROM GBB-37 TO GBD-1151 P-1085B	500	480			375	344	E12	0.750	.154	CS				X		IWC-1221(a)		SEE SFDs FOR NORMAL CONDITIONS	
1148	TEST CONNECTION FROM GBB-110 TO GBD-1152 P-1085A	500	480			375	344	E12	0.750	.154	CS				X		IWC-1221(a)		SEE SFDs FOR NORMAL CONDITIONS	
1149	TEST CONNECTION FROM GBB-62 TO GBD-1153 P-1085C	100	215	14.7	95	75	185	E12	0.750	.154	CS				X		IWC-1221(a)			
115	RHR PUMP A DISCHARGE FROM GBB-52 TO HBC-34. P-1085B	500	480	375	212	375	212	E12	12.000	0.37	CS	X	X		X					
116	HIGH POINT PIPING VENT FROM GBB-19 TO HBD-1. P-1085B	500	480	50	90	380	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1)			
117	DRW DRAIN FROM GBB-62 TO 1033. P-1085C	HBD-100	215	20	95	75	185	E12	1.000	0.17	CS				X		IWC-1221(a)(1)			
118	RHR CONTAINMENT SPRAY HEADER FROM GBB-81 TO VALVE F028. P-1085A	500	480	375	212	375	212	E12	18.000	0.43	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
118	CONTAINMENT SPRAY HEADER FROM VALVE F028 TO GBB-98, 99 AND 100. P-1085A	125	200	0	80	100	130	E12	18.000	0.43	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
119	TEST CONNECTION FROM GBB-118 TO GBD-137. P-1085A	125	200	0	80	100	130	E12	4.000	0.23	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
120	RHR PUMP "B" DISCHARGE FROM GBB-118 TO HBD-34. P-1085A	500	480	375	212	375	212	E12	12.000	0.37	CS	X	X		X				
121	HIGH POINT VENT FROM GBB-78 TO HBD-2. P-1085A	500	480	375	388	375	388	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
122	TEST CONNECTION FROM GCB-52 TO GBD-136. P-1085B	125	200	0	80	90	130	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
123	TEST CONNECTION FROM GBB-17. P-1061D	500	480	375	475	375	475	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
124	LOW POINT DRW DRAIN FROM GBB-18 TO HBD-1022. P-1085B	500	480	375	350	375	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
125	EXHAUST BLOWERS C002A-A AND B-B SUCTION FROM DBB-75 TO HBB-170. P-1097	300	575	20	400	35	500	E32	2.000	0.21	CS						IWC-1222(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
126	NUCLEAR STEAM AND AIR FROM FEN006,A,E,J,N TO HBB-176. P-1097	300	575	20	400	35	500	E32	1.000	0.17	CS						IWC-1222(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
127	TEST CONNECTIONS FROM GBB-52 AND GBB-118 TO GBD-149. P-1085A P-1085B	500	480	375	212	375	212	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
128	TEST CONNECTIONS FROM VALVES F028A-A AND B-B TO GBD-149. P-1085A P-1085B	500	480	375	212	375	212	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP												
130	LOW POINT DRAIN FROM GBB-74 TOHBD-1027. P-1085A	500	480	35	90	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
131	RHRC TO SUPPRESSION POOL CLEANUP SYS. FROM GBB-58 (UPSTREAM OF VALVE F021). P-1085C P-1099	350	200	175	140	275	200	E12	12.000	0.37	CS	X	X		X				
131	RHRC TO SUPPRESSION POOL CLEANUP SYS. FROM GBB-58 (DOWNSTREAM OF VALVE F021). P-1099	350	180	110	110	275	160	P60	12.000	0.37	CS				X		IWC-1222(c)		
132	MAINTENANCE DRAIN FROM GBB-68 TO HBD-1490. P-1085C	100	215	20	95	75	185	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
133	TEST CONNECTION (HIGH POINT) FROM GBB-68 TO HBD-1491. P-1085C	100	215	20	95	75	185	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
134	TEST CONNECTION FOR HYDRO FROM 1 1/2- GBB-134 TO HBD- 1492. P-1085A	190	215	50	95	190	212	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
134	TEST CONNECTION (HIGH POINT) FROM HYDRO FROM GBB-145 TO 3/4-GBB-134. P-1085A	190	215	50	95	190	212	E12	1.500	0.20	CS				X		IWC-1221(a)(1)		
135	TEST CONNECTION (HIGH POINT) FOR HYDRO FROM GBB-31 TO HBD-1486. P-1085B	200	360	175	350	175	350	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		
136	DRW DRAIN, FROM GBB-50 TO HBD- 1469, USED PRIOR TO SWITCHOVER TO RHR FLUSHING MODE. P-1085B	500	480	375	350	375	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
137	VENT/DRAIN LINE. P-1085B	500	480	0	0	375	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
138	DRW DRAIN, FROM GBB-85 TO HBD-1469, USED PRIOR TO SWITCHOVER TO RHR FLUSHING MODE. P-1085A	500	480	375	350	375	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
139	DRW DRAIN, FROM GBB-85 TO HBD-1469, USED PRIOR TO SWITCHOVER TO RHR FLUSHING MODE. P-1085A	500	480	375	350	375	350	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
141	FLUSHING WATER SUPPLY FROM HBD-834 TO GBB-115. P-1085B	500	480	375	212	375	212	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
142	RHR WATER FROM GBB-30 TO HBD-7. P-1085B	200	360	175	350	175	350	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
143	S.P.C.U. WATER FROM GBD-172 TO HBD-1168 CTMT. PEN. #85 PORTION. P-1099	350	180	110	110	275	160	P60	12.000	0.37	SS				X		IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
143	S.P.C.U. WATER FROM GBD-172 TO HBD-1168 EXCLUDING CTMT. PEN. #85. P-1099	350	180	110	110	275	160	P60	12.000	0.37	CS				X		IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
144	TEST CONNECTION FROM GBB-143. P-1099	350	180	110	110	275	160	P60	0.750	0.15	CS				X		IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
145	FROM RHR JOCKEY PUMP DISCHARGE TO DBB-134, HBD-1424, & DBB-87. P-1085A,B P-1112	200	215	50	95	190	212	E12	1.500	0.20	CS				X		IWC-1221(a)(1)		
145	VENT/DRAIN LINE. P-1085A	200	215	50	95	190	212	E12	1.000	0.17	CS				X		IWC-1221(a)(1)		
146	DRAIN FROM GBB-131 TO HBD-1170 P-1099	350	180	110	110	275	160	P60	2.000	0.21	CS				X		IWC-1222(a)		
148	TEST CONNECTION FROM GBB-145 TO HBD-1493. P-1112	190	215	50	95	190	212	E12	0.750	0.15	CS				X		IWC-1221(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
149	TEST CONNECTION FROM GBB-109 TO HBD-1498. P-1085A	500	480	375	344	375	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
150	TEST CONNECTION FROM GBB-111 TO HBD-1499. P-1085A	500	480	375	344	375	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
151	MAINTENANCE DRAIN FROM GBB-109 TO HBD-1500 AND DRW. P-1085A	500	480	375	344	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
152	MAINTENANCE DRAIN FROM GBB-111 TO HBD-1501 AND DRW. P-1085A	500	480	375	344	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
153	TEST CONNTECTION FROM GBB-36 TO HBD-1502. P-1085B	500	480	375	344	375	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
154	TEST CONNECTION FROM GBB-35 TO HBD-1503. P-1085B	500	480	375	344	375	344	E12	0.750	0.15	CS				X		IWC-1221(a)(1			
155	MAINTENANCE DRAIN FROM GBB-36 TO HBD-1504 AND DRW. P-1085B	500	480	375	344	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
156	MAINTENANCE DRAIN FROM GBB-35 TO HBD-1505 AND DRW. P-1085B	500	480	375	344	375	344	E12	1.000	0.17	CS				X		IWC-1221(a)(1			
158	PRESSURE SWITCH LINE ON ADS DISCHARGE FROM GBC-22. P-1077E	550	500	550	480	550	480	B21	0.750	0.15	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE	
159	PRESSURE SWITCH LINE ON NON-ADS DISCHARGE FROM GBD-1118. P-1077E	550	500	550	480	550	480	B21	0.750	0.15	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE	
174	TEST CONNECT FROM VALVE P60 F010-B. P-1099	350	180	110	110	275	160	P60	0.750	0.15	CS				X		IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
001	STARTING AIR FOR STANDBY DIESEL GENERATORS FROM F010A TO 4-GBC-1. P-1070A P-1070B	275	150	250	80	250	120	P75	3.000	0.30	CS								NO ISI OR PT REQ. SEE NOTE 2
001	STARTING AIR FOR STANDBY DIESEL GENERATORS FROM 3-GBC-1 TO STORAGE TANKS. P-1070A P-1070B	275	150	250	80	250	120	P75	4.000	0.23	CS								NO ISI OR PT REQ. SEE NOTE 2
002	AIR FROM STARTING AIR STORAGE TANKS TO 3-GBC-2. P-1070A P-1070B	275	150	250	80	250	120	P75	4.000	0.23	CS								NO ISI OR PT REQ. SEE NOTE 2
002	AIR FROM STARING AIR STORAGE TANKS FROM 4-GBC-2 TO GBC-4. P-1070A P-1070B	275	150	250	80	250	120	P75	3.000	0.30	CS								NO ISI OR PT REQ. SEE NOTE 2
004	STARTING AIR INLETS TO STANDBY DIESEL GENERATORS FROM GBC-2. P-1070A,B P-1070C,D	275	150	250	120	250	140	P75	3.000	0.30	CS								NO ISI OR PT REQ. SEE NOTE 2
004	VENT/DRAIN LINE. P-1070C P-1070D	275	150	250	120	250	140	P75	0.500	0.10	CS								NO ISI OR PT REQ. SEE NOTE 2
005	FIRE PROTECTION CO2 SYSTEM AUXILIARY BUILDING PEN. P-0035E	450	100	350	75	450	100	P64	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 3
005	FIRE PROTECTION CO2 SYSTEM AUX. BLDG. PENETRATION. P-0035E	450	100	350	75	450	100	P64	3.000	0.30	CS								NO ISI OR PT REQ. SEE NOTE 3
007	FROM GBD-167 TO GBD-168 IN THE S.P.C.U. SYSTEM. P-1099	350	180	110	110	275	160	P60	12.000	0.39	CS								NO ISI OR PT REQ. SEE NOTE 3
008	FROM GBD-171 TO GBD-172 IN THE S.P.C.U. SYSTEM. P-1099	350	180	110	110	275	160	P60	12.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 3
009	FROM GBC-4 TO GBD-1079. P-1070C P-1070D	275	150	250	80	250	120	P75	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 2
010	MAIN STEAM S/R VALVES (ADS ONLY) DISCHARGE PIPING FROM GE SUPPLIED PIPING TO EBC-1. P-1077E	550	500	550	480	550	480	B21	10.000	0.36	CS							X	This pipe may be 10, 12, 14 or 16 inch. OPEN ENDED PIPE SEE NOTE 6

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
011	VACUUM RELIEF LINES THROUGH VALVE F037 FOR GBC-10. P-1077E	550	500	550	480	550	480	B21	10.000	0.36	CS					X				OPEN ENDED PIPE, SEE NOTE 6
																	IWD-5240			
012	VACUUM RELIEF LINES THROUGH VALVE F078 FOR GBC-10. P-1077E	550	500	550	480	550	480	B21	10.000	0.36	CS					X				OPEN ENDED PIPE, SEE NOTE 6
																	IWD-5240			
015	DRAIN FROM GBC-8 TO GBD-165. P-1099	350	180	110	110	275	160	P60	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 3
016	DRAIN FROM GBC-7 TO GBD-165. P-1099	350	180	110	110	275	160	P60	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 3
017	FROM AIR RECEIVERS TO DIESEL ENGINE. P-1093B P-1093C	275	200	220	120	250	175	P81	2.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 2
018	DRAIN FROM GBC-17. P-1093B P-1093C	275	200	220	120	250	175	P81	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
019	DRAIN LINE OFF GBC-4 TO GBD-1098. P-1070C P-1070D	275	150	250	80	250	120	P75	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
020	DRAIN LINE OFF STARTING AIR STORAGE TANKS A,B,C & D TO GBD-141. P-1070A P-1070B	275	150	250	80	250	120	P75	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 2
021	AIR BLEED ON S/R VALVE DISCHARGE PIPE. P-1077E	550	500	550	480	550	480	B21	1.000	0.17	CS						IWD-1220(a)(1)			OPEN ENDED PIPE, SEE NOTE 6
																	IWD-5240			
021	AIR BLEED FROM S/R VALVE DISCHARGE PIPE OUTBOARD OF VALVE F501A. P-1077E	550	500	550	480	550	480	B21	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 1
022	PRESSURE INSTR. PIPING FROM ADS SRV'S DISCHARGE. P-1077E	550	500	550	480	550	480	B21	0.750	0.15	CS						IWD-1220(a)(1)			OPEN ENDED PIPE, SEE NOTE 6
																	IWD-5240			
023	DRAINS FROM ADHRS PUMPS COO5A/B TO 1-GBC-23. P-1085D	250	200	230	140	230	200	E12	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
023	FROM 3/4-GBC- TO HBD-1785. P-1085D	250	200	230	140	230	200	E12	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1
024	FROM ADHRS PUMPS C005A/B TO 8- GBC-24. P-1085D	250	200	230	140	230	200	E12	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 1
024	FROM ADHRS PUMPS FROM 8-GBC- 24 TO 8-GBC-24. P-1085D	250	200	230	140	230	200	E12	10.000	0.36	CS								NO ISI OR PT REQ. SEE NOTE 1
024	FROM ADHRS PUMPS FROM 6-GBC- 24 TO 10-GBC-24 AND FROM 10-GBC- 24 TO HEAT EXCHANGERS. P-1085D	250	200	230	140	230	200	E12	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 1
025	ADHRS HT. EX. B003A & B DIS- CHARGE TO 10-GBB-25. P-1085D	250	200	175	140	250	200	E12	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 1
025	FLUSH LINE TO 10-GBC-25. P-1085D	250	200	175	140	250	200	E12	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 1
025	VENT/DRAIN LINE. P-1085D	250	200	175	140	250	200	E12	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
025	ADHRS HT. EC. DISCHARGE FROM 8- GBC-25 TO GBB-1142. P-1085D	250	200	175	140	250	200	E12	10.000	0.36	CS								NO ISI OR PT REQ. SEE NOTE 1
025	INST. LINE FROM 10-GBB-2. P-1085D	250	200	175	140	250	200	E12	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1
026	DRAIN FROM GBC-24 TO HBD-1790. P-1085D	250	200	230	140	230	200	E12	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1
027	FROM ADHRS HT. EXS. B003A/B TO PSV F423A/B. P-1085D	250	200	230	140	230	200	E12	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
028	DRAINS FROM ADHRS HT. EXS. B003A/B TO HBD-1788. P-1085D	250	200	230	140	230	200	E12	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1
029	VENT FROM ADHRS HT. EXS. B003A/B TO HBD-1786 P-1085D	250	200	230	140	230	200	E12	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
030	VENT FROM GBC-24 TO HBD-1791. P-1085D	250	200	230	140	230	200	E12	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1
031	LOW POINT DRAIN FROM GBC-25 TO HBD-1792. P-1085D	250	200	175	140	250	200	E12	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 1
032	HIGH POINT VENT FROM GBC-25 TO HBD-1793. P-1085D	250	200	175	140	250	200	E12	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1
033	PRESSURE RELIEF LINE FROM STARTING AIR STOR. TANKS TO TO PSV F025. P-1070A P-1070B	275	150	250	80	250	120	P75	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2

