Central file

Iowa Electric Light and Power Company

October 30, 1979
LDR-79-274

LARRY D. ROOT
ASSISTANT VICE PRESIDENT
NUCLEAR GENERATION

50-331

Mr. James G. Keppler, Director
Office of Inspection and Enforcement
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, ILL 60137

Dear Mr. Keppler:

Enclosed you will find our response to Item 2 and Item 3 normally accessible lines referred to in NRC Bulletin No. 79-14. The results show that we have found no non-conformances in either Group 1 or Group 2 lines.

With reference to my letter to you dated October 12, 1979, in which we discussed the need for further inspections relative to the bulletin, we find that additional evaluation on our part is necessary. We will report our determination to you by November 15, 1979.

Very truly yours,

Larry D. Root
Assistant Vice President
Nuclear Generation

LDR/RFS/mz
cc: R. Salmon
D. Arnold
S. Tuthill
L. Liu
E. Hammond
K. Meyer
D. Wilson
T. Kevern (NRC)

(see report for enclosure)

Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Director, Division of Operating Reactors
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

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SEISMIC ANALYSIS

OF

AS-BUILT SAFETY-RELATED PIPING SYSTEMS

FOR

DUANE ARNOLD ENERGY CENTER

IOWA ELECTRIC LIGHT & POWER

1.0 INTRODUCTION

The US NRC IE Bulletin 79-14 dated July 2, 1979, "Seismic Analysis for As-Built Safety-Related Piping Systems" requested that a description of the results of an inspection of portions of piping systems which are normally accessible be submitted within 60 days of the date of the bulletin. This inspection was to include one system in each set of redundant systems and all nonredundant systems for conformance to the seismic analysis input information set forth in design documents. A description of the results of an inspection of the remaining safety-related piping systems was to be submitted within 120 days of the date of the bulletin.

This report contains the results of inspections of accessible piping. Inspection of inaccessible lines is discussed in the licensee's letter LDR-79-229 dated October 12, 1979.

2.0 CONDUCT OF THE INSPECTION

The inspection described in Bulletin 79-14, Item 2 and Item 3 normally accessible lines was conducted for Iowa Electric Light & Power by Bechtel Associates Professional Corporation of Ann Arbor, MI using their "Procedure for Verifying Conformance of Seismic Analysis to Actual Configuration of Safety-Related Piping Systems"

in Response to IE Bulletin 79-14. (Revision 1 of this procedure accompanied the response to Item 1 of Bulletin 79-14; Revision 2 is Attachment 1 to this report.) The inspection reported herein is specifically addressed by Sections III through IX of the procedure. The field inspection was conducted at DAEC; the comparison addressed in Section VIII was performed at Bechtel's Ann Arbor Office. The office work also included updating Tables 1 and 2 of the Item 1 report for Group 1 & 2 lines. See Attachments 2 and 3.

In documenting the results of the inspection and comparison with seismic analysis input, it was necessary to differentiate among anomalies found. Hence the following definitions were used.

Discrepancy - an anomaly found during the comparison of the as-built configuration with the as-designed configurations but which has not been evaluated by stress analysts.

Nonconformance - A discrepancy which stress evaluation finds may invalidate the conclusions of the seismic analysis of record.

The comparison portion of the inspection revealed that the stress calculation records did not include a stress isometric for all lines. Thus, for the lines so indicated in Attachment 2, a stress isometric was constructed from the hanger or piping isometric and the system stress calculations. This was done with guidance from the stress analyst and provided a satisfactory vehicle for comparison with as-built conditions.

Lastly, in actually performing the field inspection, it was determined that portions and, in a few cases, all of a line denoted as Group 1 in the Item 1 report were in fact inaccessible. These were reclassified to Group 3 as shown in Attachment 3.

3.0 RESULTS OF THE INSPECTION

Results of the field inspection and office comparison of Group 1 & 2 lines with the seismic analysis of record are given in Attachment 4. All 67 Group 1 & 27 Group 2 lines shown in Attachment 3 have been reviewed. The inspection results are tabulated in Attachment 4 and show that no non-conformances exist in either Group 1 or Group 2 lines.

As indicated in letter LDR-79-229 dated October 12, 1979, Table 4 will be evaluated to determine the licensee's final position on inspection of inaccessible lines. This evaluation is scheduled to be complete by November 15, 1979.

Attachments

1. Procedure for Verifying Conformance of Seismic Analysis to Actual Configuration of Safety-Related Piping in Response to IE Bulletin 79-14, Revision 2.

2. Listing of Design Documents for Seismic Analysis of Group 1 & 2 Lines.

3. Seismic Category I Systems, Associated Piping Line Numbers and Inspection Group.

4. Results of Inspection of Accessible Lines.

PROCEDURE

FOR

VERIFYING CONFORMANCE OF SEISMIC ANALYSIS TO ACTUAL CONFIGURATION OF SAFETY-RELATED PIPING SYSTEMS IN RESPONSE TO IE BULLETIN 79-14

FOR

DUANE ARNOLD ENERGY CENTER UNIT 1

IOWA ELECTRIC LIGHT AND POWER COMPANY

CEDAR RAPIDS, IOWA

BY

BECHTEL ASSOCIATES PROFESSIONAL CORPORATION

ANN ARBOR, MICHIGAN

REV. 2
APPROVED BY J. P. Hurley
DATE 8-23-79

REV. 0
APPROVED BY J. M. Warner
DATE 7-30-79

REV. 1
APPROVED BY J. M. Warner
DATE 8-1-79

TABLE OF CONTENTS

Attachments

I. Purpose

This procedure describes the method and steps to be taken to verify that the seismic analyses of safety-related piping systems conform to the actual configurations of the installed piping systems at Duane Arnold Energy Center. The procedure is intended to be responsive to the requirements of NRC IE Bulletin 79-14 dated July 2, 1979. The procedure applies to piping systems 2½" and larger.

II. General Discussion

This paragraph describes the overall approach to be taken to provide the verification that the seismic analyses performed conforms to the actual configuration of the piping systems installed. The general steps are listed below and the detailed description of procedures required to accomplish each step are provided in subsequent sections:

1. Identify all 2½" and larger piping lines which are safety-related.
2. Determine and identify which lines are accessible during plant operation and are in non-redundant safety systems or in one train of redundant safety systems. Identify all other lines separately from the above lines.
3. Develop "as-built" inspection documents for the field surveys of the piping systems. The inspection documents are to contain all information required to be verified by the field inspection.
4. Develop "as-designed" documents which reflect the piping configuration which was used as input to the seismic analysis.

5. Perform field inspection of actual piping system configurations using the "as-built" inspection documents described above. Document any deviations from the inspection documents as a result of the inspection.

6. Compare the verified "as-built" documents with the completed "as-designed" documents for agreement with the seismic analysis input.

7. Evaluate the significance of any discrepancies between the verified "as-built" documents and the "as-designed" documents.

8. Evaluate the results of the field inspections and any re-analyses to determine whether verification inspections beyond the initial phase are warranted.

III. Identify Safety-Related Lines

To identify the safety-related piping lines 2½" and larger which have been seismically analyzed use the DAEC Piping Summary Sheets - Drawing No. M-190, (current revision). The seismic classification of each line is noted on the summary sheets. Once identified a list of all Seismic Class I (S.C.I.) lines is to be prepared.

IV. Inspection Plan

The non-redundant and redundant safety systems are to be identified using the DAEC FSAR. One train of the redundant systems is to be selected for inspection. Area Piping Drawings and System P&ID's are to be used to identify accessible portions of these systems. A list of the lines associated with non-redundant and the selected trains of redundant systems in accessible areas is to be prepared for the initial field inspection phase. A list of the remaining lines to be inspected in a subsequent inspection phase is also to be prepared.

V. Develop "As-Built" Inspection Document

For each line in the field inspection effort, an inspection package is to be developed. The basic documents in the package for each line are the hanger isometric(s) and the hanger detail drawings. This package is assembled as follows:

1. An inspection data sheet for each line to be inspected is prepared. The data sheet lists the line identification number and the DAEC system start-up number for the system containing the line.
2. The system P&ID which contains the selected line is checked to determine the seismic boundaries of the line. All hanger isometrics which show the line or portions of the line will be listed on the inspection data sheet. If the line connects to a non-Seismic Class I line the SCI line ends at the first rigid anchor after the seismic boundary. The hanger isometric for this portion of the non-SCI line will also be listed.
3. Copies of all hanger isometrics associated with a line will be collected for the inspection package.
4. The hanger isometrics will be reviewed to identify all seismic supports or restraints. The list of supports/restraints and the hanger detail drawing number for each will be listed on the data sheet.
5. Copies of all hanger detail drawings will be collected for inclusion in the package.
6. The dimensions of the hanger locations are to be extracted from the seismic calculation input and added to the hanger isometric. If, because of the availability of inspection packages required to support the inspection teams, there isn't ample time to extract these dimensions, then the dimensions are to be added from the field measurements to the hanger isometric and compared to the calculation dimensions after the inspection.

7. The function of the hanger, that is the restriction or load-carrying direction, is to be extracted from the calculation input and checked against the function indicated on the hanger detail drawing. Conformance is to be noted on the inspection data sheet. Again, for schedule reasons the check on the hanger function may be made following the field inspection when the verified "as-built" isometrics and hanger drawings are compared to the stress isometric and calculation input.

8. Valve mark numbers are to be extracted from the system P&ID's and marked on the inspection data sheet and the hanger isometrics. The inspection data sheet, the hanger isometric(s), and the hanger detail drawing(s) will comprise the field inspection package.

VI. Develop "As-Designed" Documents

The stress isometric represents the "as-designed" configuration which was used as input to the seismic calculation. Copies of the stress isometric will be obtained for each line identified in the inspection effort. If the stress isometric does not contain the location dimensions of the hangers then the calculation input will be reviewed to extract the dimensions from the input data.

VII. Field Inspection

The actual configuration of the piping systems included in this procedure are to be verified by field inspections or walkdowns of each safety-related line. The inspections are to be conducted using the guidelines listed below. The personnel involved in the field inspections are to receive qualifications training prior to conducting the inspections. Documentation of the qualification training for the individuals is to be provided. The inspection package described in Section V is to be provided to the inspection team assigned to a given line.

The inspection teams are to verify that:

A. Piping geometry conforms to the "as-built" hanger isometric. The dimensions of the piping configuration are to be checked.

B. Branch connection locations conform to the hanger isometric. The dimensions to the connections are to be checked.

C. Valve locations and valve identification numbers conform to the hanger isometric. The dimensions of the valve location within the piping run are to be checked.

