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Portland General Electric Company

Donald J. Broehl Assistant Vice President

August 1, 1979

Trojan Nuclear Plant
Docket 50-344
License NPF-1

Mr. R. H. Engelken, Director
U.S. Nuclear Regulatory Commission
Region V
Suite 202, Walnut Creek Plaza
1990 N. California Blvd.
Walnut Creek, CA 94596



Dear Sir:

As outlined in IE Bulletin 79-14, Rev. 1, dated July 18, 1979, PGE was advised of difficulties at other plants related to the accuracy of input information for seismic analyses of safety-related piping systems, and was requested to verify that analytical input data conforms to installed system configurations. Item 1 requested information concerning seismic analysis input and the inspection plan. Item 2 provided details for an inspection of certain accessible piping to be completed in 60 days, and Item 3 requested inspection of all piping within 120 days.

This submittal provides the information requested in Item 1, and outlines the inspection plan for the 60-day report requested in Item 2. We believe that the results of the 60-day inspection will show that we have built and maintained operable piping systems which are in conformance with the seismic analyses. The 60-day report, in conjunction with previous investigations and verification outlined below, should provide sufficient justification for excluding Trojan from the 120-day report requirements.

Previous confirmatory work includes:

- A. Results of investigations initiated pursuant to other IE Bulletins have revealed no significant discrepancies; specifically:
 - (i) Appropriate computer codes were utilized for a seismic analysis of safety-related piping (IE Bulletin 79-07).

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- (ii) Appropriate weights were utilized in analyses for systems with Velan check valves (IE Bulletin 79-04).
 - (iii) Field inspection and testing of pipe support base plates and anchor bolts did not identify any conditions affecting the operability of any Seismic Category I piping system (IE Bulletin 79-02, Rev. 1).
- B. The continuing evaluation and modifications of supports for Seismic Category I piping in the Control-Auxiliary-Fuel Building Complex to accommodate revised SSE response spectra has not identified any conditions which affect the operability of safety-related systems (Control Building Proceeding).
- C. A survey of safety-related piping was initiated in early 1978 to evaluate potential additional stresses due to grouted wall penetrations. This effort, which involved a walkdown of the piping and confirmation/closeout by drawing update to show the location of wall penetrations on the piping isometrics, did not identify any conditions which affected system operability (Licensee Event Report 78-20, reports dated July 21, 1978, October 6, 1978, and December 26, 1978).
- D. Design changes completed since initial plant operation have been controlled by an ongoing design change program. This program includes the closeout of as-built drawings by walkdown and markup of design drawings, which are then incorporated on the originals. Deviations from design, if any, are reviewed and resolved. In this manner, a continuing "as-built" status of design drawings is maintained.
- E. Prior to initial operation in 1975, the construction contractor provided the details of the as-built configuration of all critical piping to the designer for confirmation against the stress design isometrics. This review covered all Seismic Category I piping and other piping whose service condition necessitated stress analysis. This review was conducted in parallel with a separate hangar and restraint location survey on Nuclear Class I piping inside containment by an independent engineering company. In addition to these checks, all Seismic Category I piping system hangars and restraints were independently inspected by our Architect-Engineer's stress analyst to ensure that

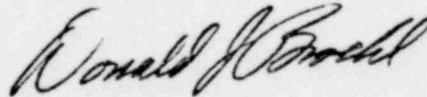
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the as-built installation conformed to the design documents. In this review, the design isometrics were compared to the as-built installation to validate the design basis of stress analysis calculation. All significant piping and piping restraint data was inspected and deviations from design were noted, evaluated, and resolved prior to initial operation. While most of the work in Item D and E was completed more than 12 months ago, we do not know of any actions in the intervening period of time that would degrade the original high quality of this work.