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LINE NO.	SERVICE *CRITICAL SERVICES / P DWG NO.	DESIGN RATING		SERVICE CONDITIONS				SYS. NO.	S I Z E	THK. IN.	M A T	V O L	S O U T R	V T 1	V T 2	V T 3	CODE EXEMPT	OTHER EXAM REF.		NOTES
		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
001	SAMPLE SUPPLY LINE FROM HBC-82 TO 1" x 3/4" REDUCER TO D17J005 SAMPLE PANEL P-1061B	180	150	90	140	165	140	P41	0.750	0.15	SS				X		IWD-1220(a)(1			
001	SAMPLE SUPPLY LINE FROM 1" x 3/4" REDUCER TO D17J005 SAMPLE PANEL P-1061B	180	150	90	140	165	140	P41	1.000	0.13	SS				X		IWD-1220(a)(1			
002	SAMPLE RETURN LINE FROM D17J005 TO HBC-82 P-1061B	240	150	145	130	220	140	P41	1.000	0.13	SS				X		IWD-1220(a)(1			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
001	SERVICE AIR FROM JBD-38 TO JBD-62. CONTAINMENT PENETRATION #41. P-1068A	150	120	100	100	150	120	P52	3.000	0.21	CS					X	IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
002	SERVICE AIR FROM JBD-62 TO JBD-10. DRYWELL PENETRATION #363. P-1068A	150	120	100	100	150	120	P52	2.000	0.21	CS					X	IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
004	REACTOR WELL WATER TO AND FROM HCC-7 AND HBD-228. CONTAINMENT PENETRATION #54. P-1088C	85	150	70	125	85	150	G41	12.000	0.37	CS					X	IWC-1222(c)			ISI REQ. PT NOT REQ. SEE NOTE 4
006	FUEL POOL WATER FROM HCC-3 TO HBC-14. CONTAINMENT PENETRATION #58. P-1088C P-1088E	60	150	5	90	35	150	G41	8.000	0.32	CS					X	IWC-1222(c)			
007	FUEL POOL WATER FROM HBC-31 TO HBC-32. CONTAINMENT PENETRATION #57. P-1088C P-1088E	250	150	60	110	175	150	G41	8.000	0.32	CS					X	IWC-1222(c)			
008	LPCS PUMP C001-B SUCTION FROM 24-HBB-8 (STRAINER) TO VALVE F001 (THROUGH PENETRATION). P-1087	100	200	75	95	100	185	E21	20.000	0.37	CS	X	X			X				
008	LPCS PUMP SUCTION INSIDE SUPPRESSION POOL FROM STRAINER TO 20-HBB-8. P-1087	100	200	75	95	100	185	E21	24.000	0.37	CS	X	X			X				
008	LPCS PUMP C001-B SUCTION FROM VALVE F001 TO PUMP. P-1087	100	200	75	95	100	185	E21	24.000	0.37	CS	X	X			X				
009	LPCS MINIMUM FLOW AND TEST RETURN FROM GBB-14 TO SUPPRESSION POOL (UPSTREAM OF D004). P-1087	250	200	200	95	230	185	E21	14.000	0.37	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
009	LPCS MIN. FLOW AND TEST RETURN FROM GBB-14 TO SUPPRESSION POOL (DOWNSTREAM OF D004). P-1087	100	200	10	95	50	185	E21	14.000	0.37	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
009	LPCS MIN. FLOW AND TEST RETURN TMT. PEN. #32 PORTION. P-1087	100	200	10	95	50	185	E21	14.000	0.37	SS						IWC-5222 IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
010	PUMP BYPASS FLOW BETWEEN HBB-17 AND HBB-11. P-1087	100	200	75	95	100	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1)		
011	LPCS JOCKEY PUMP C002-A DISCHARGE TO GBB-9. P-1087	100	200	75	95	100	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1)		
012	LPCS JOCKEY PUMP C002-A SUCTION FROM HBB-8. P-1087	100	200	75	95	100	185	E21	1.500	0.20	CS				X		IWC-1221(a)(1)		
013	LPCS MIN FLOW FROM GBB-11 TO HBB-9. P-1087	250	200	200	95	230	185	E21	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
014	FUEL POOL COOLING AND CLEANUP WATER FROM HBC-227 TO HBB-8. P-1087	100	200	75	95	100	185	E21	18.000	0.37	CS	X	X		X				
015	DRW DRAIN FROM HBB-8 TO HBD-122. P-1087	100	200	75	95	100	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1)		
016	CONDENSATE FROM HBB-8 TO PSV-F031. P-1087	100	200	75	95	100	185	E21	0.750	0.15	CS				X		IWC-1221(a)(1)		
017	CONDENSATE FROM HBB-8 TO HBD-9. P-1087	100	200	75	95	100	185	E21	4.000	0.23	CS				X		IWC-1221(a)(1)		
018	CONDENSATE FROM PSV F018 THRU CONTAINMENT PENETRATION #71 TO SUPPRESSION POOL. P-1087	100	200	75	95	100	185	E21	2.000	0.34	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
019	HPCS PUMP C001-C SUCTION FROM 18-HCB-19. P-1086	100	200	75	95	100	185	E22	24.000	0.37	CS	X	X		X				
019	HPCS PUMP C001-C SUCTION FROM HCB-1 TO 24-HBB-19. P-1086	100	200	75	95	100	185	E22	18.000	0.37	CS	X	X		X				
020	DRW SUCTION VENT FROM HPCS PUMP C001-C TO HBD-209. P-1086	110	200	75	95	110	185	E22	0.750	0.15	CS				X		IWC-1221(a)(1)		
021	HPCS PUMP SUCTION FROM 24-HBB-21 (STRAINER) TO VALVE F015 (PENETRATION #25). P-1086	110	200	75	95	110	185	E22	20.000	0.37	CS	X	X		X				
021	HPCS PUMP SUCTION FROM VALVE F015 TO 24-HBB-19. P-1086	110	200	75	95	110	185	E22	24.000	0.37	CS	X	X		X				
021	HPCS PUMP SUCTION FROM STRAINER TO 20-HBB-21 (INSIDE SUPPRESSION POOL). P-1086	110	200	75	95	110	185	E22	24.000	0.37	CS	X	X		X				
021	PRESSURE EQUALIZATION LINE FOR 1E22F015 P-1086	110	200	75	95	110	185	E22	0.750	0.15	CS				X		IWC-1221(a)(1)		
022	DRW DRAINS FROM HBB-21 TO HBD-204. P-1086	110	200	75	95	110	185	E22	1.000	0.17	CS				X		IWC-1221(a)(1)		
023	VENTS FROM HBB-21 TO HBD-215. P-1086	110	200	75	95	110	185	E22	0.750	0.15	CS				X		IWC-1221(a)(1)		
024	TEST CONNECTION FROM LINE HBB-21 TO HBD-205. P-1086	110	200	75	95	110	185	E22	0.750	0.15	CS				X		IWC-1221(a)(1)		
025	CONDENSATE FROM HBB-21 TO HBD-6. P-1086	110	200	75	95	110	185	E22	4.000	0.23	CS				X		IWC-1221(a)(1)		
026	CROSSTIE BETWEEN HBB-27 AND HBB-25. P-1086	110	200	75	95	110	185	E22	1.500	0.20	CS				X		IWC-1221(a)(1)		

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP												
027	HPCS JOCKEY PUMP C003-C DIS-CHARGE TO DBB-15. P-1086	110	200	75	95	110	185	E22	1.000	0.17	CS					X	IWC-1221(a)(1)		
028	HPCS JOCKEY PUMP C003-C SUC-TION FROM HBB-19. P-1086	110	200	75	95	110	185	E22	1.500	0.20	CS					X	IWC-1221(a)(1)		
029	SUPPRESSION POOL WATER FROM 1-HBB-29 TO PSV F014. P-1086	110	200	75	95	110	185	E22	0.750	0.15	CS					X	IWC-1221(a)(1)		
029	SUPPRESSION POOL WATER FROM HBB-25 TO 3/4-HBB-29. P-1086	110	200	75	95	110	185	E22	1.000	0.17	CS					X	IWC-1221(a)(1)		
030	SUPPRESSION POOL DRAIN FROM STRAINER THROUGH CTMT. PEN. #69 (EXCLUDING PENETRATION). P-1065	25	185	7	95	25	185	P11	12.000	0.37	CS						IWC-1222(c)		PT NOT REQ, SEE NOTE 4
030	SUPPRESSION POOL DRAIN FROM STRAINER THROUGH PENETRATION #69 (PENETRATION PORTION). P-1065	25	185	7	95	25	185	P11	12.000	0.37	SS						IWC-1222(c)		PT NOT REQ, SEE NOTE 4
030	SUPPRESSION POOL DRAIN FROM VALVE F041 TO VALVE F131. P-1065	25	185	7	95	25	185	P11	12.000	0.37	CS						IWC-1222(c)		PT NOT REQ. SEE NOTE 4
031	HPCS TEST LINE FROM DBB-11 TO HBB-32. P-1086	220	200	170	95	200	185	E22	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
032	MINIMUM FLOW AND TEST RETURN FROM 12-HBB-32 TO SUPPRESSION POOL (UPSTREAM OF D005). P-1086	220	200	170	95	200	185	E22	14.000	0.37	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
032	MINIMUM FLOW AND TEST RETURN FROM VALVE FO23 TO 14-HBB-32. P-1086	220	200	170	95	200	185	E22	12.000	0.37	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
032	MIN. FLOW/TEST RETURN FROM 12-HBB-32 TO POOL (EXC. CTMT. PEN. #27, DOWNSTREAM OF D005) P-1086	100	200	10	95	40	185	E22	14.000	0.37	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
032	MIN. FLOW/TEST RETURN FROM HBB-32 TO SUPPRESSION POOL CTMT. PEN. #27 PORTION. P-1086	12-100	200	10	95	40	185	E22	14.000	0.37	SS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
033	CONDENSATE FROM PSV F035 FROM 1-HBB-33 TO HBB-31. P-1086	220	200	170	95	200	185	E22	1.500	0.20	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
033	CONDENSATE FROM PSV F035 TO 1.5-HBB-31. P-1086	220	200	170	95	200	185	E22	1.000	0.17	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
034	CONDENSATE FROM HBD-337 TO HBD-43 CTMT. PEN. #56 PORTION. P-1065	125	150	75	110	100	130	P11	6.000	0.28	SS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
034	CONDENSATE FROM HBD-337 TO HBD-43. (EXCLUDING CTMT. PEN. #56). P-1065	125	150	75	110	100	130	P11	6.000	0.28	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
035	COMPONENT COOLING WATER FROM JBD-309 TO HBD-394 CONTAINMENT PENETRATION #44. P-1063B	125	180	70	95	100	100	P42	10.000	0.36	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
036	COMPONENT COOLING WATER FROM HBD-395 TO HBD-396. DRYWELL PENETRATION #329. P-1063B	125	330	70	95	100	105	P42	8.000	0.32	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
037	COMPONENT COOLING WATER FROM HBD-409 TO HBD-430. DRYWELL PENETRATION #330. P-1063B	125	330	60	105	100	110	P42	8.000	0.32	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
038	COMPONENT COOLING WATER FROM HBD-430 TO JBD-310. CONTAINMENT PENETRATION #45. P-1063B	125	180	35	130	100	150	P42	10.000	0.36	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
039	DRYWELL CHILLED WATER FROM HBD-1576 TO HBD-522. CTMT. PENETRATION #37. P-1072B	200	125	140	50	170	100	P72	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
040	DRYWELL CHILLED WATER FROM HBD-520 TO HBD-1573. CTMT. PENETRATION #36. P-1072B	200	125	140	50	170	100	P72	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
040	DRYWELL CHILLED WATER FROM HBD-522 TO HBD-1573. CONTAINMENT PENETRATION #36. P-1072B	200	125	140	50	170	100	P72	5.000	0.25	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
041	DRYWELL CHILLED WATER FROM HBD-522 TO HBD-523. DRYWELL PENETRATION #332. P-1072B	200	125	140	50	170	100	P72	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
041	DRYWELL CHILLED WATER FROM HBD-522 TO HBD-523. DRYWELL PENETRATION #332. P-1072B	200	125	140	50	170	100	P72	5.000	0.25	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
042	DRYWELL CHILLED WATER FROM HBD-521 TO HBD-520. DRYWELL PENETRATION #331. P-1072B	200	125	140	75	170	100	P72	5.000	0.25	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
042	DRYWELL CHILLED WATER FROM HBD-521 TO HBD-520. DRYWELL PENETRATION #331. P-1072B	200	125	140	75	170	100	P72	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
043	CHILLED WATER FROM JBD-734 TO JBD-640. CONTAINMENT PENETRATION #39. P-1109D	150	150	115	65	120	100	P71	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
044	CHILLED WATER FROM JBD-654 TO JBD-727. CONTAINMENT PENETRATION #38. P-1109D	150	150	115	50	120	65	P71	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
045	INSTRUMENT AIR FROM HBD-1092 TO HBD-1092. CONTAINMENT PENETRATION #42. P-1067A	150	150	100	100	150	120	P53	2.500	0.20	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
049	RCIC PUMP C001 SUCTION FROM SUCTION STRAINER. D012. TO VALVE F031 (EXC. PEN #28). P-1083A	125	200	75	140	100	170	E51	6.000	0.28	CS					X	IWC-1222(c)		
049	RCIC PUMP C001 SUCTION FROM VALVE F031 TO PUMP. P-1083A	125	200	75	140	100	170	E51	6.000	0.28	CS					X	IWC-1222(c)		
049	RCIC PUMP SUCTION FROM SUCTION STRAINER D012, PENETRATION #28 PORTION. P-1083A	125	200	75	140	100	170	E51	6.000	0.28	SS					X	IWC-1222(c)		
049	PRESSURE EQUALIZATION LINE FROM 1E51F031 P-1083A	125	200	75	140	100	170	E51	0.750	.154	CS					X	IWC-1222(a)		
050	TEST CONNECTION FROM HBB-49 TO HBD-682. P-1083A	125	170	75	140	100	170	E51	0.750	0.15	CS					X	IWC-1222(a)		
051	DRW DRAIN FROM HBB-49 TO HBD-681. P-1083A	125	170	75	140	100	170	E51	1.000	0.17	CS					X	IWC-1222(a)		
051	DRAIN FROM HBB-167 TO F240 P-1083A	150	500	10	135	25	135	E51	1.000	0.17	CS						IWC-1222(a)		PT NOT REQ, SEE NOTE 4
052	CONDENSATE FROM 4-HBB-52 TO 6-HBB-49. P-1083A	125	170	75	140	100	170	E51	6.000	0.28	CS					X	IWC-1222(c)		
052	CONDENSATE FROM GBB-90 TO 6-HBB-52. P-1083A P-1085A	125	170	75	140	100	170	E51	4.000	0.23	CS					X	IWC-1222(a)		
053	STEAM FROM RCIC TURBINE C002 TO VALVE F040. P-1083A P-1083B	150	270	10	240	160	270	E51	16.000	0.37	CS	X	X			X			
053	STEAM FROM RCIC TURBINE C002 FROM TURBINE TO 16-HBB-53. P-1083B	150	270	10	240	160	270	E51	8.000	0.32	CS					X			NO NDE REQUIRED, BUT INCL. IN TOTAL COUNT SEE NOTE 7
053	STEAM FROM RCIC TURBINE FROM VALVE F040 TO VALVE F068. P-1083A	150	270	10	240	160	270	E51	20.000	0.37	CS	X	X			X			

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		PSIG	TEMP	NORMAL PSIG	TEMP PSIG	MAXIMUM PSIG	TEMP PSIG												
053	STEAM FROM RCIC TURBINE FROM VALVE F068 TO SPARGER. P-1083A	150	270	10	240	160	270	E51	20.000	0.37	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
054	TEST CONNECTION FROM HBB-53 TO HBD-680. P-1083A	150	270	10	240	160	270	E51	0.750	0.15	CS				X		IWC-1222(a)		
057	CONDENSATE FROM HCB-8 TO HBB-52. P-1083A	125	170	75	140	100	170	E51	6.000	0.28	CS				X		IWC-1222(c)		
058	CONDENSATE FROM HBB-49 TO PSV F017. P-1083A	125	170	75	140	100	170	E51	0.750	0.15	CS				X		IWC-1222(a)		
060	CONDENSATE FROM DBB-49 TO SUPPRESSION POOL. P-1083A	100	170	50	140	100	170	E51	2.000	0.34	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
061	FROM RUPTURE DISK D001 THRU END CAP. P-1083B	150	270	10	240	160	270	E51	16.000	0.37	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
061	STEAM HEADER FROM HBB-53 TO RUPTURE DISKS D001. P-1083B	150	270	10	240	160	270	E51	16.000	0.37	CS	X	X		X				
062	VENT FROM HBB-61. P-1083B	150	270	10	240	160	270	E51	16.000	0.37	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
063	VENT FROM HBB-61 THRU RO D008. P-1083B	150	270	10	240	160	270	E51	1.000	0.17	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
064	DRAIN FROM RCIC TURBINE C002 TO HBB-66. P-1083B	150	270	10	240	160	270	E51	0.750	0.15	CS				X		IWC-1222(a)		
065	STEAM FROM DBB-62 TO HBB-66. P-1083B	150	270	10	240	160	270	E51	0.750	0.15	CS				X		IWC-1222(a)		
066	STEAM HEADER FROM HBB-65 TO DRAIN POT HBB-53. P-1083B	150	270	10	240	160	270	E51	1.000	0.17	CS				X		IWC-1222(a)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
067	CONDENSATE FROM DRAIN POT HBB-53 TO HBD-697. P-1083B	150	270	10	240	160	270	E51	1.000	0.17	CS				X		IWC-1222(a)			
067	CONDENSATE FROM DRAIN POT FROM 1-HBB67 TO 1-HBB-67. P-1083B	150	270	10	240	160	270	E51	2.000	0.21	CS				X		IWC-1222(a)			
069	TEST CONNECTION FROM HBB-67 TO HBD-698. P-1083B	150	270	10	240	160	270	E51	0.750	0.15	CS				X		IWC-1222(a)			
070	CONDENSATE FROM DBB-47 TO LUBEOIL COOLER. P-1083B	100	140	60	140	100	140	E51	2.000	0.21	CS				X		IWC-1222(a)			
070	INSTRUMENT LINE TO 2-HBB-70. P-1083B	100	140	60	140	100	140	E51	1.000	0.17	CS				X		IWC-1222(a)			
071	CONDENSATE FROM HBB-70 TO PSV F018. P-1083B	100	140	60	140	100	140	E51	1.500	0.20	CS				X		IWC-1222(a)			
072	COOLING WATER FROM LUBE OIL COOLER TO RCIC PUMP SUCTION. P-1083A	100	140	60	140	100	140	E51	2.000	0.21	CS				X		IWC-1222(a)			
073	RHR PUMP SUCTION FROM SUPPRESSION POOL PEN. #12 FROM GBB- 73 TO 24-HBB-73. P-1085A	100	200	25	120	75	185	E12	20.000	0.37	CS	X	X		X					
073	RHR PUMP SUCTION FROM SUPPRESSION POOL PEN. #12. FROM 20-HBB-73 TO STRAINER. P-1085A	100	200	25	120	75	185	E12	24.000	0.37	CS	X	X		X					
074	RHR PUMP C002C-B SUCTION FROM 24-HBB-74 TO GBB-62. CTMT. PEN. #13. P-1085C	100	200	25	120	75	185	E12	20.000	0.37	CS	X	X		X					
074	RHR PUMP C002C-B SUCTION FROM STRAINER TO 20-HBB-74. CTMT. PEN. #13. P-1085C	100	200	25	120	75	185	E12	24.000	0.37	CS	X	X		X					