D. Support/restraint locations conform to the hanger isometric. The dimensions of the support/restraint within the piping run are to be checked. Those supports/restraints with CEB's are being inspected under bulletin 79-02 and only the location of these support/restraints is to be verified under this procedure.

For dimensional checks on the pipe geometry, branch connections, and valve location a tolerance of ± 6" or ± 5% of the total length of any individual piping run between changes of direction, whichever is larger, is acceptable. For dimensional checks on support/restraint location a tolerance of ± 6" for pipe sizes 4" and smaller and ± two pipe diameters

with a maximum of ± 24" for all other sizes is acceptable. For checks on support/restraint orientation a tolerance of ± of 15° is acceptable. It is expected that verification of the majority of the location dimensions will be performed by the use of a measuring device. However, visual verification is acceptable in those situations where the inspector is assured that the dimension can be judged within the above tolerances. Examples are; when the piping is larger diameter and the runs are fairly short, then the distance can usually be visually determined to be within the established tolerances or where a pipe run may cross two column lines which have a known spacing.

E. Valve operator orientation conforms to the hanger isometric. The orientation of the valve operator in the plane normal to the piping run is to be checked. A tolerance of ± 10° from the drawing orientation is acceptable.

F. Support/restraint function conforms to the function indicated on the hanger detail drawing. This relates to the type and load direction. The type is one of the following: spring, rod, strut or snubber. The loading direction is to be checked against the hanger design shown on the hanger detail drawing.

G. Support/restraint assembly details conform to the hanger detail drawings. Items to be checked are: existence and size of structural members, existence of reinforcing members, existence of attachment welds (exact size need not be measured), and orientation.

H. Clearances specified for restraints are no larger than 1/8" and clearances for floor and wall penetrations which are not designed to act as restraint are no smaller than 1/8".

I. Anchor assembly details are in general compliance with the detail drawing. Visual inspection of anchors is acceptable.

It is not necessary to remove insulation for incpections, except for inspections of clearances specified in H above. A random sample of approximately 20% of those restraints which are insulated and require checking of clearances shall be selected and the insulation removed for the check to be made. A high incidence of clearances found out of tolerance shall be cause for further inspection of insulated restraints. In the conduct of the field inspections the information on the inspection drawings which is in conformance with the acutal installation will be yellowed out. Inspection information which is added during the inspection will be documented with a green pen. Any information added to the inspection documents from any source other than the field inspection will be added with a red pen.

VIII. Comparison of the "As-Built" and "As-Designed" Configurations

A completed inspection package for each line will contain:

1. The completed inspection data sheet signed and dated by the field inspector.
2. The verified hanger isometric marked to indicate the measured dimensions which conform to the hanger isometric. Any deviation of the dimensions, piping geometry, or valve orientation will also be marked on the verified hanger isometric.
3. The hanger detail drawings marked to show any deviations of the actual installation from the detail drawing.

The verified hanger isometric is to be compared to the stress isometric for conformance. Should the stress isometric be unavailable, data from other isometrics and the seismic calculation will be used to reconstruct the equivalent document. A Piping System Design Conformance Data Sheet is to be prepared to document the comparison. Any discrepancies are to be noted on the data sheet. If the hanger location dimensions were not added to the hanger isometric before the field walkdown, then, unless otherwise approved by the Bechtel Project Engineer, the dimensions measured in the field (green pen) will be yellowed out during the conformance comparison. The hanger detail drawings which indicate discrepancies will also be listed on the data sheet. The completed verification package will include:

1. Inspection data sheet.
2. Hanger isometric.
3. Hanger detail drawings.
4. Stress isometric.
5. Design conformance data sheet.

A Summary description of the results of the inspection and verification is to be prepared for the initial phase for submittal to the NRC by September 1, 1979.

IX. Evaluation of Discrepancies

Following the comparison of the "as-built" and "as-designed" configurations the completed verification package with discrepancies noted on the Design Conformance Data Sheet, will be turned over to a stress analyst for evaluation. The stress analyst will determine if the noted discrepancies will significantly affect the seismic analysis originally performed. If it is determined that a nonconformance exists, then the line will be re-analyzed. For purposes of this effort, a nonconformance is defined as a discrepancy which stress evaluation finds may invalidate the conclusions of the seismic analysis of record.

If the re-analysis indicates that the piping stresses and the loads on the piping supports/restraints are acceptable, the results will be noted on a Nonconformance Resolution Sheet which will be prepared for each S.C.I. line.

If the discrepancies are judged to have an insignificant effect on the original seismic calculation, the Nonconformance Resolution Sheet will indicate that a re-analysis is not necessary.

If the re-analysis indicates that piping stresses or support/restraint loads are not acceptable, then the results will be reported to the NRC and the appropriate action will be taken in compliance with the DAEC technical specifications.

X. Evaluate Need for Further Inspections

In the initial inspection phase the accessible portions of non-redundant and one train of redundant safety related piping systems will be inspected. It is expected to complete the initial phase by September 1, 1979. If the results of the initial inspection phase indicates that there were no significant nonconformances then these results will be evaluated to determine if further inspections are warranted. The NRC would be contacted to determine if further inspections can be waived on the basis of this evaluation.

SPOOL CHECKLIST

1. Spool Number:_____

2. Complete set of Iso's to boundaries ☐yes ☐no; if no list missing drawings

3. Complete set of hanger drawings ☐yes ☐no; if no list missing drawings

4. Hanger locations and function extracted from stress input ☐ YES ☐ NO

5. Items 1,2,3 and proper columns of items 5 & 6 completed on data sheet

   By_____date_____

6. Hanger list sent for 79-02 check By_____date_____

7. 79-02 check complete, record attached date_____

8. Released to field By_____ date_____

9. Number of data sheets in complete spool package_____

. Spool Identification: _____ SUS#: _____

. Hanger Iso used for inspection: _____ Rev: _____ DATE: _____

. Stress Iso: _____ Rev: _____ DATE: _____

. Pipe Geometry: This includes spool dimensions, valve locations, and clearances

☐ Meets Iso
☐ Differs from Iso (Attach sketch or description)

. Valves (including operators):

Valve #	Wt Analyzed	Wt From Vendor Print	Vendor Print #

. Supports/Restraints:

Ident #	Dwg #/Rev	Type	Location Per Iso	Configuration Per Detail	Calc. Function Matches Detail	As-Built Function Matches Detail	Clearances Acceptable

. Pipe attachments per spool dwg.: ☐ Yes ☐ No (Explain)

. Clearances required around pipe: _____

. Tolerances: Pipe location: _____ Hanger location: _____

. Inspection by: _____ Signature: _____ Date: _____

PIPING SYSTEM DESIGN CONFORMANCE DATA SHEET

1. Spool Identification:_____ SUS #_____

2. Verified Hanger Iso:_____ Rev_____ Date_____

3. Stress Iso:_____ Rev_____ Date_____

4. Calculation No._____

5. Pipe Geometry:

   Stress Iso Conforms to Verified Inspection Iso ☐

   Does NOT Conform ☐

   List Discrepancies: _____

   _____

   _____

   _____

   _____

   _____

   _____

6. Hanger Details: List hanger detail drawings which have discrepancies:

   _____

   _____

   _____

   _____

7. Valves: List valves in which the vendor wt different from the analyzed wt._____

   _____

   _____

   _____

BY_____ DATE_____

PIPING SYSTEM NONCONFORMANCE RESOLUTION SHEET

1. Spool Identification _____ SUS# _____

Resolution of Nonconformances:

By _____ Date _____

List of Design Documents for Seismic Analysis of Group 1 Lines

Line #: DBB-1
Service: RHR pump discharge from MO-2004 to MO-2003

Design Input Documents:

Piping Class/Summary Sheet: DBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-20 A BP-9172, R1

2) Valve Vendor Print Numbers

MO-2004
MO-2003 M152A-4-4

Line #: EBB-4
Service: RCIC test line

Design Input Documents:

Piping Class/Summary Sheet: EBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric cannot be found

1) Hanger Drawing Number

H-15	BP-1651, R1
SR-12	BP-1672, R3
H-16	BP-1652, R1 &
	BP-1652A, R1 &
	BP-1652B, R1
H-17	BP-1653, R1
H-18	BP-1654
H-19	BP-1655

2) Valve Vendor Print Numbers

MO-2515	M133A-004-6
V-25-07	M133A-047-4

Line #: EBB-6
Service: HPCI pump recirculation to MO-2318

Design Input Documents:

Piping Class/Summary Sheet: EBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric cannot be found

1) Hanger Drawing Numbers

H-21	BP-1657, R1
H-20	BP-1656, R2

2) Valve Vendor Print Numbers

MO-2318	M133A-012-5
V-23-14	M133A-017-4

Line #: EBB-17
Service: Core spray from MO-2115 to MO-2117

Design Input Documents:

Piping Class/Summary Sheet: EBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-12	BP-1726
H-13	BP-1727
SR-17	BP-1793

2) Valve Vendor Print Numbers

MO-2115	M133A-040-3

Line #: CBB-3
Service: RHR pumps P-229 B, D discharge to MO-1903

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-1	BP-1846/3
	BP-1846A/1
H-2	BP-1847/2
H-3	BP-1848/1
H-4	BP-1849/2
	BP-1849A/1
H-5	BP-1850/2
H-6	BP-1851/1
	BP-1851A/1
H-30	BP-1882, R1
SS-235	BP-2088, R1, Sh. A
H-31	BP-18883, R1
H-32	BP-1884, R2
H-33	BP-1885, R2
H-34	BP-1886, R2
SS-236	BP-2089, R1, Sh. A
H-35	BP-1887, R2
H-36	BP-1888, R2
	BP-1888A, R1
H-20C	BP-9715, R1
	BP-9715A, R1
SS-237	BP-2090, R1
SS-238	BP-2091, R2
SA-78	BP-1930/2
H-79	BP-1931/2
H-80	BP-1932/2
H-81	BP-1933/2
H-82	BP-1934/1
H-83	BP-1935/2
H-84	BP-1936/1
H-85	BP-1937/1

2) Valve Vendor Print Numbers

V-19-2	M137A-010-4
V-19-3	M137A-001-4
V-19-4	M137A-010-4
MO-1940	-
V-19-12	-
V-19-13	-

Line #: CBB-8
Service: RHR pumps discharge from RHR heat exchanger HE-201B to header

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Sketch-735

1) Hanger Drawing Numbers

H-29	BP-1881/2 &
	BP-1881A/1 &
	BP-1881B/2

2) Valve Vendor Drawing Number

MO-1941 —

Line #: CBB-10
Service: RHR pump discharge from header to MO-1901

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Sketch-735

1)