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
078	CONDENSATE FROM PSV F036 TO SUPPRESSION POOL. CONTAINMENT PENETRATION #73. P-1085A	125	170	69	140	75	140	E12	6.000	0.28	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
079	CONDENSATE FROM PSV F055B TO SUPP. POOL. FROM 8-HBB-79 TO POOL (EXCLUDING PEN 48). P-1085A	150	480	0	390	50	475	E12	10.000	0.36	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
079	CONDENSATE FROM PSV F055B TO SUPPRESSION POOL CTMT. PEN# 48 FROM VALVE F055B TO 10-HBB-79. P-1085A	150	480	0	390	50	475	E12	8.000	0.32	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
079	CONDENSATE FROM PSV F055B TO SUPPRESSION POOL (PEN. #48 PORTION). P-1085A	150	480	0	390	50	475	E12	10.000	0.36	SS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
080	CONDENSATE FROM PSV F025B TO SUPPRESSION POOL. P-1085A	170	350	0	120	170	212	E12	1.000	0.35	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
081	RHR PUMP C002A-A SUCTION FROM 24-HBB-81 TO GBB-30 CTMT. PENETRATION #11. P-1085B	100	200	25	185	75	185	E12	20.000	0.37	CS	X	X			X				
081	RHR PUMP C002A-A SUCTION FROM STRAINER TO 20-HBB-81 CTMT. PENETRATION #11. P-1085B	100	200	25	185	75	185	E12	24.000	0.37	CS	X	X			X				
082	RHR PUMP C002A-A MINIMUM FLOW TEST RET. FROM GBB-51 TO 12- HBB-82 CTMT. PEN. #23. P-1085B	100	200	25	185	99	185	E12	18.000	0.37	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
082	RHR PUMP C002A-A MIN. FLOW TEST RETURN FROM 18-HBB-82 TO POOL CTMT. PEN. #23. P-1085B	100	200	25	185	99	185	E12	12.000	0.37	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			
082	PRESSURE EQUALIZATION LINE FROM E12F428A TO 1.5 HBB-082 P-1085B	100	200	25	185	99	185	E12	0.750	.154	CS						IWC-1221(a)(1)		OPEN ENDED PIPE, SEE NOTE 9	
																	IWC-5222			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP										EXAM	REF.	
083	CONDENSATE FROM PSV F005 TO SUPPRESSION POOL. CONTAINMENT PENETRATION #76B. P-1085B	160	360	0	140	135	344	E12	1.000	0.35	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
084	CONDENSATE FROM PSV F055A TO SUPPRESSION POOL FROM 8-HBB-84 TO POOL (EXCLUDING PEN. 77). P-1085B	150	480	0	390	50	475	E12	10.000	0.36	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
084	CONDENSATE FROM PSV F055A TO SUPPRESSION POOL FROM VALVE F055A TO 10-HBB-84. P-1085B	150	480	0	390	50	475	E12	8.000	0.32	CS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
084	CONDENSATE FROM PSV F055A TO SUPPRESSION POOL PENETRATION #77 PORTION. P-1085B	150	480	0	390	50	475	E12	10.000	0.36	SS						IWC-1221(d)		OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222		
085	AIR FROM DRYWELL TO CHARCOAL FILTER TRAINS. DRYWELL PENETRATION #347. P-1101	30	340	0	150	0	185	M51	20.000	0.37	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
087	AIR FROM PURGE FANS TO DRYWELL PENETRATION #345. P-1101	30	340	0	100	0	100	M41	20.000	0.37	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
089	AIR FROM PURGE FANS TO CONTAINMENT, CTMT. PEN. #34. P-1100A	15	185	0	100	0	100	M41	20.000	0.37	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
090	TEST CONNECTION FROM HBB-89. P-1100A	15	185	0	100	0	100	M41	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
091	AIR FROM CTMT. COOLING SYS. CHARCOAL FILTERS, VALVE F034 TO VALVE F035(CTMT. PEN. #35). P-1100A	15	185	0	100	0	150	M41	20.000	0.37	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
092	TEST CONNECTION FROM HBB-91. P-1100A	15	185	0	100	0	150	M41	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
093	AIR FROM PURGE RAD. DETECTION SYS. TO CONTAINMENT EXHAUST CHARCOAL FILTER DRAIN. P-1100B	15	185	0	100	0	150	M41	6.000	0.28	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
094	TEST CONNECTION FROM HBB-93. P-1100B	15	185	0	100	0	150	M41	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
095	DRYWELL EQUIP. DRAIN SUMP PUMPS DISCH. FROM VALVE F004 TO 3-HBB-95, DRYWELL PEN. #348 P-1094A	150	150	30	120	35	120	P45	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
095	DRYWELL EQUIP. DRAIN SUMP PUMPDISCH. FROM 4-HBB-95 TO VALVE F009, DRYWELL PEN. #348. P-1094A	150	150	30	120	35	120	P45	3.000	0.21	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
096	DRYWELL FLOOR DRAIN SUMP PUMP DISCH. FROM 3-HBB-96 TO VALVE F004 (DRYWELL PEN. #349). P-1094A	150	150	25	135	30	135	P45	4.000	0.23	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
096	DRYWELL FLOOR DRAINS SUMP PUMP DISCH. TO 4-HBB-96 FROM VALVE F003 (DRYWELL PEN. #349). P-1094A	150	150	25	135	30	135	P45	3.000	0.21	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
101	CONTAINMENT FLOOR DRAIN SUMP PUMPS DISCHARGE FROM HBD-673 (CTMT. PENETRATION #51). P-1094B	150	150	25	105	35	130	P45	6.000	0.28	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
102	CONTAINMENT EQUIP. DRAIN SUMP PUMPS DISCHARGE FROM HBD-753 (CTMT. PENETRATION. #50). P-1094B	150	150	30	120	35	130	P45	6.000	0.28	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
105	TEST CONNECTION FROM HBB-45. P-1067A	150	150	100	100	150	120	P53	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
107	TEST CONNECTION FROM HBB-43. P-1109D	150	150	115	65	120	65	P71	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
108	TEST CONNECTION FROM HBB-44. P-1109D	150	150	115	50	120	65	P71	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP												
109	TEST CONNECTION FROM HBB-1. P-1068A	150	120	100	100	150	120	P52	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
110	TEST CONNECTION FROM HBB-2. P-1068A	150	120	100	100	150	120	P52	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4
111	CONDENSATE FROM HBD-355 TO HBD-942. DRYWELL PENETRATION #333. P-1078A	150	180	90	110	150	130	B33	4.000	0.23	CS				X		IWC-1222(a)		
112	LPCS PUMP C001-A SUCTION VENT TO DRW DRAIN. P-1087	100	200	75	95	100	185	E21	0.750	0.15	CS				X		IWC-1221(a)(1)		
113	MINIMUM FLOW BYPASS FOR RHR PUMP B FROM GBB-110 TO HBB-76. P-1085A	100	200	3	120	50	185	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
114	CONDENSATE FROM GBB-91 TO HBB-113. P-1085A	100	200	6	120	50	185	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
115	MINIMUM FLOW BYPASS FOR RHR PUMP C FROM GBB-72 TO HBB-75. P-1085C	100	200	55	120	75	185	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
117	CONDENSATE FROM GBB-24 TO HBB-52 AND GBB-90. P-1085A P-1085B	125	170	75	140	75	140	E51	4.000	0.23	CS				X		IWC-1222(a)		
118	CONDENSATE FROM HBB-117 TO PSV F036. P-1085A	125	170	75	140	75	140	E12	4.000	0.23	CS				X		IWC-1221(a)(1)		
120	MINIMUM FLOW BYPASS FOR RHR PUMPS A FROM GBB-37 TO HBB-82. P-1085B	100	400	3	120	50	344	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
122	VENT FOR RHR HEAT EXCHANGER B001B FROM GBB-80 TO HBB-79. P-1085A	150	215	0	80	150	185	E12	2.000	0.21	CS						IWC-1221(d) IWC-5222		PT NOT REQ, SEE NOTE 4

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP													
123	CONDENSATE FROM PSV F025A TO SUPPRESSION POOL. CONTAINMENT PENETRATION #76A. P-1085B	170	350	0	120	170	212	E12	1.000	0.35	CS						IWC-1221(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
124	TEST CONNECTION FROM HBB-7 TO HBD-853. P-1088C	250	150	70	125	175	150	G41	0.750	0.15	CS				X		IWC-1222(a)			
128	TEST CONNECTION FROM HBB-38. P-1063B	125	180	35	130	100	150	P42	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
129	TEST CONNECTION FROM HBB-35. P-1063B	125	180	70	95	100	100	P42	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
130	TEST CONNECTION FROM HBB-39 TO HBD-862. P-1072B	200	125	140	50	170	100	P72	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
135	DRYWELL PURGE COMPRESSOR DISCHARGE FROM 12-HBB-135 TO VALVE F003A&B. P-1091	20	300	10	150	10	185	E61	10.000	0.36	CS				X		IWC-1222(c)			
135	DRYWELL PURGE COMPRESSORS C001A-A & B-B TO DRYWELL FROM VALVE F003A&B TO DRYWELL. P-1091	20	200	10	150	10	185	E61	10.000	0.36	CS						IWC-1222(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
135	DRYWELL PURGE COMPRESSORS C001A-A & B-B DISCHARGE FROM 12-HBB-190 TO 10-HBB-135. P-1091	20	200	10	150	10	185	E61	12.000	0.37	CS				X		IWC-1222(c)			
136	VACUUM BREAKER LINES FOR DRYWELL PURGE COMPRESSORS FROM VALVE F001A,B TO HBB-135. P-1091	25	185	0	90	20	185	E61	10.000	0.36	CS				X		IWC-1222(c)			
136	VACUUM BREAKER LINES FOR DRYWELL PURGE COMP. FROM ATM. TO VALVE F001A,B. P-1091	25	185	0	90	20	185	E61	10.000	0.36	CS						IWC-1222(d)			OPEN ENDED PIPE, SEE NOTE 9
																	IWC-5222			
137	CONTAINMENT AIR FROM HBD-921 TO DRYWELL FROM VALVE F007 TO VALVE F020 (PENETRATION #341). P-1091	10	120	0	90	5	105	E61	8.000	0.32	CS						IWC-1222(c)			ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	NORMAL PSIG	NORMAL TEMP	MAXIMUM PSIG	MAXIMUM TEMP												
137	CONTAINMENT AIR FROM VALVE F007 THROUGH PENETRATION #341. P-1091	10	120	0	90	5	105	E61	8.000	0.32	CS						IWC-1222(d)		OPEN ENDED PIPE
																	IWC-5222		
138	AIR FROM CONTAINMENT TO VALVES F004A,B AND FROM VALVE F005A TO VALVE F005B. P-1091	10	185	0	90	1	185	E61	10.000	0.36	CS						IWC-1222(d)		OPEN ENDED PIPE
																	IWC-5222		
138	AIR FROM CONTAINMENT FROM VALVE F004A,B TO VALVE F005A,B. P-1091	10	185	0	90	1	185	E61	10.000	0.36	CS				X		IWC-1222(c)		
139	CONTAINMENT AIR FROM HBB-138 TO DRYWELL. DRYWELL PENETRATION #340. P-1091	10	185	0	90	1	185	E61	10.000	0.36	CS						IWC-1222(d)		OPEN ENDED PIPE
																	IWC-5222		
140	CONTAINMENT PURGE AIR FROM HBD-923 TO HBD-924. CONTAINMENT PENETRATION #65. P-1091	20	185	0	90	10	185	E61	6.000	0.28	CS						IWC-1222(c)		ISI REQ. PT NOT REQ. SEE NOTE 4
141	SGTS CASING DRAIN LINES. P-1102A	150	500	-1	80	1	150	T48	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 2
142	SSW FROM HBC-302 TO HBC-303. CONTAINMENT PENETRATION #89. P-1061B	180	150	90	90	135	90	P41	2.000	0.21	CS				X		IWC-1222(a)		
143	SSW FROM 2-HBB-143 TO 2-HBB-143, CTMT. PEN. #90. P-1061B	180	150	75	105	135	105	P41	3.000	0.21	CS				X		IWC-1222(a)		
143	SSW FROM HBC-306 TO HBC-307. CONTAINMENT PENETRATION #90. P-1061B	180	150	75	105	135	105	P41	2.000	0.21	CS				X		IWC-1222(a)		
145	TEST CONNECTION FROM HBB-142. P-1061B	180	150	90	90	135	90	P41	0.750	0.15	CS				X		IWC-1222(a)		
146	SSW FROM HBC-312 TO HBC-315. CONTAINMENT PENETRATION #92. P-1061D	180	150	90	90	135	90	P41	2.000	0.21	CS				X		IWC-1222(a)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
147	TEST CONNECTION FROM HBB-146. P-1061D	180	150	90	90	135	90	P41	0.750	0.15	CS					X	IWC-1222(a)			
148	SSW FROM HBC-318 TO HBC-313. CONTAINMENT PENETRATION #91. P-1061D	180	150	75	105	135	105	P41	2.000	0.21	CS					X	IWC-1222(a)			
150	FROM F073A TO 10 HBB-84 P-1085B	150	480	0	390	50	475	E12	2.000	.218	CS						IWC-1222(a) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9; SEE NOTE 4
151	CONDENSATE FROM PSV F017B TO HBB-73. P-1085A	100	200	25	185	75	185	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
152	BACKWASH TRANSFER PUMP DIS- CHARGE FROM HBD-1010 TO HBD- 1013. CTMT. PENETRATION #49. P-1080B	150	150	35	100	110	140	G36	4.000	0.23	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
154	CONDENSATE FROM GBB-25 TO HBB-120. P-1085B	100	200	2	120	50	185	E12	4.000	0.23	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
155	MAKEUP WATER, FROM 2-HBB-155 TO 2-HBB-155, CTMT. PEN. #86. P-0033B	100	100	65	65	75	85	P21	4.000	0.23	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
155	MAKEUP WATER FROM JCD-36 TO JCD-33. CTMT. PENETRATION #86. P-0033B	100	100	65	65	75	85	P21	2.000	0.21	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
156	CONDENSATE FROM PSV F017A TO HBB-81. P-1085B	140	350	0	90	140	344	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE
157	DRW DRAIN FROM RCIC TURBINE DRAIN POT ON HBB-53 TO HBB-67. P-1083B	150	500	10	240	160	270	E51	1.000	0.17	CS					X	IWC-1222(a)			
158	HIGH POINT VENT FROM HBB-57 TO HBD-686. P-1083A	125	170	75	140	100	170	E51	0.750	0.15	CS					X	IWC-1222(a)			
160	DRW DRAIN FROM HBB-32 TO HBD-687. P-1086	220	200	170	95	200	185	E22	1.000	0.17	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
161	DRW DRAIN FROM HBB-120 TO HBD-1023. P-1085B	100	200	3	120	50	185	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE	
162	SUPPRESSION POOL MAKEUP FROM VALVE F002 TO SUPPRESSION POOL. P-1096	50	125	0	80	31	80	E30	30.000	0.37	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
162	SUPPRESSION POOL MAKEUP FROM HCB-26 THRU VALVE F002. P-1096	20	125	17	80	18	80	E30	30.000	0.37	CS				X		IWC-1222(c)			
163	VACUUM BREAKER LINES FROM VALVES F103A&B TO 10-HBB-79 & 84. P-1085A P-1085B	10	150	0	140	0	140	E51	1.500	0.20	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
163	VACUUM BREAKER LINES ON RHR RHR SYS. FROM HBB-167 TO VALVE F103A,B. P-1083A P-1085A,B	10	150	0	140	0	140	E51	1.500	0.20	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	
164	THERMAL RELIEF FOR VALVES F001&2 FROM BETWEEN VALVE F001& F002 TO INLET SIDE OF F001. P-1096	20	125	17	80	17	80	E30	0.750	0.15	CS				X		IWC-1222(a)			
165	DISCHARGE FROM PSV F014 TO HBB-21. P-1086	100	200	75	95	100	185	E22	1.000	0.17	CS						IWC-1221(a)(1) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
166	DRW DRAIN FROM HBB-113 TO HBD-1051. P-1085A	125	200	3	120	50	185	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
167	AIR FROM SUPPRESSION POOL TO VALVE F078. P-1083A	150	500	10	135	25	135	E51	1.500	0.20	CS						IWC-1222(d)		ISI REQ. PT NOT REQ. SEE NOTE 4	
167	AIR FROM SUPPRESSION POOL FROM VALVE F078 TO HBB-53. P-1083A	150	500	10	135	25	135	E51	2.500	0.20	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	
168	TEST CONNECTIONS FROM HBB-167 TO HBD-1054. P-1083A	150	500	10	135	25	135	E51	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
169	AIR FROM AUX. BLDG. TO HBB-170 P-1097	150	150	5	150	35	150	E32	4.000	0.23	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
170	EXHAUST BLOWER FANS SUCTION HEADER FROM GBB-125 TO 2-HBB- 170. P-1097	150	200	5	196	35	196	E32	4.000	0.23	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
170	EXHAUST BLOWER FANS SUCTION FROM 4-HBB-170 TO BLOWER. P-1097	150	200	5	196	35	196	E32	2.000	0.21	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
172	AIR FROM DBB-118 TO AUX. BLDG. P-1097	150	575	5	500	100	550	E32	2.000	0.21	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
174	AIR FROM DBB-121 TO AUX. BLDG. P-1097	100	575	5	500	100	550	E32	1.500	0.20	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
176	EXHAUST BLOWER FAN C001-A SUCTION FROM ATM. TO 6-HBB-176 AND FROM 6-HBB-176 TO BLOWER. P-1097	150	200	5	196	35	196	E32	3.000	0.21	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
176	EXHAUST BLOWER FAN C001-A SUCTION FROM 3-HBB-176 TO BLOWER. P-1097	150	200	5	196	35	196	E32	2.000	0.21	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
176	EXHAUST BLOWER FAN C001-B SUCTION FROM 3-HBB-176 TO 3- HBB-176. P-1097	150	200	5	196	35	196	E32	6.000	0.28	CS						IWC-1222(d) IWC-5222		OPEN ENDED PIPE
178	DRW VENT FROM HBB-70 TO 727. P-1083B	HBD-	100	140	60	140	100	140	E51	0.750	0.15	CS				X	IWC-1222(a)		
179	DRW VENT FROM SHELL SIDE OF LUBE OIL COOLER TO HBD-725. P-1083B		100	140	60	140	100	140	E51	0.750	0.15	CS				X	IWC-1222(a)		
181	HYDROTEST CONNECTION FROM HBB-76 OR HBB-82 TO HBD-1094. P-1085A P-1085B		100	200	3	120	50	185	E12	0.750	0.15	CS					IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9
182	DRW DRAIN FROM HBB-19 TO 1079. P-1086	HBB-	150	150	20	110	50	130	E22	1.000	0.17	CS				X	IWC-1221(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
183	TEST CONNECTION FROM HBB-140 TO HBD-1084. P-1091	25	200	0	90	10	185	E61	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	
184	VENT/DRAIN LINE FROM HBB-76 AND FROM HBD-1095 TO HBB-82. P-1085A P-1085B	100	200	25	185	75	185	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
185	DRYWELL PURGE COMPRESSORS C001A-A & B-B SUCTION FROM CONTAINMENT. P-1091	100	215	0	90	0	185	E61	6.000	0.28	CS				X		IWC-1222(d)			
186	DISCHARGE FROM PSV F017C. P-1085C	50	185	0	80	50	170	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
187	TEST CONNECTION FROM HBB-34 TO HBD-1139. P-1065	125	150	75	100	100	130	P11	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	
188	TEST CONNECTION FROM HBB-30. P-1065	25	185	7	95	25	185	P11	0.750	0.15	CS						IWC-1222(a)		ISI REQ. PT NOT REQ. SEE NOTE 4	
189	DRAIN LINE FROM 4-HBB-115 TO VALVE F281. P-1085C	100	200	55	120	75	185	E12	1.000	0.17	CS						IWC-1221(d) IWC-5222		OPEN ENDED PIPE, SEE NOTE 9	
190	FROM DRYWELL PURGE COMPRESSOR TO 12-HBB-190. P-1091	20	300	10	226	10	286	E61	4.000	0.23	CS				X		IWC-1222(a)			
190	DRYWELL PURGE COMPRESSOR AFTERCOOLER FROM 4-HBB-190 TO HBB- 135. P-1091	20	300	10	226	10	286	E61	12.000	0.37	CS	X	X		X					
204	PIPE SPOOL CONTAINING F005B. FROM STEAM TUNNEL OUTSIDE CONTAINMENT TO VALVE F005B. P-1102B	25	150	0	150	15	150	T48	6.000	0.28	CS				X		IWC-1222(d)			
205	PIPE SPOOL CONTAINING F006A. FROM STEAM TUNNEL OUTSIDE CONTAINMENT TO VALVE F006A. P-1102B	25	150	0	150	15	150	T48	6.000	0.28	CS				X		IWC-1222(d)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
216	VENT LINE FROM HBB-9 TO 1231. P-1087	250	200	200	95	230	185	E21	0.750	0.15	CS									IWC-1221(d) IWC-5222 OPEN ENDED PIPE, SEE NOTE 9
218	SENSING LINE FOR DRYWELL PRESSURE. P-1096	50	350	0	135	50	350	E30	0.750	0.15	CS				X					IWC-1222(d)
219	FROM DRYWELL ATM. TO PRESSURE INSTRUMENTATION. P-1077B	150	400	2	150	18	330	C71	0.750	0.15	CS				X					IWC-1222(d)
220	SAMPLE RETURN LINE FROM DRYWELL HYDROGEN ANALYZER. P-1091	30	330	0	275	30	330	E61	0.750	0.15	CS				X					IWC-1222(a)
221	SAMPLE LINE FROM DRYWELL TO DRYWELL PURGE CONTROL SYSTEM. P-1091	30	330	0	135	30	330	E61	0.750	0.15	CS									IWC-1222(d) IWC-5222 OPEN ENDED PIPE
222	DRYWELL PRESSURE TRANSMITTER SENSING LINES. P-1110A	50	375	2	150	30	330	M71	0.750	0.15	CS									IWC-1222(d) IWC-5222 OPEN ENDED PIPE
223	DRYWELL PRESSURE TRANSMITTER SENSING LINE. P-1110A	50	225	2	104	30	185	M71	0.750	0.15	CS									IWC-1222(d) IWC-5222 OPEN ENDED PIPE
224	CONTAINMENT PRESSURE TRANSMITTER SENSING LINE. P-1110A	20	225	5	104	15	185	M71	0.750	0.15	CS									IWC-1222(d) IWC-5222 OPEN ENDED PIPE
224	CTMT. PRESSURE TRANSMITTER SENSING FROM VALVE F594 TO VALVE F595. P-1110A	20	225	5	104	15	185	M71	0.750	0.15	CS									IWC-1222(a) ISI REQ. PT NOT REQ. SEE NOTE 4
225	DRYWELL RADIATION MONITOR SAMPLE RETURN LINE FROM VALVE F593 TO VALVE F594. P-1110A	50	375	2	150	30	330	D23	0.750	0.15	CS									IWC-1222(a) ISI REQ. PT NOT REQ. SEE NOTE 4
225	DRYWELL RADIATION MONITOR SAMPLE RETURN LINE FROM VALVE F593 TO ATMOSPHERE. P-1110A	50	375	2	150	30	330	D23	0.750	0.15	CS									IWC-1222(d) ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
226	AIR LINE IN CONTAINMENT. P-1111A	150	195	120	120	125	120	M61	6.000	0.28	CS						IWC-1222(d)			ISI REQ. PT NOT REQ. SEE NOTE 4
227	AIR LINE IN DRYWELL, OUTSIDE CONTAINMENT FROM 5X6 REDUCER TO FLANGE. P-1111A	150	195	120	120	125	120	M61	6.000	0.28	CS						IWC-1222(d)			ISI REQ. PT NOT REQ. SEE NOTE 4
227	AIR LINE IN DRYWELL. P-1111A	150	195	120	120	125	120	M61	4.000	0.23	CS						IWC-1222(d)			ISI REQ. PT NOT REQ. SEE NOTE 4
227	AIR LINE IN DRYWELL FROM 5X4 REDUCER TO FLANGE. P-1111A	150	195	120	120	125	120	M61	4.000	0.23	CS						IWC-1222(d)			ISI REQ. PT NOT REQ. SEE NOTE 4
228	TEST CONNECTION FROM HBB-226 IN CONTAINMENT, FROM VALVE F802 TO VALVE F009. P-1111A	150	195	100	120	125	120	M61	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
230	TEST CONNECTION FROM HBB-227. FROM VALVE F010 TO VALVE F801. P-1111A	150	195	120	120	125	120	M61	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
230	TEST CONNECTION FROM VALVE F010 TO FLANGE, CTMT. PEN. #82. P-1111A	150	195	120	120	125	120	M61	0.750	0.15	CS						IWC-1222(d)			ISI REQ. PT NOT REQ. SEE NOTE 4
231	INSTRUMENTATION LINES TO AND FROM DRYWELL COOLERS. P-1101	150	195	0	97	2	185	M51	0.750	0.15	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
233	TEST CONNECTION FOR E22-RO- D005 (UPSTREAM OF D005). P-1086	220	200	170	95	200	185	E22	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
233	TEST CONNECTION FOR E22-RO- D005 (DOWNSTREAM OF D005). P-1086	100	200	10	95	40	185	E22	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
234	TEST CONNECTION FOR E21-RO- D004 (UPSTREAM OF D004). P-1087	250	200	200	95	230	185	E21	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
234	TEST CONNECTION FOR E21-RO- D004 (DOWNSTREAM OF D004). P-1087	100	200	10	95	50	185	E21	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP											EXAM	REF.	
235	TEST CONNECTION FROM VALVE F068A. P-1083A	150	270	10	240	160	270	E51	0.750	0.15	CS					X	IWC-1222(a)			
236	TEST CONNECTION FROM VALVE F077A. P-1083A	150	270	10	240	160	270	E51	0.500	0.14	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4
239	TEST CONNECTION FOR E12-RO-D003A. P-1085B	100	200	25	185	75	185	E12	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
240	TEST CONNECTION FOR E12-RO-D003C. P-1085C	100	200	55	120	75	185	E12	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
241	TEST CONNECTION FOR E12-RO-D003B. P-1085A	100	200	55	120	75	185	E12	0.500	0.14	CS						IWC-1221(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
242	LOW POINT DRAIN FOR HBB-11 (LPCS). P-1087	100	200	75	95	100	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1)			
243	RELIEF VALVE F031 DISCHARGE TO 20-HBB-8. P-1087	100	200	75	95	100	185	E21	1.000	0.17	CS				X		IWC-1221(a)(1)			
244	VENT OFF OF HBB-12. P-1087	100	200	75	95	100	185	E21	0.750	0.15	CS				X		IWC-1221(a)(1)			
245	DRAIN FROM HBB-60 TO VALVE F251. P-1083A	100	170	50	140	100	170	E51	1.000	0.17	CS						IWC-1222(d) IWC-5222			OPEN ENDED PIPE, SEE NOTE 9
245	DRAIN FROM 2-HBB-60 FROM VALVE F251 TO VALVE F252. P-1083A	100	170	50	140	100	170	E51	1.000	0.17	CS				X		IWC-1222(a)			
246	DRAIN FROM HBB-72. P-1083B	100	140	60	140	100	140	E51	1.000	0.17	CS				X		IWC-1222(a)			
247	AUX. BLDG. FLOOR & EQUIP. DRAIN PUMP - BACK TO THE CTMT.FROM HBD-1524 TO DBB-146. P-1094C	150	150	40	80	55	130	P45	4.000	0.23	CS						IWC-1222(a)			ISI REQ. PT NOT REQ. SEE NOTE 4