H-25	BP-1877, R1
SS-241	BP-2094
H-26	BP-1878, R2 &
	BP-1878A, R1
SS-243	BP-2096, R1
SR-244	BP-2097 &
	BP-2097A
SS-242	BP-2095, R2
H-27	BP-1879, R2
H-28	BP-1880, R2

2) Valve Vendor Print Numbers

(None)

Line #: CBB-13
Service: Core spray pump IP-211A discharge

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-1	BP-1715, R1 & BP-1715 A, R1
SR-13	BP-1789, R1
SR-14	BP-1790, R1
H-2	BP-1716, R1
H-3	BP-1717, R1
H-4	BP-1718, R1 & BP-1718A, R1
H-5	BP-1719A-C, R2 & BP-1719
H-6	BP-1720, R2
H-7	BP-1721, R2
SR-15	BP-1791, R1
SS-16	BP-1792, R1
H-8	BP-1722, R2
H-9	BP-1723, R2
H-10	BP-1724, R2
H-11	BP-1725, R1

2) Valve Vendor Print Number

V-21-7 M137A-002-4

Line#: CBB-15
Service: RHR pumps P-229 B, D discharge to test line upstream of MO-1935, MO-1970

Design Input Documents:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-108	BP-1960, R2
H-109	BP-1961, R1
H-110	BP-1962, R1
H-111	BP-1963, R1
H-112	BP-1964, R1
	BP-1964A, R1
H-113	BP-1965, R1
H-114	BP-1966, R1
H-115	BP-1967, R1
H-116	BP-1968, R1
H-117	BP-1969, R1
H-118	BP-1970, R1
H-119	BP-1971, R1
H-120	BP-1972, R2

2) Valve Vendor Print Numbers

V-19-14	M137A-4-4
V-19-15	M137B-5-3
CV-1966	
V-19-6	M137A-3-4
MO-1967	M137B-10-3

Line #: CBB-18
Service: Condensate supply to RHR discharge to reactor

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric cannot be found

1) Hanger Drawing Numbers

H-156	BP-2009, R1
H-79	BP-4730/1
H-80	BP-4731/1
H-81	BP-4732/1
H-82	BP-4733/1
H-126	BP-4777/1
H-125	BP-4776/1
H-84	BP-4735/1
H-85	BP-4736/1
H-86	BP-4737
H-96	BP-4747/2
H-95	BP-4746/2
H-94	BP-4745/1
H-93	BP-4744/1
H-92	BP-4743/1
H-91	BP-4742/1
H-118	BP-4769/1
H-119	BP-4770/1
H-120	BP-4771/1
H-121	BP-4772/1
H-122	BP-4773/2

2) Valve Vendor Print Numbers

V-34-20	--
V-34-21	--
V-36-13	--
V-19-30	--
V-19-31	--

Line #: CBB-22
Service: RHR service water discharge to RHR system downstream of MO-1942

Design Input Documents:

Piping Class/Summary Sheet: CBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Number

H-28 BP-2528, R1

2) Valve Vendor Print Numbers

V-20-10 M137A-051-2

Line #: GBB-23
Service: RHR discharge to fuel pool storage

Design Input Documents:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK-M-338

1) Hanger Drawing Numbers

H-153	BP-2006, R2
SR-160	BP-2013, R1
H-155	BP-2008, R2
H-148	BP-2001, R1
SA-157	BP-2010, R2
H-150	BP-2003, R1
SR-158	BP-2011, R1
H-152	BP-2005, R2
SR-159	BP-2012, R1
SR-161	BP-2014, R1

2) Valve Vendor Print Numbers

V-34-48 --

Line #: GBC-2
Service: RHR service water discharge to RHR heat exchanger IE-201B

Design Input Documents:

Piping Class/Summary Sheet: CBC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-66	BP-2566, R1
H-67	BP-2567, R2
SR-157	BP-6257, R1
H-68	BP-2568, R1
SA-90	BP-6190, R1
H-60	BP-2560, R1
H-61	BP-2561, R1
H-62	BP-2562, R2
H-63	BP-2563, R2
H-64	BP-2564, R1
H-65	BP-2565, R1
H-7	BP-2507, R1
H-8	BP-2508, R1
H-9	BP-2509, R1
H-10	BP-2510, R2
SR-60	BP-6160B, R1
	BP-6160, R1
	BP-6160A, R1
H-11	BP-2511, R1
	BP-2511A, R1
H-12	BP-2512, R1
H-13	BP-2513, R1
SR-61	BP-6161, R1
H-14	BP-2514, R1
H-15	BP-2515, R1
SS-62	BP-6162, R1
SR-64	BP-6164, R1
H-16	BP-2516, R1
	BP-2516A, R1
H-17	BP-2517, R1

2) Valve Vendor Print Numbers

V-46-16	M137A-44-2
V-46-17	M137A-44-2
V-46-13	M137-035-3
V-46-11	M137-035-3
V-46-12	M137-045-2
V-46-14	M137-045-2
V-13-1	M137A-44-2
V-13-2	M137-44-2

Line #: GBC-4
Service: RHR service water from RHR heat exchanger HE-201B to MO-1946

Design Input Documents:

Piping Class/Summary Sheet: GBC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK-0217884-149

1) Hanger Drawing Numbers

H-36	BP-2536/1
	BP-2536A/1
	BP-2530A/2
H-37	BP-2537/3
SR-74	BP-6174/1
SR-73	BP-6173/1
	BP-6173A/1

2) Valve Vendor Print Number

MO-1947	--
V-13-3	--

Line #: GBC-5
Service: RHR service water discharge to RHR heat exchanger discharge upstream of MO-1942

Design Input Documents:

Piping Class/Summary Sheet: GBC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

SA-59	BP-6159, R2
H-24	BP-2524, R1
H-25	BP-2525, R1
H-26	BP-2526, R2
H-27	BP-2527, R1
	BP-2527A, R1
H-18	BP-2518, R1
H-19	BP-2519, R1
H-20	BP-2520, R1
H-21	BP-2521, R1
H-22	BP-2522, R1

2) Valve Vendor Print Numbers

12" Check	M137A-35-3
MO-1943-B	M137-34-5
MO-1943-A	M137A-34-5
V-13-15	M137A-35-3

Line #: CLE-5
Service: RHR pump discharge and test line to torus spray between MO-1932 and MO-1933 and MO-1934

Design Input Documents:

Piping Class/Summary Sheet: CLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-23	BP-1737
H-24	BP-1738

2) Valve Vendor Print Numbers

MO-1934	M151A-007-4
MO-1932	M151A-006-4
MO-1933	M137A-17-4

Line #: HBB-2
Service: Core Spray Pump IP-211A Suction

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK 75-396-30

1) Hanger Detail Drawings:

H-1	BP-1701 R0
	BP-1701A R1
H-2	BP-1702 R1
	BP-1702 A R1
H-3	BP-1703 R1
	BP-1703A R1
H-4	BP-1704 R0
	BP1704A R1
H-5	BP-1705 R1
	BP-1705A R1
SS-7	BP-1783 R2
SS-8	BP-1785 R1
H-6	BP-1706 R1
	BP-1706A R1
H-7	BP-1707 R3
	BP-17-71 R1

Valve Vendor Prints

MO-21--	M137A-15-3
V-21-1	M137A-011-4

Line #: HBB-2
Service: Core Spray Pump IP-211A Suction

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK 75-396-30

1) Hanger Detail Drawings:

H-1	BP-1701 R0
	BP-1701A R1
H-2	BP-1702 R1
	BP-1702 A R1
H-3	BP-1703 R1
	BP-1703A R1
H-4	BP-1704 R0
	BP1704A R1
H-5	BP-1705 R1
	BP-1705A R1
SS-7	BP-1783 R2
SS-8	BP-1785 R1
H-6	BP-1706 R1
	BP-1706A R1
H-7	BP-1707 R3
	BP-17-71 R1

2) Valve Vendor Prints

MO-21—	M137A-15-3
V-21-1	M137A-011-4

Line #: HBB-6
Service: HPXI turbine exhaust to torus isolation valve

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

SR-1	BP-1585 R1
	BP-1585A R1
H-1	BP-1501 R2
	BP-1501 R1
SS-20	BP-1586 R2
H-2	BP-1502 R2
	BP-1502A R1
SR-21	BP-1587 R3
H-3	BP-1503 R1
	BP-1503A R1
H-4	BP-1504 R2
H-5	BP-1505 R1
SS-22	BP-1588 R1
H-6	BP-1506 R2

2) Valve Vendor Print Number

V-22-16	M137A-005-5

Line #: HBB-7
Service: RCIC trubine exhaust to torus isolation valve

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isomertric Drawings: SK TS-395-51

1) Hanger Detailed Drawings:

H-1	BP-1601 R2
	BP-1601A R1
H-2	BP-1602 R1
SS-17	BP-1677 R2
H-3	BP-1603 R1
H-4	BP-1604 R2
SS-18	BP-1678 R2
H-5	BP-1605 R3
SS-19	BP-1680 R1
	BP-1680A R1
H-6	BP-1606 R5
H-7	BP-9725 R3
	BP-9725A R2

2) Valve Vendor Prints:

V-24-23 M137A-007-5

Line #: HBB-8
Service: HPCI pump suction from MO-2321 to MO-2322

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-1	BP-1524, R1
SR-1	BP-6105, R1
SR-2	BP-6106, R1
	BP-6106A, R1
H-3	BP-1526, R1
H-4	BP-1527, R2
SR-3	BP-6107, R1
	BP-6107A, R2
H-5	BP-1528, R2
SR-4	BP-6108, R1
H-6	BP-1529, R1
	BP-1529A, R1
H-7	BP-1530, R1
H-8	BP-1531, R2

2) Valve Vendor Print Numbers

V-23-1	M137A-012-4
MO-2322	M137A-014-4

Line #: HBB-9
Service: HPCI pump suction from condensate line

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Osometric Reconstructed

1) Hanger Drawings:

H-9 BP-9727 R1

2) Vendor Valve Prints:

MO-2300	M137A-014-4
V-23-4	M137A-012-4

Line #: HBB-14
Service: RCIC pump suction from MO-2516 to MO-2517

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra; See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

H-1	BP-1617 R2
H-2	BP-1618 R1
SR-5	BP-1665 R1
H-3	BP-1619 R2
	BP-1619A R2
H-4	BP-1620 R2
H-5	BP-1621 R1
SR-4	BP-1664 R1
H-6	BP-1622 R1

2) Vendor Valve Prints:

V-25-01	M137A-6-4
MO-2517	M137B-14-3

Line#: HBB-15
Service: RCIC pump suction from condensate storage tank

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstruction

1) Hanger Detailed Drawings:

H-11	BP-1627 R2
H-7	BP-1623 R1
H-8	BP-1624 R2

2) Valve Vendor Prints:

V-25-03	M137A-6-$
MO-2500	M137B-14-3
V-25-02	M137B-6-3
V-25-04	M137B-6-3
MO-2517	M137B-14-3
V-25-05	M137A-6-4

Line#: HBB-21
Service: RCIC pump suction from RHR heat exchanger

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isomertric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-10	BP-1626, R1
H-9	BP-1625, R1
H-49	BP-1901, R2
H-50	BP-1902, R2
H-51	BP-1903, R2
H-52	BP-1904, R3
H-53	BP-1905, R2
	BP-1905A, R2
H-54	BP-1906, R1
SS-218	BP-2071, R1
H-48	BP-1900, R2
H-47	BP-1899, R2
H-46	BP-1898, R3
H-45	BP-1897, R2
H-44	BP-1896, R2
H-37	BP-1889, R1

2) Valve Vendor Print Numbers

V-25-04	M137B-6-3
V-25-05	M137A-6-4

Line#: HBB-23
Service: RHR pumps P-229 B,D, suction downstream of MO-1909

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

H-1	BP-1821 R1
H-2	BP-1822 R1
H-3	BP-1823 R1
H-4	BP-1824
	BP-1824A
	BP-1824B
H-5	BP-1825 R2
H-20	BP-1820 R3
H-19	BP-1819 R1
H-18	BP-1818 R2
	BP-1818A R1
H-15	BP-1815 R2
	BP1815A R1
SS-220	BP-2073 R1
H-16	BP-1816 R2
H-17	BP-1817 R3
	BP-1817A R2
SS-219	BP-2072 R1
H-14	BP-1814 R1
	BP-1814A R1
H-13	BP-1813 R3
H-12	BP-1812 R4
	BP-1812A R1
H-11A	BP-9711A R3
	BP-9711 R1
H-11	BP-1811 R2
	BP-1811A R2

2) Valve Vendor Prints:

MO-1909	M152A-30-3
MO-1911	M137A-14-4
MO-1913	M137A-14-4
V-19-10	M137B-4-3
V-19-12	M137B-4-3
MO-1912	M137A-14-4
MO-1920	M137A-14-4

Line #: HBB-25
Service: Drain from fuel pool skimmer tanks

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

H-163	BP-2016 R2
H-164	BP-2017 R2
H-165	BP-2018 R2
SS-178	BP-2031 R1
	BP-2031A R1
SR-177	BP-2030 R2
H-166	BP-2019 R2
	BP-2019A R1
H-167	BP-2020 R2
H-168	BP-2021 R2
SA-179	BP-2032 R1
H-170	BP-2032 R2
H-171	BP-2024 R2
H-172	BP-2025 R2
SR-180	BP-2033 R1
	BP-2033a R1
SR-174	BP-2027 R2
H-175	BP-2028 R2
H-176	BP-2029 R2
H-173	BP-2026 R2

2) Valve Vendor Prints:

Line #: HBB-29
Service: RHR relief valve PSV-1952 to suppression pool

Design Input Documents:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-195	BP-2048, R2
H-196	BP-2049, R2
H-197	BP-2050, R2
H-198	BP-2051, R2 & BP-2051A, R1
SS-199	BP-2052, R1 & BP-2052A, R1
H-200	BP-2053, R2
H-201	BP-2054, R2
H-191	BP-2044, R2
SR-192	BP-2045, R2
H-193	BP-2046, R2
SR-194	BP-2047, R2

2) Valve Vendor Print Numbers

(No Valves)

Line #: HBD-24
Service: Emergency service water pump IP-99A discharge

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

SA-93	BP-6193/1	SR-150	BP-6250/1 & BP-6250A/1
H-23	BP-2607/1	SA-162	BP-6262/1
H-24	BP-2608/1	H-42	BP-2679/2
H-25	BP-2609/1	H-43	BP-2680/2
H-26	BP-2610/1	H-44	BP-2681/2
H-27	BP-2611/1	SA-92	BP-6192/2
H-28	BP-2612/1	H-157	BP-7094/1
H-29	BP-2613/1	H-158	BP-7095/1
H-30	BP-2614/1	H-35	BP-2672/3 & BP-2672A/1
H-31	BP-2515/1		BP-2672B/2
H-32	BP-2669/1	H-36	BP-2673/1 & BP-2672A/1
H-33	BP-2670/1	SA-91	BP-6191/2
SA-160	BP-6260/1	H-1	BP-2585/2
H-34	BP-2671/1	H-2	BP-2586/2 & BP-2586A/1
H-123	BP-8009/1	H-3	BP-2587/2
SA-146	BP-6246/1	H-4	BP-2588/1
H-124	BP-7061/1	H-5	BP-2589/2
FH-3	BP-9657/1	SR-155	BP-G255/1
H-45	BP-2682/2	H-6	BP-2590/2
H-120	BP-7057/1	H-20	BP-2604/1
H-121	BP-7058/1	H-21	BP-2605/1
SR-149	BP-6249/1	H-22	BP-2606/2
H-122	BP7059/1	SA-161	BP6261/1
H-38	BP-2675/2	H-12	BP-2596/1
	BP-2675A/2	H-13	BP-2597/1
H-39	BP-2676/2	H-14	BP-2598/1
H-40	BP-2677/2	H-15	BP-2599/1
H-41	BP-2678/2	H-16	BP-2600/1
H-37	BP2674/1 & BP-2674A/1 &	H-17	BP-2601/1
	BP-2675B/2	H-18	BP-2602/1
		H-19	BP-2603/1 & BP-2603A/1

2) Valve Vendor Print Numbers

V-13-53	M135A-31-2	V-46-21	M135A-33-3
V-69-66	M135A-4-8	V-46-22	M135A-4-8
V-69-67	M135A-6-5	V-46-24	M135A-31-2
V-13-61	M135-31-2	V-46-25	M135A-31-2

Line #: HBD-26
Service: Emergency service water to diesel generator IE-53A

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic REsponse Spectra: See FSAR
Piping Stress Isometric Drawings: 0217884-122

1) Hanger Drawing Numbers

SR-103	BP-6203, R1
	BP-6203A, R1
SR-5	BP-6117, R2
	BP-6117A, R2
	BP-6117B, R2
H-1	BP-2654, R1
SG-104	BP-6204, R1
	BP-2655, R1

2) Valve Vendor Print Numbers

CV-2080	M135A-68-1
V-13-35	M135A-32-3

Line #: HBD-28
Service: Emergency service water returns from safeguard equipment serviced by pump IP-99A
Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Sesmic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

SA-96	BP-6196/1	H-15	BP-2651/2
H-1	BP-2637/1	SA-99	BP-6199/2
H-2	BP-2638/1	H-16	BP-2652/1
H-3	BP-2639/1	H-17	BP-2653/1
H-4	BP-2640/1	H-49	BP-2686/2
H-5	BP-2641/1	H-50	BP-2687/1
H-6	BP-2642/1	SA-94	BP-6194/1
H-7	BP-2643/1	SR-152	BP-9748/1
H-8	BP-2644/1	H-51	BP-2688/1
H-9	BP-2645/1	H-128	BP-7065/1
SA-98	BP-6198/1	H-52	BP-2689/2
H-10	BP-2646/1	H-53	BP-2690/2
H-11	BP-2647/1	H-54	BP-2691/2
H-12	BP-2648/1	H-55	BP-2692/2
H-13	BP-2649/1	H-56	BP-2693/2
H-46	BP-2683/1	H-57	BP-2694/2
H-47	BP-2684/1	SA-95	BP-6195/2
H-48	BP-2685/1	H-59	BP-2696/1
H-14	BP-2650/2	H-125	BP-7062/1
	BP-2650A/2	H-126	BP-7063/1
H-159	BP-7096/1	H-127	BP-7064/1
H-160	BP-7097/1		

2) Valve Vendor Pring Numbers

TCV-6924A	—
V-13-122	—
CV-1956A	—
MO-2077	—
V-13-54	—
TCV-6924A	—
V-13-62	—

Line #: HBD-31
Service: Service water return from RHR heat exchanger IE-201B to downstream of MO-1947 to MO-1998B
Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK 0217884-149

1) Hanger Detailed Drawings:

SS-71	BP-6171 R1
H-38	BP-2538 R1
H-39	BP-2539 R1
H-40	BP-2540 R1
SR-70	BP-6170 R1
	BP-6160A R1
H-42	BP-2542 R1
H-43	BP-2543 R1
H-44	BP-2544 R1
h-45	BP-2545 R1
SS-101	BP-6201 R1
H-46	BP-2546 R1
H-47	BP-2547 R!
H-48	BP-2548 R1
H-49	BP-2549 R1
H-50	BP-2550 R1

2) Valve Vendor Prints:

MO-1998 B M144C-49-1

Line #: HBD-32
Service: RHR service water return from RHR heat exchanger to cooling tower via CW discharge downstream of MO-1998 A,B

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: (sketch - 710)

1) Hanger Detailed Drawings:

H-35 BP-2353, R2

2) Valve Vendor Prints

(None)

Line#: HBD-34
Service: Diesel oil piping

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings SK-M-36

1) Hanger Detail Drawings:

H-66	BP-3866 R1 & BP-3866A R1
H-67	BP-3867 R1

2) Valve Vendor Print Numbers:

(No Valves)

Line #: HBD-61
Service: Diesel engine air supply

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: SK-M-247

1) Hanger Drawing Numbers

SA-125	BP-9025 R2
H-76	BP-3876 R2
SR-128	BP-9028 R1
SA-126	BP-9026 R2
H-78	BP-3878 R2
SR-129	BP-9029 R1

2) Valve Vendor Print Numbers

(No Valves)

Line #: HBD-67
Service: River water pumps IP-117 B,D discharge

Design Input Documents:

Piping Class/Summary Sheet:	HBD/M-190
Seismic Response Spectra:	See FSAR
Piping Stress Isometric Drawings:	SK-M-401, SK-M-399, SK-M-403