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
248	TEST CONNECTION FROM HBB-247. P-1094C	150	150	40	80	55	130	P45	0.750	0.15	CS									ISI REQ. PT NOT REQ. SEE NOTE 4
253	TEST CONNECTION FROM HBB-77. P-1085C	50	185	0	120	50	185	E12	0.750	0.15	CS				X					IWC-1221(a)(1
256	PRESSURE EQUALIZATION LINE FROM 1E51F031 P-1083A	125	200	75	140	100	170	E51	0.750	.154	CS									IWC-1222(a) IWC-5222
258	TEST CONNECTION FROM HBB-74 TO HBD-1837 P-1085C	100	215	14.7	95	75	185	E12	0.750	.154	CS				X					IWC-1221(a)

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
001	TRANSFER POOL LINER DRAINS TO LEAK DETECTION SYSTEM. P-1088D P-1090A	60	150	10	110	35	150	E31	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1
004	FROM DRYWELL HEAD POCKET DRAIN TO DRYWELL HEAD LINER DRAINS HBC-5. P-1088C	60	150	10	110	35	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
005	DRYWELL HEAD LINER DRAINS TO HBC-6. P-1088C	60	150	10	110	35	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
006	FROM DRYWELL HEAD POCKET DRAIN HBC-5 TO HBC-8. P-1088C	60	150	10	110	35	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
007	LEAK DETECTION SEAL DRAINS FROM REFUELING BELLOWES TO HBC-8. P-1088C	60	150	10	110	35	150	E31	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 1
008	FROM SEAL DRAINS HBC-7 TO LEAK DETECTION SYSTEM. P-1088C	60	150	10	110	35	150	E31	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 1
008	FROM 1-HBC-8 TO LEAK DETECTION SYSTEM. P-1088C P-1090A	60	150	10	110	35	150	E31	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1
014	WATER FROM HBB-6 TO VALVE F220. P-1088E	60	150	5	110	35	150	G41	8.000	0.32	CS				X		IWD-1220(c)			
014	FROM VALVE F220 TO FUEL POOL DRAIN TANK A001. P-1088E	60	150	5	110	35	150	G41	8.000	0.32	CS						IWD-1220(c) IWD-5222(f)			OPEN ENDED PIPE SEE NOTE 6
015	WATER FROM FUEL POOL DRAIN TANK F062 TO 8-HBC-16. P-1088E	100	150	20	125	20	150	G41	10.000	0.36	CS				X		IWD-1220(c)			
016	FUEL POOL PUMPS C001A-A & B-B SUCTION FROM HBC-15 TO 6-HBC- 16. P-1088E	100	150	20	125	20	150	G41	8.000	0.32	CS				X		IWD-1220(c)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
016	FUEL POOL SUCTION FROM 8-HBC-16 TO PUMPS C001A-A & B-B. P-1088E	100	150	20	125	20	150	G41	6.000	0.28	CS				X		IWD-1220(c)			
017	CRW DRAINS FROM Y-STRAINERS D003A & B TO HBD-25. P-1088E	100	150	20	125	50	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)			
018	DRW DRAINS FROM 3/4-HBC-18 TO HBD-26. P-1088E	250	150	175	125	210	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			
018	FROM FUEL POOL PUMPS C001A-A& B-B TO 1-HBC-18. P-1088E	250	150	175	125	210	150	G41	0.750	0.15	CS				X		IWD-1220(a)(1)			
019	FUEL POOL PUMP DISCHARGE 6-HBC-19 TO FUEL POOL HEAT EXCH. B001A & B. P-1088E	250	150	175	125	210	150	G41	8.000	0.32	CS				X		IWD-1220(c)			
019	FROM FUEL POOL PUMPS C001A-A & B-B TO 8-HBC-19. P-1088E	250	150	175	125	210	150	G41	6.000	0.28	CS				X		IWD-1220(c)			
020	PRESSURE SAFETY LINE FROM FUEL POOL PUMP SUCTION LINE HBC-194 TO PSV-F300A&B. P-1088E	100	150	20	125	50	150	G41	0.500	0.14	CS				X		IWD-1220(a)(1)			
021	CROSSTIE BETWEEN FUEL POOL PUMP DISCHARGE LINES HBC-19. P-1088E	250	150	175	125	210	150	G41	8.000	0.32	CS				X		IWD-1220(c)			
022	FUEL POOL HEAT EXCHANGER BYPASS FROM HBC-19 TO HBC-25. P-1088E	250	150	175	125	210	150	G41	8.000	0.32	CS				X		IWD-1220(c)			
023	CRW VENTS FROM FUEL POOL HEAT EXCHANGERS B001A & B TO HBC-27 P-1088E	250	150	175	125	210	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			
024	CRW DRAINS FROM FUEL POOL HEAT EXCHANGERS B001A & B TO HBD- 29. P-1088E	250	150	165	105	210	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
025	FILTER/DEMINERALIZER SUBSYS. WATER FROM FUEL POOL HEAT EX. B001A & B TO HEADER HBC-26. P-1088E	250	150	165	105	200	150	G41	8.000	0.32	CS					X	IWD-1220(c)		
026	FUEL POOL WATER HEADER FROM HBC-25 TO FILTER/DEMINERALIZER SUBSYSTEM LINE HBZ-9. P-1088E	250	150	165	105	200	150	G41	10.000	0.36	CS					X	IWD-1220(c)		
028	FILTER/DEMINERALIZER SUBSYS. BYPASS FROM HEADER HBC-26 TO HBC-31. P-1088E	250	150	165	105	200	150	G41	10.000	0.36	CS					X	IWD-1220(c)		
031	FUEL POOL FEED HEADER FROM 10-HBC-31 TO HBB-7 AND FROM 10- HBC-31 TO 10-HBC-31. P-1088E	250	150	105	100	200	150	G41	8.000	0.32	CS					X	IWD-1220(c)		
031	FROM 8-HBC-031 TO 8-HBC-31 ANDFROM VALVE F048 TO VALVE F005. P-1088E	250	150	105	100	200	150	G41	10.000	0.36	CS					X	IWD-1220(c)		
032	FUEL POOL FEED HEADER INSIDE CONTAINMENT FROM HBB-7 TO HBC-34. P-1088C	250	150	60	105	200	125	G41	8.000	0.32	CS					X	IWD-1220(c)		
033	HEAD RPV DECONTAMINATION CONNECTION FROM HBC-32 TO HBD-44. P-1088C	250	150	60	105	200	150	G41	3.000	0.21	CS					X	IWD-1220(a)(1)		
034	WATER HEADERS FOR FUEL POOL FROM GBB-115 & GBB-120 TO INLINE REDUCERS. P-1088C P-1085A,B	150	150	60	105	200	125	G41	12.000	0.37	CS						IWD-1220(c) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
034	FROM VALVE F041 TO VALVE F341. P-1088C	150	150	60	105	200	125	G41	8.000	0.36	CS					X	IWD-1220(c)		
034	FROM INLINE REDUCER TO VALVE F041A. P-1088C	150	150	60	105	200	125	G41	8.000	0.32	CS						IWD-1220(c) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
034	FROM INLINE REDUCER TO VALVE F341. P-1088C	150	150	60	105	200	125	G41	10.000	0.36	CS						IWD-1220(c) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
037	FUEL POOL HEADER FROM FEED HEADER HBC-31 TO HEADER HBC-38 P-1088E	250	150	105	100	200	150	G41	10.000	0.36	CS				X		IWD-1220(c)		
038	FUEL POOL HEADER FOR AUX. BLDG. FROM HEADER HBC-37 TO HBC-47. P-1088E	250	150	105	100	200	150	G41	10.000	0.36	CS				X		IWD-1220(c)		
039	WATER FEED LINES FOR SPENT FUEL POOL TANK FROM AUX. BLDG. HEADER HBC-38 TO HCC-9. P-1088E	250	150	105	100	200	150	G41	8.000	0.32	CS				X		IWD-1220(c)		
041	WATER FROM HBD-42 TO VALVE F002 AND VALVE F005. P-1088E	150	150	40	110	60	130	G41	3.000	0.21	CS				X		IWD-1220(a)(1)		
041	WATER FROM VALVE F002 TO HCC-64. P-1088E	150	150	40	110	60	130	G41	3.000	0.21	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
043	TRANSFER CANAL LINER DRAINS FROM HCC-44 TO LEAK DETECTION SYSTEM. P-1088D P-1090B	30	150	10	125	20	150	E31	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
044	SPENT FUEL POOL LINER DRAINS FROM HCC-44 TO LEAK DETECTION SYSTEM. P-1088D P-1090B	30	150	15	125	25	150	E31	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
045	CASK STORAGE POOL LINER DRAIN TO HBC-46. P-1088D	30	150	20	125	30	150	E31	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
045	CASK STORAGE POOL LINER DRAIN TO HBC-45. P-1088D	30	150	20	125	30	150	E31	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
046	CASK STORAGE POOL AND CASK WASHDOWN AREA LINER PLATE DRAIN HEADER TO LEAK DETECTION SYS. P-1088D P-1090B	30	150	20	125	30	150	E31	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
047	WATER FOR CASK STORAGE POOL FROM FUEL POOL WATER HEADER HBC-38 TO HCC-12. P-1088E	250	150	105	100	200	150	G41	6.000	0.28	CS				X		IWD-1220(c)		
049	CONDENSATE TRANSFER PUMP WATER HEADER FROM HBD-43 TO HBC-51. P-1088C	80	150	40	100	60	130	G41	3.000	0.21	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
050	WATER FROM HEADER HBC-49 FOR TRANSFER POOL TO HCC-16. P-1088C	80	150	40	100	60	130	G41	3.000	0.21	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
051	WATER FROM HEADER HBC-49 FOR REACTOR WELL TO HCC-17. P-1088C	80	150	40	100	60	130	G41	3.000	0.21	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
052	SEPARATOR STORAGE AREA LINER DRAIN TO LEAK DETECTION SYSTEM P-1088D P-1090A	60	150	10	100	40	150	E31	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
053	FUEL POOL DRAIN TANK A001 VENT. P-1088E	60	150	15	120	15	150	G41	2.000	0.21	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
054	CRW DRAIN FROM FUEL POOL DRAIN TANK A001 TO HBD-23. P-1088E	60	150	10	125	20	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)		
079	FLUSH LINE. P-1061B	180	150	140	90	165	90	P41	16.000	0.37	CS				X		IWD-1220(a)(1)		
079	STANDBY SERV. WTR.LOOPS A & B SUPPLY FROM SSW PUMPS C001A-A & B-B TO RHR HT.EXCH. B002A & B P-1061A P-1061B	180	150	140	90	165	90	P41	24.000	0.37	CS				X	X			
079	FLUSH LINE. P-1061D	180	150	140	90	165	90	P41	6.000	0.15	CS				X	X			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
079	VENT/DRAIN LINE P-1061A	180	150	140	90	165	90	P41	0.750	0.15	CS					X		IWD-1220(a)(1)	
079	SSW LOOPS A & B SUPPLY FROM PUMPS C001A-A & B-B TO RHR HT.EXCH. B002A & B. P-1061C P-1061D	180	150	140	90	165	90	P41	18.000	0.37	CS					X	X		
079	FLUSH LINE. P-1061C	180	150	140	90	165	90	P41	6.000	0.28	CS					X	X		
079	SSW LOOPS A & B SUPPLY FROM PUMPS C001A-A & B-B TO RHR HT.EXCH. B002A & B. P-1061B P-1061C,D	180	150	140	90	165	90	P41	20.000	0.37	CS					X	X		
080	SSW FROM RHR HEAT EXCHANGERS B002A & B TO RHR HEAT EXCHANGERS B001A & B. P-1061C P-1061D	180	150	135	110	165	115	P41	18.000	0.37	CS					X	X		
081	SSW LOOPS A & B RETURN FROM RHR HEAT EXCHANGERS B001A & B TO HBC-82. P-1061C P-1061D	180	150	130	130	165	140	P41	18.000	0.37	CS					X	X		
082	SSW LOOPS A & B RETURN HEADERS FROM VALVE F005 TO SSW COOLING TOWERS. P-1061A	180	150	90	130	165	140	P41	24.000	0.37	CS						X		OPEN ENDED PIPE SEE NOTE 6
082	FLUSH LINE. P-1061B	180	150	90	130	165	140	P41	16.000	0.37	CS					X	X		IWD-5222(e)
082	FROM RHR HX LINE 18X20 REDUCER TO 20X24 REDUCER. P-1061B P-1061C,D	180	150	90	130	165	140	P41	20.000	0.37	CS					X	X		
082	SSW LOOPS A & B RETURN HEADER FROM 20X24 REDUCER TO VALVE F005. P-1061A P-1061B	180	150	90	130	165	140	P41	24.000	0.37	CS					X	X		
082	VENT/DRAIN LINE. P-1061A	180	150	90	130	165	140	P41	0.750	0.15	CS					X			IWD-1220(a)(1)
082	FLUSH LINE. P-1061C P-1061D	180	150	90	130	165	140	P41	6.000	0.28	CS					X	X		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
083	VENT/DRAIN LINE. P-1061A	120	150	80	90	95	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1)		
083	SSW LOOP C FROM HPCS SW PUMP C002-C TO HPCS DIESEL GEN. JACKET WATER COOLER S001-C. P-1061B	120	150	80	90	95	90	P41	6.000	0.28	CS					X	X		
083	SSW LOOP C FROM HPCS SW PUMP C002-C TO HPCS DIESEL GENERA- TOR JACKET WATER COOLER S001-C P-1061A P-1061B	120	150	80	90	95	90	P41	10.000	0.36	CS					X	X		
084	SSW LOOP C RETURN FROM VALVE F011 TO SSW COOLING TOWER LINE 10X6 REDUCER. P-1061A	120	150	26	120	95	120	P41	10.000	0.36	CS						X		OPEN ENDED PIPE, SEE NOTE 6
084	FROM DG. JACKET COOLER OUTLET TO RETURN LINE 6X8 REDUCER. P-1061B	120	150	26	120	95	120	P41	6.000	0.28	CS					X	X	IWD-5222(e)	
084	FROM DG. JACKET COOLER RETURN LINE 8X10 REDUCER TO VALVE F011. P-1061A P-1061B	120	150	26	120	95	120	P41	10.000	0.36	CS					X	X		
084	VENT/DRAIN LINE. P-1061A	120	150	26	120	95	120	P41	0.750	0.15	CS					X		IWD-1220(a)(1)	
084	SSW RETURN LINE FROM 6X10 REDUCERS TO 6X16 REDUCERS. P-1061A	120	150	26	120	95	120	P41	6.000	0.28	CS						X	IWD-5222(e)	OPEN ENDED PIPE SEE NOTE 6
084	FROM 6X16 REDUCERS TO SSW COOLING TOWER SPRAY HEADER. P-1061A	120	150	26	120	95	120	P41	16.000	0.36	CS						X	IWD-5222(e)	OPEN ENDED PIPE SEE NOTE 6
086	SSW FROM HEADER HBC-79 TO STANDBY DIESEL GENERATOR JACKET WATER COOLERS B001A & B P-1061B	180	150	110	90	150	90	P41	12.000	0.37	CS					X	X		
086	SSW FROM 12-HBC-86 TO 12- HBC-86. P-1061B	180	150	110	90	150	90	P41	10.000	0.36	CS					X	X		
087	SSW FROM STANDBY DIESEL GEN. JACKET WATER COOLERS B001A & BTO 12X10 REDUCER. P-1061B	180	150	95	110	150	110	P41	12.000	0.37	CS					X	X		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
087	FROM STANDBY DG. JACKET WATER COOLER DISCHARGE LINE 12X10 REDUCER TO 12X10 REDUCER. P-1061B	180	150	95	110	150	110	P41	10.000	0.36	CS					X	X		
087	FROM STAND-BY DG JACKET 12X10 REDUCER. P-1061B	180	150	95	110	150	110	P41	12.000	0.37	CS					X	X		
089	FROM 3-HBC-89 LINE TO CONTROL RM. A.C. UNITS B002A-A TO HBC-90. P-1061C	180	150	140	90	150	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
089	SSW TO CONTROL ROOM COOLER FROM 4X3 REDUCER TO VALVE F064. P-1061C P-1061D	180	150	140	90	150	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
089	FROM HBC-79 TO 4X3 REDUCER IN HBC-89 LINE TO CONTROL ROOM COOLER B002A-A. P-1061C	180	150	140	90	150	90	P41	4.000	0.23	CS				X		IWD-1220(a)(1		
089	SSW FROM VALVE F064 TO CONTROL ROOM A.C. UNIT HEAT EXCHANGER. P-1061C P-1061D	180	150	140	90	150	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
090	SSW FROM CONTROL ROOM A.C. UNITS B002A-A & B-B TO 4X3 REDUCER IN LINE TO HBC-82. P-1061C	180	150	115	105	150	105	P41	4.000	0.23	CS				X		IWD-1220(a)(1		
090	SSW FROM VALVE F081 TO 4X3 REDUCER AND FROM VALVE F081 TO HBC-82. P-1061C P-1061D	180	150	115	105	150	105	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
090	SSW FOR CONTROL ROOM A.C. UNITS FROM HEAT EXCHANGER TO VALVE F081. P-1061C P-1061D	180	150	115	105	150	105	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
091	SSW SUPPLY HDRS. FOR ESF ELECT. SWITCHGEAR RM. FROM VALVE F237 TO 2 1/2X2 REDUCER. P-1061C	180	150	105	90	150	90	P41	2.500	0.20	CS				X		IWD-1220(a)(1		
091	FROM 2.5-HBC-91 TO HBC-93. P-1061C P-1061D	180	150	105	90	150	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
091	FROM VALVE F236 TO VALVE F239. P-1061C	180	150	105	90	150	90	P41	3.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 1
091	SSW SUPPLY HEADERS FOR ESF SWITCHGEAR RM. COOLERS FROM HBC-79 TO VALVE F237. P-1061C	180	150	105	90	150	90	P41	2.500	0.20	CS				X		IWD-1220(a)(1)			
091	SSW SUPPLY HEADER FROM HBC-89 TO 2-HBC-91. P-1061D	180	150	105	90	150	90	P41	2.500	0.20	CS				X		IWD-1220(a)(1)			
092	SSW RET. HEADERS FOR ESF ELEC. SWTCHGR. RM. COOLERS TO HBC-82 & HBC-90 (UNIT 1 LOOP B ONLY) P-1061C P-1061D	180	150	100	95	150	95	P41	2.500	0.20	CS				X		IWD-1220(a)(1)			
092	FROM VALVE F240 TO VALVE F241. P-1061C	180	150	100	95	150	95	P41	3.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 1
092	SSW RETURN FROM SWITCHGEAR RM. COOLERS HBC-94 TO 2.5-HBC-92. P-1061C P-1061D	180	150	100	95	150	95	P41	2.000	0.21	CS				X		IWD-1220(a)(1)			
092	SSW RETURN HEADERS FOR ESF ELECTRICAL SWITCHGEAR ROOM COOLERS. P-1061C P-1061D	180	150	100	95	150	95	P41	2.500	0.20	CS				X		IWD-1220(a)(1)			
093	ESF SWITCHGEAR ROOM COOLER INLET LINE FROM HBC-91. P-1061C P-1061D	180	150	115	90	150	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1)			
093	ESF SWITCHGERAR ROOM COOLERS INLET LINE FROM HBC-91. P-1061C P-1061D	180	150	115	90	150	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1)			
093	VENT/DRAIN LINE. P-1061A	180	150	115	90	150	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
094	FROM ESF SWITCHGEAR ROOM COOLERS TO 2-HBC-92. P-1061C P-1061D	180	150	95	95	150	95	P41	1.500	0.20	CS				X		IWD-1220(a)(1)			
094	SSW FROM ESF ELEC. SWTCHGR. RM. COOLERS TO HBC-92. P-1061C P-1061D	180	150	95	95	150	95	P41	2.000	0.21	CS				X		IWD-1220(a)(1)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
095	SSW VENTS/DRAINS FROM ESF SWTCHGR. ROOM COOLERS SUPPLY/ RETURN LINES. P-1061C P-1061D	180	150	115	90	150	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1		
095	SSW VENTS/DRAINS FROM ESF SWITCHGERA RM. COOLERS SUPPLY/RETURN LINE. P-1061C	180	150	115	90	150	90	P41	1.000	0.17	CS					X	IWD-1220(a)(1		
095	SSW VENTS/DRAINS FROM ESF SWITHCGEAR RM. COOLERS SUPPLY/RETURN LINE. P-1061C P-1061D	180	150	115	90	150	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1		
095	SSW VENTS/DRAINS FROM ESF SWITHCGEAR RM. COOLERS TO HBC-421. P-1061C	180	150	115	90	150	90	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
096	SSW VENT/DRAIN FROM ESF SWITCHGEAR RM. COOLERS RETURN LINE. P-1061C P-1061D	180	150	115	90	150	90	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
096	SSW VENT/DRAIN FOR FPC & CU PUMP ROOM COOLERS. P-1061C	180	150	115	90	150	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1		
096	SSW VENT/DRAIN FROM ESF SWITCHGEAR RM. COOLERS RETURN LINE. P-1061C P-1061D	180	150	115	90	150	90	P41	1.000	0.17	CS					X	IWD-1220(a)(1		
096	SSW VENTS/DRAINS FROM ESF SWTCHGR. RM. COOLERS RETURN LINES. P-1061C P-1061D	180	150	115	90	150	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1		
096	SSW VENT/DRAIN FROM ESF SWITCHGEAR RM. COOLERS RETURN LINE. P-1061B	180	150	115	90	150	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1		
097	SSW FROM ESF ELEC. SWTCHGR. RMCOOLERS INTAKE LINES TO PSV F151, F157, F138 & F127. P-1061C P-1061D	180	150	115	90	150	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
098	SSW FROM 1-HBC-89 TO RCIC ROOMCOOLER B006-A. P-1061C	180	150	135	90	160	90	P41	1.000	0.17	CS					X	IWD-1220(a)(1			
098	SSW FROM 1-HBC-98 TO RCIC ROOMCOOLER. P-1061C	180	150	135	90	160	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1			
099	SSW FROM RCIC ROOM COOLER B006-A TO 1-HBC-99. P-1061C	180	150	130	100	160	100	P41	1.500	0.20	CS					X	IWD-1220(a)(1			
099	SSW FROM RCIC ROOM COOLER FROM 1 1/2-HBC-99 TO HBC-90. P-1061C	180	150	130	100	160	100	P41	1.000	0.17	CS					X	IWD-1220(a)(1			
100	SSW FROM HBC-98 TO PSV F104. P-1061C	180	150	135	90	160	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1			
101	SSW VENT FROM HBC-99. P-1061C	180	150	130	100	160	100	P41	0.750	0.15	CS					X	IWD-1220(a)(1			
102	SSW DRAIN FROM HBC-98. P-1061C	180	150	135	90	160	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1			
103	SSW FROM RHR HEAT EXCHANGERS B001A, & B, & 2A & B TO PSV F100A & B. P-1061C P-1061D	180	150	135	110	165	115	P41	0.750	0.15	CS					X	IWD-1220(a)(1			
104	DRW DRAINS FROM RHR HEAT EXCHANGER ISOLATION VALVE TO SECOND LINE ISOLATION VALVE. P-1061C P-1061D	180	150	135	110	165	140	P41	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1	
104	DRW DRAINS FROM RHR HEAT EXCHANGERS B001A & B & 2A & B TO HBD-232. P-1061C P-1061D	180	150	135	110	165	140	P41	1.000	0.17	CS					X	IWD-1220(a)(1			
105	SSW SUPPLY HEADER FROM HBC-89 TO 2-HBC-105. P-1061C	180	150	140	90	150	90	P41	2.500	0.20	CS					X	IWD-1220(a)(1			
105	SSW SUPPLY FROM 2.5-HBC-105 TO 1.5-HBC-109. P-1061C	180	150	140	90	150	90	P41	2.000	0.21	CS					X	IWD-1220(a)(1			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
105	VENT/DRAIN LINE. P-1061C	180	150	140	90	150	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
106	FROM RHR SEAL COOLER TO 2.5-HBC-106. P-1061C	180	150	130	110	150	110	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
106	FROM 2-HBC-106 TO SSW RETURN HEADER HBC-90. P-1061C	180	150	130	110	150	110	P41	2.500	0.20	CS				X		IWD-1220(a)(1		
109	SSW FROM HBC-105 TO RHR PUMP SEAL COOLER C002A-A. P-1061C	180	150	140	90	160	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1		
110	SSW FROM RHR PUMP SEAL COOLER C002A-A TO HBC-106. P-1061C	180	150	130	100	160	100	P41	1.500	0.20	CS				X		IWD-1220(a)(1		
111	VENT/DRAIN LINE. P-1061C	180	150	130	90	150	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
111	SSW FROM HBC-105 TO RHR "A" ROOM COOLER B003-A. P-1061C	180	150	130	90	150	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
112	SSW FROM RHR "A" ROOM COOLER B003-A TO HBC-106. P-1061C	180	150	125	120	150	120	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
113	SSW FROM HBC-107 TO PSV F084A. P-1061C	180	150	140	90	160	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
114	SSW FROM HBC-111 TO PSV F097A. P-1061C	180	150	130	90	150	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
115	SSW SUPPLY HEADER FROM 2.5-HBC-115 TO HBC-119. P-1061D	180	150	140	90	160	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
115	SSW SUPPLY HEADER FROM 4-HBC-115 TO 2-HBC-115. P-1061D	180	150	140	90	160	90	P41	2.500	0.20	CS				X		IWD-1220(a)(1		
115	VENT/DRAIN LINE. P-1061D	180	150	140	90	160	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	NORMAL PSIG	TEMP	MAXIMUM PSIG	TEMP												
115	SSW SUPPLY HEADER FROM HBC-79 TO 2 1/2-HBC-115. P-1061D	180	150	140	90	160	90	P41	4.000	0.23	CS				X		IWD-1220(a)(1		
116	SSW RETURN HEADER FROM 2.5-HBC-116 TO HBC-82. P-1061D	180	150	130	110	160	115	P41	4.000	0.23	CS				X		IWD-1220(a)(1		
116	SSW RETURN HEADER FROM 2-HBC-120 TO 4-HBC-116. P-1061D	180	150	130	110	160	115	P41	2.500	0.20	CS				X		IWD-1220(a)(1		
117	SSW FROM HBC-115 TO RHR "B" ROOM COOLER B004-B. P-1061D	180	150	130	90	150	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
118	SSW FROM RHR "B" ROOM COOLER B004-B TO HBC-116. P-1061D	180	150	125	120	150	120	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
119	SSW FROM HBC-115 TO RHR PUMP SEAL COOLER C002B-B. P-1061D	180	150	140	90	160	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1		
120	SSW FROM RHR PUMP SEAL COOLER C002B-B TO 2-HBC-120. P-1061D	180	150	135	100	160	100	P41	1.500	0.20	CS				X		IWD-1220(a)(1		
120	SSW RETURN FROM SEAL COOLER FROM 1.5-HBC-120 TO 2.5-HBC-116. P-1061D	180	150	135	100	160	100	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
123	SSW FROM HBC-121 TO PSV F084B. P-1061D	180	150	140	90	160	90	P41	0.500	0.14	CS				X		IWD-1220(a)(1		
124	SSW FROM HBC-117 TO PSV F097B. P-1061D	180	150	130	90	150	90	P41	0.500	0.14	CS				X		IWD-1220(a)(1		
125	SSW DRAIN LINE FROM RHR ROOM COOLER. P-1061C P-1061D	180	150	130	90	150	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
126	SSW VENT LINE FROM RHR ROOM COOLER. P-1061C P-1061D	180	150	130	90	150	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
127	CROSSTIE BETWEEN LOOPS A & B HBC-90. P-1061C P-1061D	180	150	75	85	150	105	P41	3.000	0.21	CS					X	IWD-1220(a)(1)		
128	CROSSTIE BETWEEN LOOPS A & B HBC-89. P-1061C P-1061D	180	150	90	75	150	90	P41	3.000	0.21	CS					X	IWD-1220(a)(1)		
129	SSW FROM HBC-127 TO HBD-161. P-1061D	180	150	75	85	150	105	P41	6.000	0.28	CS					X	X		
130	PLANT SERVICE WATER FROM JBD-162 TO HBC-128. P-1061C	180	150	90	75	150	90	P41	6.000	0.28	CS					X	X		
131	DRW VENT FROM HBC-81 TO VALVE F121. P-1061C P-1061D	180	150	130	130	165	140	P41	1.000	0.17	CS					X	IWD-1220(a)(1)		
131	VENT LINE FROM VALVE F121 TO VALVE F122. P-1061C P-1061D	180	150	130	130	165	140	P41	1.000	0.17	CS							NO ISI OR PT REQ. SEE NOTE 1	
132	SSW FROM HBC-79 TO RHR SYSTEM, GBB-17. P-1061D	180	150	140	90	165	90	P41	18.000	0.37	CS					X	X		
133	MAKEUP TREATMENT WATER FROM VALVE F120 TO HBC-79. P-1061C P-1061D	180	150	100	65	165	90	P41	1.000	0.17	CS					X	IWD-1220(a)(1)		
133	MAKEUP TREATMENT WATER FROM VALVE F119 TO FALVE F120. P-1061C P-1061D	180	150	100	65	165	90	P41	1.000	0.17	CS							NO ISI OR PT REQ. SEE NOTE 1	
134	SSW FROM HBC-140 TO LPCS ROOM COOLER B002-A. P-1061B	180	150	135	90	160	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1)		
135	SSW FROM HBC-134 TO PSV F036. P-1061B	180	150	135	90	160	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1)		
136	SSW FROM LPCS ROOM COOLER B002-A TO HBC-141. P-1061B	180	150	130	115	160	115	P41	1.500	0.20	CS					X	IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
139	SSW FROM HBC-137 TO PSV F041. P-1061B	180	150	140	90	160	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1		
140	SSW SUPPLY HEADER FROM HBC-86 TO HBC-134. P-1061B	180	150	140	90	160	90	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
141	SSW RETURN HEADER FROM HBC- 136 TO HBC-87, LOOP A. P-1061B	180	150	130	110	160	110	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
142	SSW RETURN HEADER FROM 1 1/2-HBC-150 TO HBC-87. P-1061B	180	150	130	110	160	110	P41	2.500	0.20	CS					X	IWD-1220(a)(1		
142	SSW RETURN HEADER FROM 1.5- HBC 145 TO 2.5-HBC-142. P-1061B	180	150	130	110	160	110	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
143	SSW SUPPLY HEADER FROM HBC-86 LOOP B TO 2-HBC-143. P-1061B	180	150	140	90	160	90	P41	2.500	0.20	CS					X	IWD-1220(a)(1		
143	SSW SUPPLY HEADER FROM 2.5-HBC- 143 TO 1.5-HBC-144. P-1061B	180	150	140	90	160	90	P41	2.000	0.21	CS					X	IWD-1220(a)(1		
144	SSW FROM HEADER HBC-143 TO RHR PUMP SEAL COOLER C002C-B. P-1061B	180	150	140	90	160	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1		
145	SSW FROM RHR PUMP SEAL COOLER C002C-B TO HBC-142. P-1061B	180	150	130	100	160	100	P41	1.500	0.20	CS					X	IWD-1220(a)(1		
148	SSW FROM HBC-143 TO PSV F049. P-1061B	180	150	140	90	160	90	P41	0.500	0.14	CS					X	IWD-1220(a)(1		
149	SSW FROM HBC-143 TO RHR C ROOM COOLER B005-B. P-1061B	180	150	140	90	160	90	P41	1.500	0.20	CS					X	IWD-1220(a)(1		
150	SSW FROM RHR C ROOM COOLER B005-B TO HBC-142. P-1061B	180	150	130	120	160	120	P41	1.500	0.20	CS					X	IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
151	VENT/DRAIN LINE FROM HBC-150. P-1061B	180	150	130	100	160	100	P41	0.750	0.15	CS					X				IWD-1220(a)(1)
151	SSW DRAIN FROM HBC-149. P-1061B	180	150	130	100	160	100	P41	1.000	0.17	CS					X				IWD-1220(a)(1)
152	SSW VENT FROM HBC-145. P-1061B	180	150	130	100	160	100	P41	0.750	0.15	CS					X				IWD-1220(a)(1)
153	SSW FROM HBC-149 TO PSV F046. P-1061B	180	150	140	90	160	90	P41	0.500	0.14	CS					X				IWD-1220(a)(1)
154	DRW VENTS AND DRAINS FROM STANDBY DIESEL GEN. JACKET WTR COOLER B004B TO HBD-252. P-1061B	180	150	95	110	150	110	P41	0.750	0.15	CS					X				IWD-1220(a)(1)
155	DRW DRAINS AND VENTS FROM STANDBY DIESEL GEN. JACKET WTR COOLER B004A TO HBD-271. P-1061B	180	150	95	110	150	110	P41	0.750	0.15	CS					X				IWD-1220(a)(1)
156	DRW DRAINS AND VENTS FROM HPCS DIESEL GEN. JACKET WTR. COOLER S001 TO HBD-253. P-1061B	120	150	60	120	95	120	P41	0.750	0.15	CS					X				IWD-1220(a)(1)
157	SSW SUPPLY HEADER FROM HBC- 83, LOOP C TO HBC-160. P-1061B	120	150	85	90	100	90	P41	2.500	0.20	CS					X				IWD-1220(a)(1)
158	SSW RETURN HEADER TO HBC-84, LOOP C TO HBC-162. P-1061B	120	150	70	115	100	115	P41	2.500	0.20	CS					X				IWD-1220(a)(1)
160	SSW FROM HBC-157 TO HPCS ROOM COOLER B001-C. P-1061B	120	150	85	90	100	90	P41	2.000	0.21	CS					X				IWD-1220(a)(1)
162	SSW FROM HPCS ROOM COOLER B001-C TO HBC-158. P-1061B	120	150	80	120	100	120	P41	2.000	0.21	CS					X				IWD-1220(a)(1)
163	SSW FROM HBC-315 TO PSV F061. P-1061D	120	150	90	90	105	90	P41	0.500	0.14	CS					X				IWD-1220(a)(1)