1) Hanger Detail Drawings

H-10	BP-2578
H-9	BP-2577
H-8	BP-2576
SA-28	BP-6128 R2F1
H-29	BP-5229 R2
H-28	BP-5228 R2
SA-29	BP-6129 R2F1
H-27	BP-5227 R1
H-26	BP-5226 R2
H-30	BP-5220 R2
FH-20	BP-5221 R1
H-21	BP-9501 R1
FH-21	BP-9502 R1
H-23	BP-5223 R2
H-24	BP-5224 R1
SA-27	BP-6127 R2
SA-39	BP-6139 R1
H-3	BP-2571 R1
H-4	BP-2573 R1
SA-37	BP-6137 R2
SA-46	BP-6246 R2
	BP-6146A R1
H-2	BP-2570 R2
H-1	BP-2569 R2
SA-44	BP-6144 R3
SA-45	BP-6145 R3
H-13	BP-2581 R1
H-14	BP-2582 R2
SA-30	BP-6130 R4

2) Valve Vendor Prints:

AV-2909B	No Information
AV-2-909 D	No Information
V-29-6 (18"-BF)	M-144C-014-4
V-29-8 (18"-BF)	M-144C-014-4
V-29-5 (18"-BF)	M-132A-002-4
V-29-7 (18" -CK)	M-132A-002-4
V-29-17 (6"-GT)	M-135-004-8
V-29-25 (3"-GT)	M-135-004-8
AV-2909F	
CV-4910A	M-144C-024-5
CV-4909	M-144C-024-5
CV-4914	M-144C-028-1
V-46-42 (3"-GB)	M-135-032-3

Line #: HBD-80
Service: Emergency service water from diesel generator IE-53A to

Design In put Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings:

1) Hanger Detailed Drawings:

SR-1	BP-6113 R3
	BP-6113A R2
H-7	BP-2660 R2
H-8	BP-2661 R2
SG-108	BP-6208 R1
H-9	BP-2662 R2
H-10	BP-2663 R2

2) Valve Vendor Prints:

None

Line #: HBD-82
Service: Discharge from PSE to 2079 A, B to radwaste dilution line and deicing

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: 75.396-48 and Reconstructed Isometric

1) Hanger Drawing Numbers

H-2-2	BP-1002, R2
H-203	BP-1003. R2
H-204	BP-1004, R2
H-85	BP-7022, R1
H-86	BP-7023, R1
H-87	BP-7024, R1
H-40	BP-5240
H-41	BP-5241 & BP-5241 A
H-44	BP-5244
H-42	BP5242m R2
H-43	BP-5243, R2
H-45	BP-5245, R2
H-46	BP-5246, R2
H-200	BP-1000, R3
H-201	BP-1001, R2

2) Valve Vendor Print Numbers

V-42-10	M144C-053-3
V-42-11	M144C-36-3, 51-1, 54-2
V-42-12	M144C-56-1, 61-1, 63-2
V-29-37	M144C-74-2
V-29-32	M144C-75-2

Line #: HBD-97
Service: Well water pump discharge

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: 75.396-9 and 75.396 - 10

1) Hanger Drawing Numbers

H-79	BP-5079, R1
H-80	BP-5080, R1
H-81	BP-5081, R1
FH-3	BP-9554
FH-2	BP-9553
H-82	BP-5082
H-83	BP-5083

2) Valve Vendor Print Numbers

V-44-20	M135A-3-4
V-44-23	M135A-3-4
CV-5701	M135A-78-2
V-44-24	M135A-31-2

Line #: HBD-122
Service: Diesel exhaust

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

SR-3	BP-6115, R2, & BP-6115, R2
H-68	BP-3868, R1
H-69	BP-3869, R2
H-70	BP-3870, R1
H-71	BP-3871, R1
SR-4	BP-6116, R2 & BP-6116A, R2
H-72	BP-3872, R3
H-73	BP-3873, R2
H-74	BP-3874, R1
H-75	BP-3875, R1

2) Valve Vendor Print Number

(No Valves)

Line #: HBD-161
Service: Control room air CCW to p/p IV-CP-30B

Design Input Documents:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

H-19	BP-8019, R2
H-18	BP-8018-2, R1
H-23	BP-8023-3, R1
H-22	BP-8022-3, R1
H-15	BP-8015, R1
SA-14	BP-8014, R1

2) Valve Vendor Print Numbers

V-69-22	M-135A-4-8
V-69-135	M135A-4-8

Line #: HCB-2
Service: Standby liquid control pump suctipn

Design Input Documents:

Piping Class/Summary Sheet: HCB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings

H-50	BP-4871, R1
H-51	BP-4872, R2
H-52	BP-4873, R2
H-53	BP-4874, R2

2) Valve Vendor Print Numbers

V-26-2	M-143B-001
V-26-3	M-143B-001
V-26-1	M-143B-003
V-26-18	M-143B-003

Line #: HCC-6
Service: HPCI suction from condensate storage tank

Design Input Documents:

Piping Class/Summary Sheet: HCC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

SR-5	BP-6109, R2
	BP-6109A, R1
	BP-6109B, R1
SR-6	BP-6110, R1
	BP-6110A, R1
SR-7	BP-6111, R2
	BP-6111A, R1
	BP-6111B, R1
H-10	BP-6112, R2
	BP-6112A, R2
H-11	BP-9729, R1
H-12	BP-9730, R1
	BP-9730, R2
	BP-9730B, R2

2) Valve Vendor Print Numbers

None

Line #: HCC-7
Service: RCIC suction from condensate storage tank

Design Input Documents:

Piping Class/Summary Sheet: HCC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

H-14	BP-1630 R2
H-13	BP-1629 R2
SR-6	BP-1666 R1
H-12	BP-1628 R2
	BP-1628 R2

2) Valve Vendor Prints:

None

Line #: HCC-8
Service: Core spray pump suction from condensate storage tank

Design Input Documents:

Piping Class/Summary Sheet: HCC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isoetric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

H-6	B.P.-1761, R3	H-8	B.P.-1763, R2
	B.P.-1761A, R3	H-2	B.P.-1757, R3
	B.P.-1761B, R2	H-1	B.P.-1756, R3
H-7	B.P.-1762, R2	H-3	B.P.-1758, R3
H-14	B.P.-1769, R2	H-4	B.P.-1759, R2
H-13	B.P.-1768, R2	H-5	B.P.-1760, R3
H-12	B.P.-1767, R3		
H-11	B.P.-1766, R2		
H-10	B.P.-1765, R2		
H-9	B.P.-1754, R3		
H-17	B.P.-1772, R2		
	B.P.-1772A, R2		
SS-11	B.P.-1787, R1		
SS-12	B.P.-1788, R2		
H-16	B.P.-1771, R2		
SA-23	B.P.-1799, R1		

2) Valve Vendor Print Numbers

(No Valves)

Line #: HLE-1
Service: HPCI pump suction from torus to MO-2321

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

None

2) Valve Vendor Print Numbers

MO-2321 M151A-002-4

Line #: HLE-2
Service: RCIC pump suction from torus to MO-2516

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spctra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

None

2) Valve Vendor Prints:

MO-2516 M137-34-2

Line #: HLE-4
Service: Core spray pump IP-211A suction from torus through MO-2147

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

None

2) Valve Vendor Prints

None

Line #: HLE-5
Service: RCIC turbine exhaust to torus

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: 75-395-51

1) Hanger Detailed Drawings:

None

2) Valve Vendor Prints:

V-24-8 M1541A-005-4

Line #: HLE-6
Service: HPCI turbine exhaust to torus

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings

H-7	BP-1507 R2
H-7A	BP-9656 R2

2) Valve Vendor Print Number

V-22-17	M151A-008-4

Line #: HLE-7
Service: RHR pump suction from torus through MO-1989

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

None

2) Valve Vendor Print Number

MO-1989 M151A-11-3

Line #: HLE-12
Service: RHR pump discharge to torus spray from MO-1933

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-17	BP-1731
H-18	BP-1732

2) Valve Vendor Print Numbers

(No Valves)

Line #: HLE-13
Service: RHR test line to torus from MO-1934 and MO-2038 and MO-2009

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

H-16	BP-1730	H-157	BP-4157, R1
H-19	BP-1733	H-158	BP-4158, R1
H-20	BP-1734	H-159H	BP-4159, R2
H-21	BP-1735	H-160	BP-4160, R1
H-22	BP-1736	H-161	BP-4161, R1
FH-1	BP-9644, R1		
H-210	BP-6710, R1		
H-211	BP-6711, R1		
H-212	BP-6712, R1		
H-213	BP-6713, R1		
H-215	BP-6715, R1		
H-214	BP-6714, R1		

2)

V-19-28	M137B-33-1
V-19-29	M137B-33-1
V-37-23	M137B-9-3
V-37-21	M137A-41-3
V-37-22	M137B-9-3
V-37-24	M137A-41-3
V-37-25	M137B-9-3

Line # HLE-15
Service: RHR pump discharge to containment coil from MO-200 through penetration

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Valves

H-14 BP-1728,R2
H-15 BP-1729

2) Valve

MO-2112 M151A-25-1

Line #: HLE-16
Service: Core Spray Test Line

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

H-11 BP-1749 R2
H-12 BP-1750 R2

2) Valve Vendor Prints:

None

Line #: HLE-18
Service: RHR pump discharge to containment coil from MO-1902 through penetration

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric cannot be found

1) Hanger Drawing Number

None

2) Valve Vendor Print Number

None

Line #: HLE-24
Service: Torus vent purge exhaust

Design Input Documents:

Piping Class/Summary Sheet: HLE/,-190
Seismic Reponse Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Drawing Numbers

H-1	BP-4501, R2
H-2	BP-4502, R2
H-3	BP-4503, R1
	BP-4503A, R1
H-4	BP-4504, R2

2) Valve Vendor Print Numbers

CV-4300	—
CV-4301	—

Line #: HLE-25
Service: Containment purge (supply)

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Reponse Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

H-5	4505/0
H-6	4506/1
H-7	4507

2) Valve Vendor Print Numbers

CV-4306	M144D-2(6)-3
CV-4307	M144D-9-4

Line #: HLE-26
Service: Torus purge (supply)

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

H-8 4508/2 & 4508A/1

2) Valve Vendor Print Number

CV-4308 M144D-9-4 & M144D-2(7)-3

Line #: HLE-27
Service: Torus Vacuum breaker line

Desi Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric cannot be found

1) Hanger Detailed Drawings:

H-9 BP-4509 R2
BP-4509A R1
H-10 BP-4510 R2
BP-4510A R1

2) Valve Vendor Prints:

CV-4304
CV-4305

Line #: HLE-28
Service: Reactor building cooling water penetration supply

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detail Drawings:

(No Hangers)