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
164	SSW FROM HBC-160 TO PSV F055. P-1061B	120	150	85	90	100	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
165	SSW VENT AND DRAIN FROM HBC-160. P-1061B	120	150	85	90	100	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1)			
165	VENT/DRAIN LINE FROM HBC-160. P-1061B	120	150	85	90	100	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
166	SSW VENT AND DRAIN FROM HBC-162. P-1061B	120	150	80	120	100	120	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
166	VENT/DRAIN LINE FROM HBC-160. P-1061B	120	150	80	120	100	120	P41	1.000	0.17	CS				X		IWD-1220(a)(1)			
167	SSW FROM HBC-169 TO LOOPS A & B HBC-79 TO VALVE F111. P-1061B	180	150	50	75	160	80	P41	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1	
167	SSW FROM HBC-169 TO LOOPS A&B, FROM VALVE F111 TO HBC-79. P-1061B	180	150	50	75	160	80	P41	2.000	0.21	CS				X		IWD-1220(a)(1)			
168	SSW FROM 2-HBC-167 TO VALVE F019. P-1061B	120	150	50	75	100	80	P41	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 1	
168	SSW FROM VALVE F019 TO 2-HBC-160. P-1061B	120	150	50	75	100	80	P41	1.500	0.20	CS				X		IWD-1220(a)(1)			
169	SSW FROM JBD-113 TO HBC-167. P-1061B	180	150	50	75	65	80	P41	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1	
170	SSW FROM HBC-87 TO PSV F024A & B. P-1061B	180	150	95	110	150	110	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
171	SSW RECIRC. LINES FROM LOOPS A & B HBC-79 TO VALVE F002. P-1061A	180	150	125	90	145	90	P41	20.000	0.37	CS				X	X				
171	VENT/DRAIN LINE FROM HBC-171. P-1061A	180	150	125	90	145	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
171	SSW RECIRC LINE FROM VALVE F002 TO SSW BASIN. P-1061A	180	150	125	90	145	90	P41	20.000	0.37	CS					X			OPEN ENDED PIPE SEE NOTE 6	
																	IWD-5222(e)			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
172	SSW FROM UNIT 2 PUMPS A & B DISCHARGE TO HBC-171. P-1061A	180	150	125	90	145	90	P41	20.000	0.37	CS					X	X			
173	VENT/DRAIN LINE FROM 4-HBC-73. P-1061A	180	150	125	90	145	90	P41	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 1
173	SSW BASIN TRANSFER LINE FROM 24-HBC-79 TO VALVE F007. P-1061A	180	150	125	90	145	90	P41	4.000	0.23	CS				X		IWD-1220(a)(1			
173	SSW BASIN TRANSFER LINE FROM VALVE F007 TO BASIN. P-1061A	180	150	125	90	145	90	P41	4.000	0.23	CS									NO ISI OR PT REQ. SEE NOTE 1
175	SSW FROM HBC-79 TO VALVE F016. P-1061A	180	150	120	90	145	90	P41	4.000	0.23	CS				X		IWD-1220(a)(1			
175	SSW FROM VALVE F015 TO VALVE F016. P-1061A	180	150	120	90	145	90	P41	4.000	0.23	CS									NO ISI OR PT REQ. SEE NOTE 1
176	SSW FROM VALVE F007A&B TO 4- HBC-173. P-1061A	180	150	125	90	145	90	P41	4.000	0.23	CS									NO ISI OR PT REQ. SEE NOTE 1
178	SSW VENT FROM HBC-136. P-1061B	180	150	130	115	160	115	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
178	VENT/DRAIN LINE. P-1061B	180	150	130	115	160	115	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
179	SSW DRAIN FROM HBC-134. P-1061B	180	150	135	90	160	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
182	SSW FROM LOOP B HBC-79 TO PLANT SERVICE WATER SYSTEM. P-1061B	180	150	115	90	150	90	P41	8.000	0.32	CS				X	X				
182	SSW FROM LOOP B TO PLANT SERVICE WATER SYS. FROM VALVE F042 TO VALVE F054. P-1072B	180	150	115	90	150	90	P44	8.000	0.32	CS									NO ISI OR PT REQ. SEE NOTE 1
183	PLANT SERVICE WATER TO SSW LOOP B RETURN HBC-82. P-1061B P-1072A	180	150	60	115	150	115	P41	8.000	0.32	CS				X	X				

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
183	SSW FROM VALVE F052 TO VALVE F067. P-1072A	180	150	60	115	150	115	P44	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 1
185	SSW FROM HBC-84 TO PSV F031A & B. P-1061B	120	150	60	120	95	120	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
188	INSTRUMENT LINE. P-1061A	180	150	130	115	160	115	P41	0.750	0.15	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
189	SERVICE AIR PENETRATIONS FOR AUX. BLDG. FROM JBD-26 TO JBD-177. P-1068A	150	120	100	90	150	120	P52	4.000	0.23	CS								NO ISI OR PT REQ. SEE NOTE 3
190	FIRE PROTECTION UNIT 1 AUX. BLDG. PENETRATION #47B FROM JBD-917 TO JBD-292. P-0035B	150	120	125	75	150	100	P64	10.000	0.36	CS								NO ISI OR PT REQ. SEE NOTE 3
191	FIRE PROTECTION UNIT 1 AUX. BLDG. PEENTRATION #60B FROM JBD-918 TO JBD-291. P-0035B	150	120	125	75	150	100	P64	10.000	0.36	CS								NO ISI OR PT REQ. SEE NOTE 3
194	FLUSHING INLET LINE TO HBC-16. P-1088E	100	150	20	125	50	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)		
195	FLUSHING INLET LINE TO HBC-19. P-1088E	250	150	175	125	210	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)		
196	DRW DRAINS FROM HBC-19 TO HBD-324. P-1088E	250	150	175	125	210	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)		
197	CRW DRAINS FROM HBC-25 HBD-325. P-1088E	250	150	165	105	210	150	G41	2.000	0.21	CS				X		IWD-1220(a)(1)		
198	SSW FROM FUEL POOL HEAT EX-CHANGERS FROM VALVE F201 TO HBC-87. P-1061B P-1063A	180	150	65	135	125	135	P41	8.000	0.32	CS				X		IWD-1220(c)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
198	SSW FROM FUEL POOL HEAT EX- CHANGERS FROM VALVE F201 TO 10-HBC-218. P-1063A	180	150	65	135	125	135	P42	8.000	0.32	CS					X	IWD-1220(c)			
199	SSW FROM HBC-86 TO VALVE F200. P-1061B P-1063A	180	150	80	90	125	90	P41	8.000	0.32	CS					X X				
199	SSW FROM VALVE F200 TO INLINE 8X10 REDUCER AND 8-HBC-216. P-1063A	180	150	80	90	125	90	P42	8.000	0.32	CS					X	IWD-1220(c)			
203	AUX. BLDG. PENETRATION #2AP- 48B FROM HBD-369 TO HBD-371. P-1065	150	150	20	110	95	130	P11	12.000	0.37	CS									NO ISI OR PT REQ. SEE NOTE 3
204	AUX. BLDG. PENETRATION #2AP- 76B FROM HBD-30 TO HBD-381. P-1065	150	150	100	100	115	150	P11	12.000	0.37	CS									NO ISI OR PT REQ. SEE NOTE 3
208	WATER FROM GBB-96 TO HCC-26. P-1085A P-1088E	250	150	55	140	55	140	E12	14.000	0.37	CS					X	IWD-1220(c)			
209	TRANSFER POOL WATER FROM HBC-34 TO HCC-21. P-1088C	250	150	60	140	200	150	G41	8.000	0.32	CS					X	IWD-1220(c)			
209	TRANSFER POOL WATER FROM HBC-34 TO HCC-21. P-1088C	250	150	60	140	200	150	G41	6.000	0.28	CS					X	IWD-1220(c)			
210	REACTOR WELL WATER FROM HBC-34 TO HCC-36. P-1088C	80	150	60	140	60	150	G41	12.000	0.37	CS						IWD-1220(c) IWD-5222(e)			OPEN ENDED PIPE SEE NOTE 6
211	AUX. BLDG. PENETRATION #2AP- 48B FROM HBD-336 TO HBD-337. P-1065	150	150	95	110	110	130	P11	8.000	0.32	CS									NO ISI OR PT REQ. SEE NOTE 3
212	AIR FROM FUEL HANDLING AREA EXHAUST FANS C002A & B-N TO VENT. P-1104A	5	150	0	110	0	110	T42	44.000	0.37	CS									NO ISI OR PT REQ. SEE NOTE 3
213	OUTSIDE AIR TO FUEL POOL SWEEP SUPPLY FANS C003A & B-N. P-1104A	5	150	0	95	0	100	T42	36.000	0.37	CS									NO ISI OR PT REQ. SEE NOTE 3

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
214	OUTSIDE AIR TO FUEL HANDLING AREA SUPPLY FANS C001A & B-N. P-1104A	5	150	0	95	0	100	T42	8.000	0.32	CS									NO ISI OR PT REQ. SEE NOTE 3
215	COMPONENT COOLING WATER HEADERFROM JBD-333 AND HBC-199 TO HBC-216. P-1063A	150	150	55	95	125	100	P42	10.000	0.36	CS				X		IWD-1220(c)			
216	COMPONENT COOLING WATER FROM HBC-215 TO FUEL POOL HEAT EX- CHANGERS B001A & B. P-1063A	150	150	55	95	125	100	P42	8.000	0.32	CS				X		IWD-1220(c)			
217	COMPONENT COOLING WATER FROM FUEL POOL HEAT EXCHANGERS B001A & B TO HBC- 218. P-1063A	150	150	45	115	110	125	P42	8.000	0.32	CS				X		IWD-1220(c)			
218	COMPONENT COOLING WATER EX- HAUST HEADER FROM HBC-217 TO 10-HCB-218. P-1063A	150	150	45	115	110	125	P42	8.000	0.32	CS				X		IWD-1220(c)			
218	FROM 8-HBC-218 TO JBD-360. P-1063A	150	150	45	115	110	125	P42	10.000	0.36	CS				X		IWD-1220(c)			
219	MISCELLANEOUS VENTS ON COM- PONENT COOLING WATER SYSTEM. P-1063A	150	150	50	110	125	125	P42	0.750	0.15	CS				X		IWD-1220(a)(1)			
221	CHRW VENTS FROM FUEL POOL HEATEXCHANGERS B001A & B TO JBD- 637. P-1063A	150	150	50	110	65	125	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			
222	SPENT FUEL POOL WATER FROM HBC-229 TO VALVE F057. P-1088E	80	200	50	140	50	200	G41	18.000	0.37	CS				X		IWD-1220(c)			
222	SPENT FUEL POOL WATER FROM VALVE F057 TO GBB-63. P-1088E P-1085C	80	200	50	140	50	200	E12	18.000	0.37	CS									NO ISI OR PT REQ. SEE NOTE 1

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
223	RADIAL WELL WATER FROM YARD/AUX. BLDG. PENETRATION TO JBD-105. P-1072A	125	100	65	65	120	75	P44	36.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 3
224	PLANT SERVICE WATER FROM JBD-105 TO JBD-123. AUX. BLDG. PENETRATION #2AP-29A. P-1072A	125	100	65	65	120	75	P44	30.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 3
225	PLANT SERVICE WATER TO AND FROM JBD-77 AND JBD-150. AUX. BLDG. PENETRATION #2AP-9A. P-1072A	125	115	50	100	120	105	P44	24.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 3
226	PLANT SERVICE WATER FROM JBD-150 TO JBD-151. AUX. BLDG. PENETRATION #2AP-57A. P-1072A	125	115	50	100	120	105	P44	24.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 3
227	SPENT FUEL POOL WATER FROM HBC-222 TO VALVE F058. P-1088E	80	200	50	140	50	200	G41	18.000	0.37	CS								
227	SPENT FUEL POOL WATER FROM VALVE F058 TO LPCS SYSTEM HBB-14. P-1088E P-1087	80	150	50	110	50	150	E21	18.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 1
228	SPENT FUEL POOL WATER FROM HBC-229 VALVE F059. P-1088E	80	200	50	140	50	200	G41	18.000	0.37	CS				X		IWD-1220(c)		
228	SPENT FUEL POOL WATER FROM VALVE F059 TO RHR SYS. LOOP A & B HBC-279. P-1088E P-1085A	80	200	50	140	50	200	E12	18.000	0.37	CS				X		IWD-1220(c)		
229	SPENT FUEL POOL WATER HEADER FROM HCC-24 TO HBC-228 AND HBC-222. P-1088E	80	150	50	110	50	150	G41	18.000	0.37	CS				X		IWD-1220(c)		
232	DRAIN CONNECTION FROM YS D004 TO HBD-558. P-1093A	150	150	30	70	35	100	P81	1.000	0.17	CS				X		IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
233	OIL FROM FUEL OIL DAY TANK A002 TO DIESEL GEN. FUEL OIL STORAGE TANK A001. P-1093A	150	150	10	70	35	75	P81	2.000	0.21	CS						IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)		
234	DIESEL GEN. FUEL OIL TRANSFER PUMP C001-C DISCH. VALVE F004 TO FUEL OIL DAY TANK A002. P-1093A	150	150	30	70	35	75	P81	2.000	0.21	CS						IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)		
234	FROM DG FUEL OIL TRANSFER PUMPTO VALVE F004. P-1093A	150	150	30	70	35	75	P81	2.000	0.21	CS				X		IWD-1220(a)(1)		
235	FUEL OIL PUMPS C002-C & C003 SUCTION FROM FUEL OIL DAY TANK A002. P-1093A P-1093B,C	150	150	5	70	10	100	P81	1.000	0.17	CS				X		IWD-1220(a)(1)		
235	FUEL OIL PUMPS SUCTION FROM FROM FUEL OIL DAY TANK A002 TO 1/2X1 REDUCER. P-1093A	150	150	5	70	10	100	P81	1.000	0.17	CS				X		IWD-1220(a)(1)		
235	FUEL OIL PUMPS C002-C & C003 SUCTION FROM FUEL OIL DAY TANKA002 SECTION BETWEEN REDUCERS. P-1093A	150	150	5	70	10	100	P81	1.500	0.20	CS				X		IWD-1220(a)(1)		
237	FUEL OIL TRANSFER PUMPS C002A-A & B-B DISCHARGE TO FUEL OIL TANKS A004A&B TO VALVE F004. P-1070A P-1070B	150	150	30	70	50	75	P75	2.000	0.21	CS				X		IWD-1220(a)(1)		
237	DG FUEL OIL TRANSFER PUMP DISCHARGE FROM VALVE F004 TO DAY TANK. P-1070A P-1070B	150	150	30	70	50	75	P75	2.000	0.21	CS						IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)		
238	FUEL OIL DAY TANKS A004A & B OVERFLOW TO FUEL OIL STORAGE TANKS FROM VALVE F005 TO TANK. P-1070A P-1070B	150	150	5	70	10	75	P75	2.000	0.21	CS						IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)		
238	FUEL OIL DAY TANKS OVERFLOW FROM DAY TANKS TO VALVE F005. P-1070A P-1070B	150	150	5	70	10	75	P75	2.000	0.21	CS				X		IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
239	MOTOR DRIVEN FUEL OIL BOOSTER PUMP SUCTION (PORTION THAT NOTE 3 APPLIES TO). P-1070A P-1070B	150	150	5	70	10	100	P75	2.500	0.20	CS									NO ISI OR PT REQ. SEE NOTE 2
239	MOTOR DRIVEN FUEL OIL BOOSTER PUMPS SUCTION FROM DAY TANKS A004A & B TO VALVE F016A&B. P-1070A P-1070B	150	150	5	70	10	100	P75	2.500	0.20	CS				X		IWD-1220(a)(1			
240	FUEL OIL BYPASS OUTLETS FROM STANDBY DIESEL GEN. E001A & B. P-1070A,C P-1070B,D	150	150	5	70	10	100	P75	0.500	0.14	CS				X		IWD-1220(a)(1			
241	DRAINS FROM FUEL OIL DAY TANKS A004A & B TO HBD-238. P-1070A P-1070B	150	150	5	70	10	100	P75	1.000	0.17	CS				X		IWD-1220(a)(1			
244	FUEL OIL FROM DC BOOSTER PUMP TO 2X1 REDUCER. P-1070A P-1070B	150	150	5	70	10	100	P75	2.000	0.15	CS									NO ISI OR PT REQ. SEE NOTE 2
244	FUEL OIL, FROM HBC-239 TO 2 x 1 1/4 RED. P-1070A P-1070B	150	150	5	70	10	100	P75	2.000	0.15	CS				X		IWD-1220(a)(1			
244	FUEL OIL, FROM 2 X 1 1/4 RED TO FUEL OIL STRAINER P-1070C P-1070D	150	150	5	70	10	100	P75	1.250	0.14	CS				X		IWD-1220(a)(1			
245	CHRW DRAINS FROM TUBE SIDE OF FUEL POOL HEAT EXCHANGERS B001A & B TO JBD-428. P-1063A	150	150	50	110	125	125	G41	1.000	0.17	CS				X		IWD-1220(a)(1			
246	FLUSHING CONNECTION. P-1063A	150	150	55	95	125	125	P42	1.000	0.17	CS				X		IWD-1220(a)(1			
246	FLUSHING CONNECTION. P-1063A	150	150	55	95	125	125	P42	3.000	0.21	CS				X		IWD-1220(a)(1			
246	FLUSHING CONNECTION DOWNSTREAM OF VALVE F209. P-1063A	150	150	55	95	125	125	P42	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 1
246	FLUSHING CONNECTION TO 215. P-1063A	HBC-150	150	55	95	125	125	P42	1.000	0.17	CS				X		IWD-1220(a)(1			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
247	CHILLED WATER FROM JBD-675 TO JBD-642. P-1109F	150	150	100	70	110	70	P71	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 3
248	CHILLED WATER FROM JBD-648 TO JBD-661. P-1109F	150	150	100	50	110	70	P71	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 3
249	CHILLED WATER FROM HBD-736 TO JBD-737. P-1109D	150	150	115	50	120	70	P71	2.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 3
250	CHILLED WATER FROM JBD-743 TO JBD-735. P-1109D	150	150	115	70	120	70	P71	2.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 3
251	AUX. STEAM FROM HBD-655 TO HBD-656 SUPPLY TO RCIC TURBINE M-0036B	150	365	110	345	130	355	E51	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 2
252	INSTRUMENT AIR FROM HND-19 TO AUX. BLDG. HBD-1263. P-1067A P-1067E	150	120	100	100	150	120	P53	2.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 3
254	INSTRUMENT AIR FROM JDD-28 TO JDD-27. AUX. BLDG. TO DG. BLDG. PENETRATION. M-1067D	150	120	100	100	150	120	P53	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 2
278	FLUSHING WATER FROM GBB-46 TO HBC-208. P-1085B P-1088E	220	302	124	125	208	302	E12	14.000	0.37	CS								
279	FLUSHING WATER FROM HBC-228 TO GBB-107 AND GBB-33. P-1085A P-1085B	80	200	50	140	50	200	E12	18.000	0.37	CS				X		IWD-1220(c)		
281	TEST CONNECTION FROM HBC-32. P-1088C	250	150	60	105	175	150	G41	0.750	0.15	CS				X		IWD-1220(a)(1		
282	TEST CONNECTIONS FROM HBC-344. P-1070A P-1070B	150	150	10	70	50	100	P75	1.000	0.17	CS				X		IWD-1220(a)(1		
283	BLOWOFF CONNECTION FROM YS D006A & B TO HBD-217. P-1070A P-1070B	150	150	30	70	50	100	P75	1.000	0.17	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
284	FLUSHING WATER FROM HBD-788 TO HBD-809. P-1085B	30	200	20	180	20	180	E12	4.000	0.23	CS								NO ISI OR PT REQ. SEE NOTE 3
286	FUEL OIL RETURN FROM HPCS DIESEL GENS. 001 TO DAY TANK A002. P-1093A P-1093B,C	150	150	5	80	10	100	P81	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
288	AUX. BLDG. FLOOR DRAIN WATER FROM HBD-714 TO HBD-808. P-1094C	150	150	20	105	30	130	P45	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 3
289	AUX. BLDG. EQUIP. DRAIN WATER FROM HBD-713 TO HBD-807. P-1094C	150	150	40	120	55	130	P45	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 3
291	FILTER TEST CONNECTION IN CONTROL ROOM FRESH AIR UNITS D002A-A & B-B. P-0049	150	150	0	80	0	150	Z51	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1
293	FPC & CU WATER FROM HBC-47 TO HCC-11. P-1088E	250	150	105	105	60	150	G41	6.000	0.28	CS				X		IWD-1220(c)		
294	FPC & CU WATER FROM HBC-34 TO HCC-27. P-1088C	80	150	60	105	60	150	G41	4.000	0.23	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
296	DRAINS FROM HBC-83 AND HBC-157. P-1061B	120	150	70	115	100	115	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
297	DRW VENT FROM HBC-74, HBC-157 AND HBC-158. P-1061B	120	150	70	115	100	115	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
298	TEST CONNECTIONS FROM HBC-82. P-1061B	180	150	90	130	165	140	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
299	TEST CONNECTION FROM HBC-83. P-1061B	120	150	85	90	95	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
300	TEST CONNECTION FROM HBC-79. P-1061B	180	150	140	90	165	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
301	TEST CONNECTION FROM HBC-84. P-1061B	120	150	60	120	95	120	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
302	SSW FOR DRYWELL PURGE COM- PRESSOR FROM HBC-199 TO HBB- 142. P-1061B	180	150	90	90	135	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
303	SSW FROM 2-HBB-303 TO REDUCINGTEE 3 X 2 X 1 1/2. P-1061B	180	150	90	90	135	90	P41	3.000	2.16	CS				X		IWD-1220(a)(1		
303	FROM 3-HBC-303 TO 1.5-HBC-303. P-1061B	180	150	90	90	135	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1		
303	FROM VALVE F169 TO 3-HBC-303 AND 3-HBC-303 TO DRYWELL PURGE COMPRESSOR COOLER. P-1061B	180	150	90	90	135	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
303	FROM 1.5-HBC-303 TO DRYWELL PURGE COMPRESSOR COOLER. P-1061B	180	150	90	90	135	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
304	TEST CONNECTION FROM HBC-303. P-1061B	180	150	90	90	135	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
305	TEST CONNECTION FROM HBC-306. P-1061B	180	150	75	105	135	150	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
306	SSW FROM DRYWELL PURGE COMP. TO INLINE 2X3 REDUCER AND FROM 2X3 REDUCER TO VALVE F168. P-1061B	180	150	75	105	135	150	P41	2.000	0.21	CS				X		IWD-1220(a)(1		
306	SSW FROM DRYWELL PURGE COM- PRESSORS TO 1 X 1 1/2 REDUCER. P-1061B	180	150	75	105	135	150	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
306	SSW FROM DRYWELL PURGE COM- PRESSOR FROM 1-HBC-306 TO 3- HBC-306. P-1061B	180	150	75	105	135	150	P41	1.500	0.20	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
306	SSW FROM DRYWELL PURGE COMPRESSOR FROM 2-HBC-306 TO 2-HBC-306. P-1061B	180	150	75	105	135	150	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
307	SSW FROM HBB-143 TO HBC-198. P-1061B	180	150	75	105	135	105	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
308	DRW DRAIN FROM HBC-89 TO 870. P-1061C	HBD-180	150	140	90	150	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
309	DRW DRAIN FROM HBC-90 TO 867. P-1061C	HBD-180	150	115	105	150	105	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
310	TBCW FROM VALVE F174 TO VALVE F154. P-1061D	180	150	105	115	160	115	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
310	FROM VALVE F154 TO AUX. BLDG. YARD. P-1061D	180	150	105	115	160	115	P44	3.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 2 & 3
310	TBCW FROM VALVE F174 TO HBC-116. P-1061D	180	150	105	115	160	115	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
311	FROM VALVE F155 TO AUX. BLDG. YARD. P-1061D	180	150	140	90	160	90	P44	3.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 2 & 3
311	SSW FROM VALVE F155A TO VALVE F155B. P-1061D	180	150	140	90	160	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
311	SSW FROM HBC-115 TO VALVE F155. P-1061D	180	150	140	90	160	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
312	SSW FOR DRYWELL PURGE COMPRESSOR FROM HBC-91 TO HBB-146. P-1061B P-1061D	180	150	90	90	135	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1		
313	SSW FROM HBB-148 TO HBC-92. P-1061B P-1061D	180	150	75	105	135	105	P41	3.000	0.21	CS				X		IWD-1220(a)(1		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
314	FPC AND CU BACKWASH TRANSFER PUMP C200-N DISCHARGE FROM HBD-86 TO HBD-83. P-1089	100	150	70	110	80	150	G46	3.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 3
315	SSW FROM HBB-146 TO DRYWELL PURGE COMPRESSOR FROM VALVE F169 TO VALVE F208. P-1061D	180	150	90	90	135	90	P41	3.000	0.21	CS				X		IWD-1220(a)(1			
315	FROM 3-HBC-315 TO 1-HBC-315. P-1061D	180	150	90	90	135	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1			
315	FROM 1.5-HBC-315 TO LUBE OIL COOLER. P-1061D	180	150	90	90	135	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1			
315	FROM VALVE F208 TO AFTER-COOLER. P-1061D	180	150	90	90	135	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1			
315	FROM AFTERCOOLER TO 3X2 REDUCER. P-1061D	180	150	90	90	135	90	P41	2.000	0.21	CS				X		IWD-1220(a)(1			
316	TEST CONNECTION FROM HBC-315. P-1061D	180	150	90	90	135	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
317	TEST CONNECTION FROM HBC-318. P-1061D	180	150	75	105	135	150	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
318	FROM LUBE OIL COOLER TO 1X1 1/2 REDUCER. P-1061D	180	150	75	105	135	150	P41	1.000	0.17	CS				X		IWD-1220(a)(1			
318	FROM AFTERCOOLER TO INLINE 2X3 REDUCER. P-1061D	180	150	75	105	135	150	P41	1.500	0.20	CS				X		IWD-1220(a)(1			
318	SSW FROM DRYWELL PURGE COMPRESSOR C001B-B INLINE REDUCER TO VALVE F168. P-1061D	180	150	75	105	135	150	P41	3.000	0.21	CS				X		IWD-1220(a)(1			
319	TEST CONNECTION FROM HBC-313. P-1061D	180	150	75	105	135	105	P41	0.750	0.15	CS				X		IWD-1220(a)(1			
320	TEST CONNECTION FROM HBC-312. P-1061D	180	150	90	90	135	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1			

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
321	TEST CONNECTION FROM HBC-307. P-1061B	180	150	75	105	135	105	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
322	TEST CONNECTION FROM HBC-302. P-1061B	180	150	90	90	135	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
324	SAMPLE RETURN LINE FROM 1X3/4 REDUCER TO HBC-82. P-1061B	180	150	90	130	165	140	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
324	SSW TO AND FROM SAMPLE PANEL J006 AND 1X3/4 REDUCER AND VALVE F198. P-1061B	180	150	90	130	165	140	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
324	SAMPLE RETURN LINE FROM VALVE F198 TO HBC-82. P-1061B	180	150	90	130	165	140	P41	1.000	0.17	CS				X		IWD-1220(a)(1		
332	JACKET WATER FROM COOLERS B006A & B TO ENGINE JACKET WATER INLETS. P-1070A P-1070B	150	250	40	160	75	175	P75	8.000	0.32	CS							NO ISI OR PT REQ. SEE NOTE 2	
333	JACKET WATER FROM TURBOCHARGER INTERCOOLERS TO 8-HBC-333. P-1070C P-1070D	150	250	40	160	75	175	P75	6.000	0.28	CS							NO ISI OR PT REQ. SEE NOTE 2	
333	JACKET WATER FROM TURBOCHARGER INTERCOOLERS TO 6-HBC-333 P-1070C P-1070D	150	250	40	160	75	175	P75	4.000	0.23	CS							NO ISI OR PT REW., SEE NOTE 2	
333	JACKET WATER FROM 6-HBC-333 TO 8-HBC-332 P-1070C P-1070D	150	250	40	160	75	175	P75	8.000	0.32	CS							NO ISI OR PT REQ., SEE NOTE 2	
334	JACKET WATER FROM JACK WATER COOLERS B004A & B TO TURBO- CHARGER INTERCOOLERS. P-1070A,B P-1070C,D	150	250	50	150	75	175	P75	6.000	0.28	CS							NO ISI OR PT REQ. SEE NOTE 2	
334	JACKET WATER FROM 6-HBC-334 TO TURBOCHARGER INTERCOOLERS P-1070C P-1070D	150	250	50	150	75	175	P75	4.000	0.23	CS							NO ISI OR PT REQ., SEE NOTE 2	

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		PSIG	TEMP	NORMAL PSIG	TEMP PSIG	MAXIMUM PSIG	TEMP PSIG												
335	ENGINE JACKET WATER OUTLET TO HEATERS B002A & B-N. P-1070A,B P-1070C,D	150	250	20	175	75	175	P75	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 2
336	ENGINE DRIVEN JACKET WATER PUMPS SUCTION FROM WATER HEATERS B002A & B-N. P-1070A,B P-1070C,D	150	250	30	175	75	175	P75	10.000	0.36	CS								NO ISI OR PT REQ. SEE NOTE 2
337	ENG. DRIVEN JKET. WTR. PUMPS DISCH. TO JKET. WTR. COL. B004A&B & LUBE OIL COL. B006A&B. P-1070A,B P-1070C,D	150	250	60	175	75	175	P75	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 2
340	FUEL CONSUMPTION TEST CONNECTION FROM HBC-239. P-1070A P-1070B	150	150	5	70	10	100	P75	2.000	0.21	CS				X		IWD-1220(a)(1)		
341	FUEL CONSUMPTION TEST CONNECTION FROM HBC-244. P-1070A P-1070B	150	150	5	70	10	100	P75	2.000	0.21	CS				X		IWD-1220(a)(1)		
343	INLET FOR PSV F026A&B FROM FUEL OIL RETURN TO 1.5-HBC- 343. P-1070C P-1070D	150	150	75	70	125	100	P75	0.750	0.15	CS				X		IWD-1220(a)(1)		
343	INLET FOR PSV F026A & B FROM FUEL OIL RETURN. P-1070A,B P-1070C,D	150	150	75	70	125	100	P75	1.500	0.20	CS				X		IWD-1220(a)(1)		
344	DISCHARGE FROM PSV F026A & B TO FUEL OIL DAY TANKS A004A & B. P-1070A P-1070B	150	150	5	70	10	100	P75	2.000	0.21	CS				X		IWD-1220(a)(1)		
345	VENT FROM HBC-82 AND HBC-84. P-1061A	180	150	90	130	165	140	P41	0.750	0.15	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6
346	SSW FROM HBC-79 TO PUMP MOTOR BEARING COOLERS C001A-A & B- B.FROM HBC-79 TO VALVE F199. P-1061A P-1061B	180	150	140	90	165	90	P41	0.500	0.14	CS				X		IWD-1220(a)(1)		
346	SSW FROM HBC-79 TO PUMP MOTOR BEARING COOLERS, FROM VALVE F199 TO COOLERS. P-1061A	180	150	140	90	165	90	P41	0.500	0.14	CS						IWD-1220(a)(1) IWD-5222(e)		OPEN ENDED PIPE SEE NOTE 6