2) Valve Vendor Print Number

MO-4841 B M137B-15-6

Line #: HLE-29
Service: Reactor building cooling water penetration return

Design Input Documents:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) Hanger Detailed Drawings:

(No Hangers)

2) Valve Vendor Print Number

MO-4841 A M137B-16-4

LIST OF DESIGN DOCUMENTS FOR SEISMIC ANALYSIS OF GROUP 2 LINES

LINE #: DBB-2
SERVICE: RHR HEAT EXCH DISCHRAGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: DBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS

H-20B BP 9714, R1

2) VALVE VENDOR PRINT NUMBERS

MO 1904 M133C-2(1)-11

LINE #: EBB-18
SERVICE: CORE SPRAY PUMP DISCHARGE

DESIGN INPUT DOCUMENTS: 150

Piping Class/Summary Sheet: EBB/M-190
Seismic Reponse Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS
H-10A BP 9726, R3
BP 9726A, R1

2) VALVE VENDOR PRINT NUMBERS

MO 2135

LINE #: GBB-4
SERVICE: RHR PUMP DISCHARGE

DESIGN INPUT DOCUMENTS

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-1	BP 1839, R1		
	BP 1839A, R1		
	BP 1839B, R1		
H-2	BP 1840, R1		
H-3	BP 1841, R1		
H-4	BP 1842, R2		
	BP 1842A, R1		
H-5	BP 1843, R2		
H-6	BP 1844, R1	H-9	BP 1861, R3
		SS-211	BP 2064, R1
H-2	BP 1854, R2	H-10	BP 1862, R2
	BP 1854A, R1	H-11	BP 1864, R3
SS-210	BP 2063, R1	H-12	BP 1864, R3
H-3	BP 1855, R2	H-13	BP 1865, R3
H-4	BP 1856, R2	SS-216	BP 2069, R1
SR-5	BP 1857, R1	H-200	BP 9713, R1
SR-6	BP 1858, R1		BP 9713, R1
SS-217	BP 1859, R2	SS-213	BP 2066, R1
H-7	BP 1859, R2	SS-212	BP 2065, R1
H-8	BP 1860, R1		

2) VALVE VENDOR PRINT NUMBERS

V-20-1	M137A-1-4
V-20-2	M137A-10-4
V-20-3	M137A-1-4
V-20-4	M137A-10-4
V-20-14	M137B-4-3
V-20-12	M137B-4-3
MO 2030	M137A-9-6

LINE #: GBB-7
SERVICE: RHR PUMP DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-7	BP 1845, R1
SS-223	BP 2076, R1
SS-224	BP 2077, R1
	BP 2077A, R1
	BP 2077B, R1

2) VALVE VENDOR PRINT NUMBERS:

MO 2029	M137A-13-4

LINE #: GBB-9
SERVICE: RHR HEAT EXCH DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-1	BP 1853, R1
	BP 1853A, R1

2) VALVE VENDOR PRINT NUMBERS:

MO 2031	M137A-13-4

LINE #: GBB-14
SERVICE: CORE SPRAY PUMP DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SR-18	BP 1794, R1	SR-21	BP 1797, R1
H-1	BP 1739, R1	H-7	BP 1745, R1
H-2	BP 1740, R1		BP 1745A, R2
H-3	BP 1741, R2	H-8	BP 1746, R2
H-4	BP 1742, R2	H-9	BP 1747, R2
	BP 1742A, R1		BP 1747A, R1
SS-20	BP 1796, R1	SS-22	BP 1798, R1
	BP 1796A, R2		BP 1798A, R1
H-5	BP 1743, R1	H-10	BP 1748, R2
H-6	BP 1744, R3		

2) VALVE VENDOR PRINT NUMBERS:

V-21-10	M137A-2-4
MO-2132	M151A-3-4

LINE #: GBB-16
SERVICE: RHR PUMPS - TEST LINE; RHR HEAT EXCH DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: GBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SS-214 BP 2067, R2

H-29	BP 1944, R1	H-104	BP 1956, R1
H-93	BP 1945, R1	H-105	BP 1957, R1
H-94	BP 1946, R1	H-106	BP 1958, R1
H-95	BP 1947, R1	H-107	BP 1959, R1
H-96	BP 1948, R1	H-91	BP 1943, R1
H-97	BP 1949, R1	H-90	BP 1942, R1
H-98	BP 1950, R1	H-88	BP 1941, R1
H-99	BP 1951, R1	H-89	BP 1940, R1
H-100	BP 1952, R1		BP 1940A, R1
H-101	BP 1953, R1	H-87	BP 1939, R1
H-102	BP 1954, R1	H-86	BP 1938, R1
H-103	BP 1955, R1		

2) VALVE VENDOR PRINT NUMBERS:

V-20-5	M137A-3-4
MO-2036	M137B-10-3
CV-2037	M144A-126-2
MO-2009	M137B-013-4
MO-2038	M137B-012-4
V-20-7	M137B-5-3
V-20-8	M137A-4-4
V-20-9	M137B-5-3
V-20-6	M137A-4-4

LINE #: GBC-1
SERVICE: PUMPHOUSE RHR SW

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: GBC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-57	BP 2557, R1	SS-56	BP 6156, R1
H-58	BP 2558, R2		BP 6156A, R1
H-59	BP 2559, R1	SS-57	BP 6157, R1

		SR-85	BP 6185, R1
H-51	BP 2551, R0	H-5	BP 2505, R1
H-52	BP 2552, R1	SR-58	BP 6158, R1
H-53	BP 2553, R2	H-4	BP 2504, R1
H-54	BP 2554, R1		BP 2504A, R1
H-55	BP 2555, R1	H-3	BP 2503, R1
H-56	BP 2556, R1	H-2	BP 2502, R1
		H-1	BP 2501, R1
H-6	BP 2506, R2		BP 2501A, R1
	BP 2506A, R2	SR-84	BP 6184, R1

2) VALVE VENDOR PRINT NUMBERS:

V-46-28	M137A-44-2
V-46-29	M137A-44-2
V-46-30	M137-35-3
V-46-26	M137-35-3
V-46-31	M137-45-2
V-46-27	M137-45-2
V-13-24	M137A-44-2
V-13-23	M137A-44-2

LINE #: GBC-3
SERVICE: RHR SW RETURN

DESIGN INPUT DOCUMENTS

Piping Class/Summary Sheet: GBC/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS

H-29	BP 2529, R1	H-30	BP 2530, R1
SR-67	BP 6167, R1		BP 2530A, R2
SR-65	BP 6165, R1	SR-66	BP 6166, R1

2) VALVE VENDOR PRINT NUMBERS:

V-13-25	M137A-44-2
MO 2046	M144A-120-4

LINE #: GLE-6
SERVICE: CORE SPRAY PUMP DISCHARGE

DESIGN INPUT DOCUMENTS

Piping Class/Summary Sheet: GLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-16 BP 1754, R1

2) VALVE VENDOR PRINT NUMBERS:

MO 2005 M151A-006-4
MO 2006 M-137A-017-4
MO 2007 M-151A-007-4

LINE #: HBB-1
SERVICE: CORE SPRAY PUMP SUCTION

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-1	BP 1708, R2	SS-9	BP 1785, R2
H-2	BP 1709, R2	SS-10	BP 1786, R1
H-3	BP 1710, R1	H-6	BP 1713, R3
H-4	BP 1711, R1		BP 1713A, R2
H-5	BP 1712, R2	H-7	BP 1714, R2
			BP 1714A, R2

2) VALVE VENDOR PRINT NUMBERS:

MO 2120 M137A-015-3
V-21-2 M137A-011-4

LINE #: HBB-24
SERVICE: RHR PUMP SUCTION

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SS-229	BP 2082, R1	H-1	BP 1801, R3
H-6	BP 1826, R2		BP 1801A, R2
H-7	BP 1827, R2	H-1A	BP 9660, R3
SS-228	BP 2081, R1		BP 9660A, R2
H-8	BP 1828, R2	H-2	BP 1802, R3
	BP 1828A, R1		BP 1802A, R2
	BP 1828B, R1	H-3	BP 1803, R3

H-9	BP 1829, R2
H-10	BP 1830, R2
H-11	BP 1831, R2
H-12	BP 1832, R2
H-13	BP 1833, R2
SS-227	BP 2080, R1
H-14	BP 1834, R2
H-15	BP 1835, R2
H-16	BP 1836, R2
H-17	BP 1837, R2
H-18	BP 1838, R2
H-4	BP 1804, R2
	BP 1804A, R1
SS-221	BP 2074, R1
	BP 2074A, R1
H-5	BP 1805, R2
	BP 1805A, R1
SS-222	BP 2075, R1
H-6-1	BP 1806, R2
H-7-1	BP 1807, R3
	BP 1807A, R1
H-8-1	BP 1808, R2
	BP 1808A, R2
H-9-1	BP 1809, R2
H-10-1	BP 1810, R3
	BP 1810A, R1

2) VALVE VENDOR PRINT NUMBERS:

MO 2069	M151A-11-3
MO 2012	M137A-18-4
MO 2011	M137A-18-4
MO 2015	M137A-18-4
MO 2016	M137A-18-4

LINE #: HBB-30
SERVICE: RESIDUAL HEAT REMOVAL (REACTOR BLDG)

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBB/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-202	BP 2055, R1
H-203	BP 2056, R3
H-204	BP 2057, R2
SS-205	BP 2058, R1
SS-206	BP 2059, R1
H-207	BP 2060, R3
SR-208	BP 2061, R2
H-209	BP 2062, R2
SS-245	BP 2098, R1

2) VALVE VENDOR PRINT NUMBERS:

NONE

LINE #: HBD-25
SERVICE: EMERGENCY SW

DESING INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-7	BP 2591, R1	H-12	BP 2627, R1	H-64	BP 7001, R1
H-8	BP 2592, R2	H-13	BP 2628, R1	H-65	BP 7002, R1
H-9	BP 2593, R3	H-14	BP 2629, R2	H-66	BP 7003, R1
H-10	BP 2594, R2	H-15	BP 2630, R2	H-67	BP 7004, R1
H-11	BP 2595, R3	H-16	BP 2631, R1	FH-1	BP 7093, R1
			BP 2631A, R1	H-68	BP 7005, R1
H-1	BP 2616, R1			H-69	BP 7006, R1
H-2	BP 2617, R1	H-114	BP 7051, R1	H-70	BP 7007, R2
H-3	BP 2618, R1	H-115	BP 7052, R1	H-71	BP 7008, R2
SG-145	BP 6245, R1	SA-148	BP 6248, R1	H-72	BP 7009, R3
H-4	BP 2619, R1	H-116	BP 7053, R1		BP 7009A, R1
H-5	BP 2620, R1	H-117	BP 7054, R1		
H-6	BP 2621, R1	H-118	BP 7055, R2	H-119	BP 7056, R1
H-7-1	BP 2622, R1	FH-4	BP 9659, R1		
H-8-1	BP 2624, R1				
H-9-1	BP 2624, R1	H-62	BP 2699, R2		
H-10-1	BP 2625, R1		BP 2699A, R1		
			BP 2699B, R1		
H-11-1	BP 2626, R1	H-63	BP 7000, R1		
			BP 7000A, R1		

2) VALVE VENDOR PRINT NUMBERS:

V-46-18	M135A-033-3	V-13-38	M135A-031-2
V-46-19	M135A-031-2	V-69-70	M135A-004-8
V-46-20	M135A-031-2	V-69-71	M135A-006-5
V-46-23	M135A-004-8	MO 2039B	M135A-034-2
V-13-37	M135A-033-3	V-13-45	M135A-31-2
V-13-36	M135A-033-3		

LINE #: HBD-27
SERVICE: EMERGENCY SW

DESING INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SR-105	BP 6205, R1	SG-106	BP 6206, R1
	BP 6205A, R1		BP 6206A, R1
SR-6	BP 6118, R2	H-4	BP 2657, R1
	BP 6118A, R2	SR-107	BP 6207, R1
	BP 6118B, R2	H-5	BP 2658, R1
H-3	BP 2656, R1	H-6	BP 2659, R1

2) VALVE VENDOR PRINT NUMBERS:

CV-2081	M135A-68-1
V-13-34	M135A-32-3

LINE #: HBD-29
SERVICE: EMERGENCY SW

DESING INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-1	BP 2632, R1	FH-2	BP 7092, R1
	BP 2632A, R1	H-79	BP 7016, R1
H-2	BP 2633, R1	H-80	BP 7017, R1
H-3	BP 2634, R2	H-81	BP 7018, R1
H-4	BP 2635, R2	H-82	BP 7019, R2
H-5	BP 2636, R1	H-83	BP 7020, R2
		SA-100	BP 6200, R2
H-73	BP 7010, R1		
H-74	BP 7011, R1	H-109	BP 7046, R1
SA-151	BP 6251, R1	H-110	BP 7047, R1
H-75	BP 7012, R1	H-111	BP 7048, R1
H-76	BP 7013, R1	H-112	BP 7049, R2
H-77	BP 7014, R1		
H-78	BP 7015, R1	H-113	BP 7050, R1

2) VALVE VENDOR PRINT NUMBERS:

V-13-125	M135C-1-1
V-13-39	M135A-31-2
TCV-6924-B	M90-4-1
MO-2078	M135A-34-2
CV-1956	M135A-67-1
V-13-46	Field Purchase

LINE #: HBD-30
SERVICE: RHR SW RETURN

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-31	BP 2531, R1	H-33	BP 2533, R1
SR-68	BP 6168, R1	H-34	BP 2534, R1
H-32	BP 2532, R2		

2) VALVE VENDOR PRINT NUMBERS:

MO-1998A	M-144C-30-3
	M-144C-49-1

LINE #: HBD-68
SERVICE: RIVER WATER SUPPLY

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SA-43	BP 6143, R1	SA-31	BP 6131, R2
	BP 6143A, R1	H-34	BP 5234, R1
SA-41	BP 6141, R1	H-33	BP 5233, R2
	BP 6141A, R1		
H-11	BP 2579, R2	H-38	BP 5238, R2
H-12	BP 2580, R2	SA-33	BP 6133, R2
		H-39	BP 5239, R1
H-6	BP 2574, R2	H-36	BP 5236, R2
H-7	BP 2575, R2	SA-32	BP 6132, R2
SA-38	BP 6138, R1	H-37	BP 5237, R1
	BP 6138A, R1		BP 5237A, R1
FH-30	BP 9503, R1	H-15	BP 2583, R1
H-31	BP 5231, R2	H-16	BP 2584, R1
FH-31	BP 9504, R1	SA-42	BP 6142, R2
H-30	BP 5230, R3		BP 6142A, R1
		SA-34	BP 6134, R4

2) VALVE VENDOR PRINT NUMBERS:

CV-4915	M-144C-029-1	AV-2909A	Field Purchase
CV-4910B	M-144C-023-5	AV-2909C	Field Purchase
V-29-1	M-132-002-4	AV-4917	Field Purchase
V-29-3	M-132-002-4	V-46-45	M-135-004-8
V-29-2	M-144C-014-4	V-46-44	M-135-032-3
V-29-4	M-144C-014-4		
V-29-9	M-135-004-8		
AV-2909E	Field Purchase		
V-29-38	M-135-004-8		

LINE #: HBD-81
SERVICE: EMERGENCY SW

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SR-2	BP 6114, R2	SR-110	BP 6210, R1
	BP 6114A, R2	H-14	BP 2667, R2
H-11	BP 2664, R2	H-15	BP 2668, R2
H-12	BP 2665, R2		
SG-109	BP 6209, R1		
H-13	BP 2666, R2		

2) VALVE VENDOR PRINT NUMBERS

NONE

LINE #: HBD-160
SERVICE: CHILLED WATER

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-8	BP 8008, R2	H-13	BP 8013, R1	H-23	BP 8023-2, R1
H-8A	BP 9552, R0	H-21	BP 8021-2, R1		
H-9	BP 8009-2, R1	H-22	BP 8022-2, R1		

2) VALVE VENDOR PRINT NUMBERS

V-69-50	M135BC-1-1	V-69-65	M135BC-1-1
V-69-64	M135BC-1-1		

LINE #: HBD-162
SERVICE: CHILLED WATER

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

SA-20	BP 8020, R1
H-21	BP 8021-3, R1
H-22	BP 8022-4, R1
H-23	BP 8023-4, R1
H-24	BP 8024, R1

2) VALVE VENDOR PRINT NUMBERS:

V-69-49	M135A-4-8
V-69-51	M135A-4-8

LINE #: HLE-3
SERVICE: CORE SPRAY PUMP

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

NONE

2) VALVE VENDOR PRINT NUMBERS:

MO-2146 M-151A-010-3

LINE #: HLE-8
SERVICE: RHR PUMP SUCTION

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

NONE

2) VALVE VENDOR PRINT NUMBERS

NONE

LINE #: HLE-11
SERVICE: CORE SPRAY PUMP DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-17 BP 1755, R1

2) VALVE VENDOR PRINT NUMBERS:

NONE

LINE #: HLE-14
SERVICE: CORE SPRAY PUMP DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

H-13 BP 1751, R1
H-14 BP 1752, R1
H-15 BP 1753, R3

2) VALVE VENDOR PRINT NUMBERS

NONE

LINE #: HLE-17
SERVICE: RHR HEAT EXCH DISCHARGE

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HLE/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DRAWING NUMBERS:

NONE

2) VALVE VENDOR PRINT NUMBERS:

NONE

LINE #: HBD-192
SERVICE: HPCI LUBE OIL PIPING

DESIGN INPUT DOCUMENTS:

Piping Class/Summary Sheet: HBD/M-190
Seismic Response Spectra: See FSAR
Piping Stress Isometric Drawings: Isometric Reconstructed

1) HANGER DETAIL DRAWINGS:

FH-1 BP 9761, R1
FH-2 BP 9762, R1

2) VALVE VENDOR PRINTS:

NONE

TABLE 2

SEISMIC CATEGORY I SYSTEMS, ASSOCIATED PIPING LINE NUMBERS AND INSPECTION GROUP

	LINE #	INSP GROUP	LINE #	INSP GROUP
ater	HBD-97	1		
Water Supply	HBD-67	1		
	HBD-68	2		
Bldg. Cooling Water	HBD-64	3		
	HBD-65	3		
	HLE-28	1		
	HLE-29	1		
ooling Water	GBC-1	2		
	GBC-2	1		
	GBC-3	2		
	GBC-4	1		
	GBC-5	1		
ste Sumps	HLE-30	3		
	HLE-31	3		
l Oil	HBD-34	1		
by Diesel Generators	HBD-61	1		
	HBD-80	1		
	HBD-81	2		
	HBD-122	1		
Control Building	HBD-159	1		
	HBD-160	2		
	HBD-161	1		
	HBD-162	2		
. & Demin. Water	HCC-6	1		
	HCC-7	1,3		
	HCC-8	1		

SEISMIC CATEGORY I SYSTEMS, ASSOCIATED PIPING LINE NUMBERS
AND INSPECTION GROUP

STEM	LINE #	INSP GROUP	LINE #	INSP GROUP
rc. Water	HBD-32	1		
	HBD-82	1		
ed Water	DBA-7	3		
	DBA-8	3		
	DCA-14	3		
	DLA-1	3		
	DLA-2	3		
R	DBB-1	1	GBB-18	1
	DBB-2	2	GBB-22	1
	DLA-4	3	GBB-23	1
	DLA-5	3	GLE-5	1
	DLA-6	3	GLE-6	2
	EBB-16	3	GLE-7	3
	GBB-3	1	GLE-8	3
	GBB-4	2	HBB-23	1
	GBB-5	1	HBB-24	2
	GBB-6	1	HBB-25	1,3
	GBB-7	2	HBB-29	1
	GBB-8	1	HBB-30	2
	GBB-9	2	HLE-11	2
	GBB-10	1	HLE-12	1
	GBB-15	1	HLE-13	1
	GBB-16	2	HLE-14	2
			HLE-17	2
			HLE-18	1,3
C	EBB-1	3	HBB-14	1
	EBB-4	1	HBB-15	1
	EBB-15	3	HBB-21	1
	HBB-7	1		

SEISMIC CATEGORY I SYSTEMS, ASSOCIATED PIPING LINE NUMBERS AND INSPECTION GROUP

SYSTEM	LINE #	INSP GROUP	LINE #	INSP GROUP
Core Spray	DLA-7	3	GBB-13	1
	DLA-8	3	GBB-14	2
	EBB-17	1	HBB-1	2
	EBB-18	2	HBB-2	1
			HLE-15	1
			HLE-16	1
HPCI	DLA-3	3	HBB-8	1
	EBB-5	3	HBB-9	1
	EBB-6	1		
	EBB-14	3	HLE-6	1
	HBB-6	1	HLE-19	1
Standby Liquid Control	HCB-2	1		
Emerg. Serv. Water	HBD-24	1,3	HBD-28	1
	HBD-25	2	HBD-29	2
	HBD-26	1	HBD-30	2
	HBD-27	2	HBD-31	1
CRD Hydraulic	DBA-6	3		
Primary Containment	HLE-1	1	HLE-5	1
	HLE-2	1	HLE-7	1
	HLE-3	2	HLE-8	2
	HLE-4	1		
H&V Primary Containment	HBD-94	3	HLE-32	3
	HBD-95	3	HLE-33	3
	HBD-115	3	HLE-34	3
	HBD-116	3	HLE-35	3
Reac. Water Cleanup	DCA-6	3		

SEISMIC CATEGORY I SYSTEMS, ASSOCIATED PIPING LINE NUMBERS AND INSPECTION GROUP

SYSTEM	LINE #	INSP GROUP	LINE #	INSP GROUP
Nuclear Boiler	DBA-3	3	DCA-4	3
	DBA-4	3	DCA-5	3
	DBA-5	3	DCA-8	3
	DCA-1	3	DCA-9	3
	DCA-2	3	DCA-16	3
	DCA-3	3		
Reactor Vessel Recirc.	HBD-129	1		
Stdby. Gas Treatment	HLE-23	1		
Contnment. Atmos. Control	HLE-21	3		
	HLE-24	1		
	HLE-25	1		
	HLE-26	1		
	HLE-27	1		
	HLE-36	3		
Main Steam	DBA-2	3	GBC-8	3
	EBD-2	3	GBC-9	3
	GBC-6	3	GBC-10	3
	GBC-7	3	GBC-11	3

Note:

Inspection Group 1 lines include all accessible portions of non-redundant systems and accessible portions of one of two non-redundant systems. These will be inspected by September 1, 1979.