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
347	SSW FROM PUMP MOTOR BEARING COOLERS C001A-A & B-B TO BASINS A & B. P-1061A P-1061B	180	150	15	120	20	125	P41	0.500	0.14	CS						IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)			
348	VARIOUS HIGH POINT VENTS ON SSW SYSTEM TO HBD-1116. P-1061B	180	150	110	90	150	120	P41	0.750	0.15	CS				X		IWD-1220(a)(1)			
349	VARIOUS HIGH POINT VENTS ON THE FPC & CU SYSTEM. P-1088C P-1088E	80	150	40	105	60	150	G41	0.750	0.15	CS						IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(f)			
349	VARIOUS HIGH POINT VENTS ON THE FPC & CU SYSTEM. P-1088C	80	150	40	105	60	150	G41	0.750		CS				X		IWD-1220(a)(1)			
350	VARIOUS LOW POINT CRW DRAINS ON FPC & CU SYSTEMS. P-1088E	150	200	50	140	60	200	G41	1.000	0.17	CS				X		IWD-1220(a)(1)			
350	VARIOUS LOW POINT CRW DRAINS ON FPC & CU SYSTEM. P-1088C P-1088E	150	200	50	140	60	200	G41	1.000	0.17	CS						IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(f)			
351	CRD PUMPS SUCTION FROM HBD-1124 TO HBD-382. AUX. BLDG. PENETRATION #2AP-98B. P-1081A	150	140	15	130	20	140	N19	6.000	0.28	CS									NO ISI OR PT REQ. SEE NOTE 3
352	BYPASS AROUND VALVE F021 TO AND FROM HBC-28. P-1088E	250	150	165	105	200	150	G41	10.000	0.36	CS				X		IWD-1220(c)			
353	CHRW DRAINS FROM HBC-218. P-1063A	150	150	55	95	110	100	P42	1.000	0.17	CS				X		IWD-1220(a)(1)			
354	FUEL POOL WATER BYPASS AROUND VALVE F002 FROM AND TO HBC-41. P-1088E	250	150	40	100	60	130	G41	3.000	0.21	CS						IWD-1220(a)(1)			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(e)			
355	BACKWASH TRANSFER PUMP DIS-CHARGE FROM HBD-1013 TO HBD-719. P-1080B	150	150	35	100	110	140	G36	4.000	0.23	CS									NO ISI OR PT REQ. SEE NOTE 3

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
356	SHELL SIDE DRAIN FROM JACKET WATER COOLERS TO HBD-1155. P-1093B P-1093C	150	200	100	185	150	185	P81	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2
357	DRAIN CONNECTION FROM DG FUEL OIL DAY TANK. P-1093A	150	150	2	70	5	100	P81	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
358	MISC. VENTS IN STANDBY SERVICEWATER SYSTEM. P-1061D	180	150	140	105	150	105	P41	1.000	0.15	CS				X		IWD-1220(a)(1)		
358	MISC. VENTS IN STANDBY SERVICEWATER SYSTEM. P-1061B	180	150	140	105	150	105	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
358	MISC. VENTS IN STANDBY SERVICEWATER SYSTEM. P-1061C P-1061D	180	150	140	105	150	105	P41	0.750	0.17	CS				X		IWD-1220(a)(1)		
358	DRAIN FROM 2 INCH HBC-167 TO VALVE F283 P-1061B	180	150	140	105	150	105	P41	0.750	.154	CS								NO ISI OR PT REQ., SEE NOTE 1
359	MISC. DRAINS IN STANDBY SERVICE WATER SYSTEM. P-1061D	180	150	140	105	150	105	P41	2.000	0.21	CS				X		IWD-1220(a)(1)		
359	MISC. DRAINS IN STANDBY SERVICE WATER SYSTEM. P-1061B	180	150	140	105	150	105	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
359	MISC. DRAINS IN STANDBY SERVICE WATER SYSTEM. P-1061C P-1061D	180	150	140	105	150	105	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
359	DRAIN FROM 2 INCH HBC-167 TO VALVE F282 P-1061B	180	150	140	105	150	105	P41	1.000	0.17	CS								NO ISI OR PT REQ., SEE NOTE 1
360	FROM VALVES F060A,B,C & D TO FLANGES. P-1070C P-1070D	150	200	70	150	80	185	P75	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2
362	BLOW-OFF CONNECTION FROM Y-STRAINER D007. P-1070A P-1070B	150	150	5	70	10	100	P75	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 2

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
363	EMERGENCY FILL CONNECTION TO HBC-233. P-1093A	150	150	10	70	35	100	P81	2.000	0.21	CS						IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
363	EMERGENCY FILL LINE TO FUEL OIL DAY TANK LINE HBC-238. P-1070A P-1070B	150	150	10	70	35	100	P75	2.000	0.21	CS						IWD-5222(f) IWD-1220(a)(1)		OPEN ENDED PIPE SEE NOTE 6
376	FROM FUEL OIL STORAGE TANK TO JBD-416. P-1070A P-1070B	10	125	2	70	5	100	P75	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
377	FROM FUEL OIL STORAGE TANK TO JBD-394. P-1093A	10	125	2	70	5	100	P81	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
380	LUBE OIL DRAIN TO HBD-1274. P-1093B P-1093C	125	200	0	120	5	185	P81	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2
382	CONTAINMENT POOL'S LINE DRAIN TO LEAK DETECTION SYSTEM. P-1088D P-1090A	30	150	20	125	30	150	G41	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
382	VENT/DRAIN LINE. P-1061B	30	150	20	125	30	150	P41	3.000	0.21	CS				X		IWD-1220(a)(1)		
383	FROM FUEL POOL HEAT EXCHANGE TO PSV F301. P-1088E	250	150	175	125	210	150	G41	0.750	0.15	CS				X		IWD-1220(a)(1)		
384	DRAIN FROM HBC-235. P-1093A	150	150	5	70	10	100	P81	1.000	0.17	CS				X		IWD-1220(a)(1)		
386	DRAIN ON HBC-286. P-1093A	150	150	5	80	10	100	P81	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
387	VENT ON HBC-286. P-1093A	150	150	5	80	10	100	P81	0.750	0.15	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
388	INLET FOR PSV-F029 A & B. P-1063A	150	150	55	95	150	100	P42	0.750	0.15	CS				X		IWD-1220(a)(1)		
389	SRV BONNET VENT DISCHARGE LINE. P-1077E	150	150	0	80	70	150	B21	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
390	SRV BONNET VENT VACUUM RELIEF LINE. P-1077E	150	150	0	80	10	150	B21	2.000	0.21	CS								NO ISI OR PT REQ. SEE NOTE 1
390	SRV BONNET VENT VACUUM RELIEF LINE. P-1077E	150	150	0	80	10	150	B21	2.500	0.27	CS								NO ISI OR PT REQ., SEE NOTE 1
390	SRV BONNET VENT VACUUM RELIEF LINE. P-1077E	150	150	0	80	10	150	B21	3.000	0.30	CS								NO ISI OR PT REQ., SEE NOTE 1
391	RHR PUMPS SEAL COOLER VENTS. P-1061C P-1061D	180	150	140	90	160	90	P41	0.500	0.20	CS				X		IWD-1220(a)(1		
391	RHR PUMPS SEAL COOLER VENTS. P-1061D	180	150	140	90	160	90	P41	0.250	0.14	CS				X		IWD-1220(a)(1		
391	RHR PUMPS SEAL COOLER VENTS. P-1061B P-1061C	180	150	140	90	160	90	P41	0.250	0.20	CS				X		IWD-1220(a)(1		
392	RHR PUMPS SEAL COOLER DRAINS. P-1061D	180	150	140	90	160	90	P41	0.500	0.14	CS				X		IWD-1220(a)(1		
392	RHR PUMPS SEAL COOLER DRAINS. P-1061B P-1061C	180	150	140	90	160	90	P41	0.500	0.14	CS				X		IWD-1220(a)(1		
393	POCKET DRAINS FROM 1"-HBC-6. P-1088C	60	150	10	110	35	150	G41	1.000	0.17	CS				X		IWD-1220(a)(1		
394	SENSING LINES FOR SSW INSTRUMENTS. P-1061A	120	150	60	120	95	120	P41	0.750	0.15	CS				X		IWD-1220(a)(1		
396	VENT FROM HBC-229. P-1088E	80	150	50	110	50	150	G41	0.750	0.15	CS				X		IWD-1220(a)(1		
398	AUX. BLDG. FIRE WATER ISOL. VALVES BYPASS LINE. P-0035B	150	120	125	75	150	100	P64	4.000	0.23	CS								NO ISI OR PT REQ. SEE NOTE 3
399	STANDBY DIESEL J.W. COOLER VENT. P-1070A P-1070B	150	200	35	180	50	190	P75	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2
400	STANDBY DIESEL L.O. SUMP TANK DRAIN. P-1070A P-1070B	25	200	10	180	20	190	P75	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
401	STANDBY DIESEL L.O. FILTER DRAIN. P-1070A P-1070B	75	200	60	180	70	190	P75	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2
402	STANDBY DIESEL L.O. PREFILTER DRAIN. P-1070A P-1070B	75	200	60	180	70	190	P75	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2
403	STANDBY DIESEL L.O. COOLER DRAIN. P-1070A P-1070B	75	200	60	180	70	190	P75	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2
404	CHILLER RELIEF VALVE DISCHARGE HEADER. P-1109A	125	104	0	0	125	104	P71	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 3
405	STANDBY DIESEL GENERATOR J.W. COOLER DRAIN. P-1070A P-1070B	150	200	35	180	50	190	P75	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2
406	SSW TEST CONN. FROM HBC-91. P-1061C	180	150	105	90	150	90	P41	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1
407	SSW LUBE OIL LEVEL INDICATOR LINE FROM COOLING TOWER FOR GEARBOX. P-1061A	20	180	2	100	5	150	P41	1.250	0.19	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
408	SSW LUBE OIL VENT LINE FROM COOLING TOWER FROM GEARBOX. P-1061A	20	180	0	100	5	150	P41	0.750	0.15	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE SEE NOTE 6
409	SSW TO FPC & CU PUMP ROOM COOLER FROM HBC-199. P-1061B	180	150	80	90	125	90	P41	1.500	0.20	CS				X		IWD-1220(a)(1)		
410	SSW FROM FPC & CU PUMP ROOM COOLER TO HBC-198. P-1061B	180	150	75	105	125	110	P41	1.500	0.20	CS				X		IWD-1220(a)(1)		
411	PSV F293 INLET FROM SSW SUPPLYLINE TO FPC & CU ROOM COOLER HBC-409. P-1061B	180	150	80	90	125	90	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
412	VENT/DRAIN LINE. P-1061B	180	150	80	90	125	90	P41	1.000	0.17	CS					X	IWD-1220(a)(1)			
412	VENT/DRAIN LINE. P-1061B	180	150	80	90	125	90	P41	0.750	0.15	CS					X	IWD-1220(a)(1)			
413	SSW DRAIN FROM HBC-409 AND 410. P-1061B	180	150	75	105	125	110	P41	1.000	0.17	CS					X	IWD-1220(a)(1)			
414	CAPPED DRAIN FROM HBC-407. P-1061A	20	180	2	100	5	150	P41	1.000	0.17	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE 6 SEE NOTE	
415	AIR LINE TO PIPING PENETRATION ROOM FOR CONTAINMENT. P-1111A	150	195	100	120	125	120	M61	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 3	
416	AIR LINE TO PIPING PENETRATION ROOM FOR DRYWELL. P-1111A	150	195	100	120	125	120	M61	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 3	
419	COMPONENT COOLING WATER SUPPLY TO POST-ACCIDENT SAMPLING SYS. FROM JBD-840 TO JBD-1098. P-1063B	125	150	60	95	80	100	P42	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 3	
420	COMPONENT COOLING WATER FROM POST-ACCIDENT SAMPLING SYSTEM TO JBD-843. P-1063B	125	150	55	110	75	115	P42	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 3	
421	DRAIN FROM HBC-91. P-1061C	50	100	5	80	25	100	P41	2.000	0.21	CS					X	IWD-1220(a)(1)			
422	SSW PARALLEL RETURN FROM ESF COOLERS 139' EAST (A) & 166' (A). P-1061C	180	150	100	95	150	95	P41	2.000	0.21	CS					X	IWD-1220(a)(1)			
503	EQUALIZING LINE BETWEEN SSW BASIN FROM INLINE 3X6 REDUCER TO INLINE 3X6 REDUCER. P-1061A	15	100	1	70	-11	90	P41	3.000	0.21	CS						IWD-1220(a)(1) IWD-5222(f)		OPEN ENDED PIPE 6 SEE NOTE	

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
503	EQUALIZING LINE BETWEEN SSW BASINS TO/FROM INLINE 3X6 REDUCER TO/FROM BASIN. P-1061A	15	100	1	70	-11	90	P41	6.000	0.28	CS						X		OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(f)		
504	SSW FROM HBC-79 TO PSV F299. P-1061A	180	150	140	90	165	90	P41	6.000	0.28	CS				X	X			
505	DISCH. FROM PSV-F299 TO SSW BASIN. P-1061A	10	90	0	90	5	90	P41	8.000	0.32	CS					X			OPEN ENDED PIPE SEE NOTE 6
																	IWD-5222(f)		
506	LUBE OIL STANDBY DIESEL SAMPLE LINE TO 1/4-HBC-506. P-1070A	75	200	60	180	70	190	P75	0.500	0.14	CS								NO ISI OR PT REQ. SEE NOTE 2
506	LUBE OIL STANDBY DIESEL SAMPLE LINE FROM 1/2-HBC-506. P-1070A	75	200	60	180	70	190	P45	0.250	0.11	CS								NO ISI OR PT REQ. SEE NOTE 2
509	VENT ON SSW SUPPLY LINE TO FUEL POOL HEAT EXCHANGERS. P-1061B	180	150	80	90	125	90	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
510	VENT ON SSW RETURN LINE. P-1061B	180	150	65	135	125	135	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
510	VENT/DRAIN LINE. P-1063A	180	150	65	135	125	135	P42	0.750	0.15	CS				X		IWD-1220(a)(1)		
511	VENT/DRAIN LINE. P-1061B	180	150	65	135	125	135	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
512	VENT/DRAIN LINE. P-1061B	180	150	65	135	125	135	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
513	VENT/DRAIN LINE. P-1061B	180	150	65	135	125	135	P41	0.750	0.15	CS				X		IWD-1220(a)(1)		
514	VENT/DRAIN LINE. P-1061B	180	150	65	135	125	135	P41	1.000	0.17	CS				X		IWD-1220(a)(1)		
515	FLUSHING CONNECTION FOR SSW. P-1061C P-1061D	180	150	115	90	150	90	P41	2.000	0.20	CS				X		IWD-1220(a)(1)		
515	FLUSHING CONNECTIONS FOR SSW. P-1061C P-1061D	180	150	115	90	150	90	P41	1.500	0.21	CS				X		IWD-1220(a)(1)		

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP												
519	ADHR PUMPS SUCTION FROM HBC-519 TO PUMPS. P-1085D	80	200	50	140	50	200	E12	6.000	0.28	CS								NO ISI OR PT REQ. SEE NOTE 1
519	ADHR PUMPS C005A&B SUCTION FROM HBC-222 TO VALVE F410. P-1085D P-1088E	250	200	50	140	50	200	G41	12.000	0.37	CS				X		IWD-1220(c)		
519	ADHR PUMPS SUCTION FROM VALVE F410 TO 8-HBC-519. P-1085D	80	200	50	140	50	200	E12	12.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 1
519	ADHR PUMPS SUCTION FROM HBC-519 TO 6-HBC-519. P-1085D	120	200	50	140	50	200	E12	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 1
520	LOW POINT DRAIN FROM HBC-519. P-1085D	80	200	50	140	50	200	E12	1.000	0.17	CS								NO ISI OR PT REQ. SEE NOTE 1
521	HIGH POINT VENT FROM HBC-519. P-1085D	80	200	50	140	50	200	E12	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 1
522	PSW FROM JBD 1304 TO ADHRS HT. EX. B003 A/B TO 8-HBC-522. P-1072H	150	150	150	65	150	90	P44	12.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 2
522	PSW FROM 12-HBC-522 TO ADHRS HEAT EXCHANGERS. P-1072H	150	150	150	65	150	90	P44	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 2
523	PSW FROM ADHRS HT. EX. B003A/B TO 12-HBC-523. P-1072H	150	150	150	140	150	140	P44	8.000	0.32	CS								NO ISI OR PT REQ. SEE NOTE 2
523	FROM 8-HBC-523 TO JBD-1305. P-1072H	150	150	150	140	150	140	P44	12.000	0.37	CS								NO ISI OR PT REQ. SEE NOTE 2
524	PSW FROM HBC-522 TO HBD-1794. P-1072H	150	150	150	65	150	90	P44	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2
525	PSW FROM HBD-1795 TO HBC-523. P-1072H	150	150	150	140	150	140	P44	1.500	0.20	CS								NO ISI OR PT REQ. SEE NOTE 2
526	FROM ADHRS HT. EXS. B003A/B TO PSV F495A/B. P-1072H	150	150	150	140	150	140	P44	0.750	0.15	CS								NO ISI OR PT REQ. SEE NOTE 2

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		PSIG	TEMP	PSIG	TEMP	PSIG	TEMP													
527	FROM ADHRS HT. EXS. B003A/B TO HBD-1799. P-1072H	150	150	150	140	150	140	P44	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
528	FROM ADHRS HT. EXS. B003A/B TO HBD-1798. P-1072H	150	150	150	140	150	140	P44	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
529	PSW FROM HBC-523 TO HBD-1803. P-1072H	150	150	150	140	150	140	P44	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 2
530	PSW FROM HBD-1802 TO HBC-523. P-1072H	150	150	150	140	150	140	P44	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
531	PSW FROM HBC-522 TO HBD-1796. P-1072H	150	150	150	65	150	90	P44	2.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 2
532	PSW FROM HBC-522 TO HBD-1797. P-1072H	150	150	150	65	150	90	P44	0.750	0.15	CS									NO ISI OR PT REQ. SEE NOTE 2
533	PSW FROM HBC-523 TO HBD-1801. P-1072H	150	150	150	140	150	140	P44	1.000	0.17	CS									NO ISI OR PT REQ. SEE NOTE 2
533	PSW FROM HBC-523. P-1072H	150	150	150	140	150	140	P44	2.000	0.21	CS									NO ISI OR PT REQ. SEE NOTE 2