Inspection Group 2 lines include accessible portions of redundant systems not included in Group 1. These will be inspected by November 1, 1979.

Inspection Group 3 lines include all inaccessible piping. These will be inspected by November 1, 1979.

GROUP 1 LINES

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
DBB-1	RHR Heat Exchanger Discharge	None	Evaluation Complete No Non-Conformance	
EBB-4	RCIC	Note 1	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
EBB-6	H.P.C.I.	Note 1	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
EBB-17	Core Spray	3	Evaluation Complete No Non-Conformance	
GBB-3	RHR Pump Discharge	1	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBB-5	RHR Pump Discharge	4	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBB-6	RHR Pump Discharge	2	Evaluation Complete No Non-Conformance	
GBB-8	RHR Pump Discharge	3	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBB-10	RHR	3	Evaluation Complete No Non-Conformance	
GBB-13	Core Spray	4	Evaluation Complete No Non-Conformance	
GBB-15	RHR Pump Discharge to Test Line	4	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBB-18	RHR	2	Evaluation Complete No Non-Conformance	
GBB-22	RHR	2	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBB-23	RHR	2	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBC-2	RHR Service Water	7	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GBC-4	RHR Cooling Water	1	Evaluation Complete No Non-Conformance	

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
GBC-5	RHR Service Water	7	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
GLE-5	RHR Pump Test Lines To Torus	None	Evaluation Complete No Non-Conformance	
HBB-2	Core Spray Pump Suction	2	Evaluation Complete No Non-Conformance	
HBB-6	H.P.C.I. Turbine Exhaust	2	Evaluation Complete No Non-Conformance	
HBB-7	Turbine Steam Exhaust	1	Evaluation Complete No Non-Conformance	
HBB-8	H.P.C.I. Pump Suction	1	Evaluation Complete No Non-Conformance	
HBB-9	H.P.C.I. Pump Suction from Condensate	1	Evaluation Complete No Non-Conformance	
HBB-14	RCIC Pump Suction	5	Evaluation Complete No Non-Conformance	
HBB-15	RCIC Pump Suction from Condensate Storage Tank	2	Evaluation Complete No Non-Conformance	
HBB-21	RCIC14 from RHR Heat Exchanger	8	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
HBB-23	RHR Pump Suction	8	Evaluation Complete No Non-Conformance	
HBB-25	Drain From Fuel Pool Skimmer	3	Evaluation Complete for accessible portions No Non-Conformance	Portions Inaccessible in pipeway
HBB-29	RHR	1	Evaluation Complete No Non-Conformance	

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
HBD-24	Emergency Service Water	28	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
HBD-26	Emergency Service Water	2	Evaluation Complete No Non-Conformance	
HBD-28	Emergency Servlce Water	6	Evaluation Complete No Non-Conformance	
HBD-31	RHR Cooling Water	6	Evaluation Complete No Non-Conformance	
HBD-32	RHR Service Water	2	Evaluation Complete No Non-Conformance	
HBD-34	Diesel Oil	2	Evaluation Complete No Non-Conformance	
HBD-61	Diesel - Air Supply	2	Evaluation Complete No Non-Conformance	
HBD-67	River Water Pump Discharge	15	Evaluation Complete No Non-Conformance	
HBD-80	Emergency Service Water	6	Evaluation Complete No Non-Conformance	
HBD-82	Circ. Water	4	Evaluation Complete No Non-Conformance	
HBD-97	Well Water	2	Evaluation Complete No Non-Conformance	
HBD-122	Standby Diesel Generator	7	Evaluation Complete No Non-Conformance	
HBD-129	M.G. Set Oil Piping	None	Evaluation Complete No Non-Conformance	

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Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
HBD-159	Reactor Building Chill Water	7	Evaluation Complete No Non-Conformance	
HBD-161	HVAC Control Building	7	Evaluation Complete No Non-Conformance	
HCB-2	Standby Liquid Control	4	Evaluation Complete No Non-Conformance.	
HCC-6	HPCI Pump Suctions	1	Evaluation Complete No Non-Conformance	
HCC-7	Condenser & Demin. Intr.	3	Evaluation Complete No Non-Conformance	Cannot Veri pipe due to radiation
HCC-8	Core-Spray Pump Suction	3	Evaluation Complete No Non-Conformance	
HLE-1	HPCI Suction	None	Evaluation Complete No Non-Conformance	
HLE-2	RCIC Pump Suction From Torus	None	Evaluation Complete No Non-Conformance	
HLE-4	Core Spray	None	Evaluation Complete No Non-Conformance	
HLE-5	Turbine Steam Exhaust	3	Evaluation Complete No Non-Conformance	
HLE-6	HPCI Turbine Exhaust	None	Evaluation Complete No-Non Conformance	
HLE-7	RHR Pump Suction	1	Evaluation Complete No Non-Conformance	Seismic Analy As-Built, per
HLE-12	Core Spray Pump Discharge	None	Evaluation Complete No Non-Conformance	
HLE-13	Core Spray Pump Discharge	None	Evaluation Complete No Non-Conformance	

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
HLE-15	Core Spray Pump Discharge	None	Evaluation Complete No Non-Conformance	
HLE-16	Core Spray Test Lines	1	Evaluation Complete No Non-Conformance	
HLE-18	Core Spray Test Lines	None	Evaluation Complete For accessible portion No non-Conformance	Cannot verify [illegible] in [illegible]
HLE-19	Core Spray pump Discharge	Note 1	Evaluation Complete No Non-Conformance	Seismic Analysis of As-Built, performed
HLE-23	Containment Vent Purge Exhaust	Note 1	Evaluation Complete For accessible portion No Non Conformance	Seismic Analysis of As-Built, performed
HLE-24	Torus Vent Purge Exhaust	5	Evaluation Complete No Non-Conformance	
HLE-25	Containment Atmos. Control	2	Evaluation Complete No Non-Conformance	
HLE-26	Containment Atmos. Control	None	Evaluation Complete No Non-Conformance	
HLE-27	Torus Vacuum Breaker	1	Evaluation Complete No Non-Conformance	
HLE-28	Drywell Cooling Water	None	Evaluation Complete No Non-Conformance	
HLE-29	Drywell Cooling Water	None	Evaluation Complete No Non-Conformance	

GROUP-2 LINES

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
DBB-2	RHR Heat Exch Discharge	None	Evaluation Complete No Non-Conformance	
EBB-18	Core Spray Pump Discharge	3	Evaluation Complete No Non-Conformance	
GBB-4	RHR Pump Discharge	5	Evaluation Complete No Non-Conformance	Analysis of as built configuration was performed
GBB-7	RHR Pump Discharge	See GBB-5	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
GBB-9	RHR Heat Exch Discharge	See GBB-4	Evaluation Complete No Non-Conformance	Analysis of as built configuration was performed
GBB-14	Core Spray Pump Discharge	6	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
GBB-16	RHR Pumps-Test Line; RHR Heat Exch Discharge	8	Evaluation Complete No Non-Conformance	
GBC-1	Pumphouse RHR SW	10	Evaluation Complete No Non-Conformance	
GBC-3	RHR SW Return	1	Evaluation Complete No Non-Conformance	
GLE-6	Core Spray Pump Discharge	(see GBB-14)	Evaluation Complete No Non-Conformance	
HBB-1	Core Spray Pump Suction	8	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HBB-[illegible]	RHR Pump Suction	2	Evaluation Complete No Non-Conformance	Analysis o[illegible] built confi[illegible]ation

GROUP-2 LINES

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
HBB-30	Residual Heat Removal Reactor Bldg.	4	Evaluation Complete No Non-Conformance	
HBD-25	Emergency SW	11	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HBD-27	Emergency SW	3	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HBD-29	Emergency SW	24	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HBD-30	RHR SW Return	3	Evaluation Complete No Non-Conformance	
HBD-68	River Water Supply	13	Evaluation Complete No Non-Conformance	Analysis of as-built conflguration was performed
HBD-81	Emergency SW	None	Evaluation Complete No Non-Conformance	
HBD-160	Chilled Water	5	Evaluation Complete No Non-Conformance	
HBD-162	Chilled Water	4	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HBD-192	Lube Oil	Note 1	Evaluation Complete No Non-Conformance	Analysis of as-built configuration was performed
HLE-3	Core Spray Pump Discharge	See HBB-1	Evaluation Complete No Non-Conformance	Analysis of as-built configu[illegible]n was performe[illegible]

Line No.	System	Number of Discrepancies	Evaluation Status	Remarks
HLE-8	RHR Pump Suction	None	Evaluation Complete No Non-Conformance	
HLE-11	Core Spray Pump Discharge	(see GBB-14)	Evaluation Complete No Non-Conformance	Analysis of as-built configuratio was performed
HLE-14	Core Spray Pump Discharge	(see GBB-14)	Evaluation Complete No Non-Conformance	Analysis of as-built configuratic was performed
HLE-17	RHR Heat Exch Discharge	(see GBB-4)	Evaluation Complete No Non-Conformance	Analysis of as-built configuratic was performed