In conclusion, PGE feels that compliance with the Bulletin is obtained by implementing Items 1, 2 and 4 and by relying upon investigations previously conducted in lieu of Item 3, as described above. Based on the results of these documented inspections and investigations, we feel that we have reasonable assurance that the problems identified in IE Bulletin 79-14, Rev. 1, do not exist for the Trojan Nuclear Plant. If, however, after receiving our 60-day report, the NRC decides that Trojan should be shut down to perform a 100 percent inspection, we request that the inspection be deferred until our next refueling, which is scheduled for early next year. Trojan, currently, is essential to meeting our load requirements, and this situation is expected to persist for the next several months. The Pacific Northwest is currently experiencing a substantial shortage of energy from our normal hydroelectric resources. Rainfall has been significantly below normal, and we expect no relief until the winter rains commence, which may or may not fill reservoirs. Deferring the shutdown portion of the inspection until the refueling outage will improve the probability of preventing electrical power shortages until the reservoirs in the area have had an opportunity to return to normal levels.

Sincerely,



c: Director
Office of Inspection & Enforcement

Director
Nuclear Reactor Regulation
ATTN: Mr. A. Schwencer

Mr. Lynn Frank Director
State of Oregon
Department of Energy

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TROJAN NUCLEAR PLANT
PORTLAND GENERAL ELECTRIC COMPANY

IE BULLETIN 79-14, REVISION 1
INSPECTION OF SEISMIC PIPING AND
REVIEW OF SEISMIC CALCULATIONS

30-DAY REPORT



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I. INTRODUCTION

Nuclear Regulatory Commission IE Bulletin 79-14 (Revision 1), dated July 2, 1979, requires all licensees in nuclear power plants to confirm the design and installation of seismic piping systems and review the associated seismic analyses. Pursuant to the bulletin, we have established inspection procedures and compiled information to allow us to begin these inspections in order to complete them as requested.

II. 30-DAY ACTION ITEMS

1. Identify inspection elements to be used in verifying that the seismic analysis input information conforms to the actual configuration of safety-related items.

Response

Verification that the seismic analysis input information conforms to the actual configuration of safety-related systems is being confirmed through the use of the following inspection elements:

- a. Compilation of drawing packages which contain the the latest as-built drawings organized by specific areas.
 - b. Physical walkdown of the piping identified by the packages in Item a. The inspection includes the requirements listed in Item 2 of IE Bulletin 79-14, Revision 1.
 - c. A comparison of the completed walkdown packages with the input data of the original seismic analysis by the consultants who performed the original analysis. The analysis for the Reactor Coolant System was performed by Westinghouse, and the analysis for the balance of the Seismic I piping systems was performed by Bechtel Power Corporation of San Francisco.
2. For each safety-related system, submit a list of design documents, including title, identification number, revision, and date, which were sources of input information for the seismic analyses. Also submit a description of the seismic analysis input information which is contained in each document.

Response

Appendix A is a listing of the design documents used by Westinghouse in their analysis. Appendix B is a listing of the documents used by Bechtel.

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3. Identify systems or portions of the system which are planned to be inspected during each sequential inspection identified in Items 2 and 3.

Response

Appendix C contains a listing of all the large piping (2-1/2 in. and over) isometrics grouped by system. The listing identifies which isometrics are to be inspected for the 60-day report. Small piping which has been dynamically analyzed will also be inspected but is not included in this tabulation.

APPENDIX A

IE-79-14 Information	Class 1 Piping General	Page 1 of 2
Document	Description	
Piping Design Specification ANSI B31.7 - Nuclear Class 1 - #G-678908, Rev. 2 - 3/18/74	General ANSI B31.7 Class 1 piping spec. Establishes design by analysis requirements for Nuclear Class 1 piping and fittings.	
Piping Design Specification ANSI B31.7 Nuclear Class 1 for Portland General Electric Company - Trojan Nuclear Power Plant, Unit No. 1 - #678856, Rev. 2 - 12/11/75	Gives revisions and additions to Spec G-678908, Rev. 2 (above), specific to Trojan Unit 1, including requirements for design and manufacture of ANSI B31.7 Class I piping and fittings. Note: - Paragraph 1.1.5.3 specifies the responsibilities of Bechtel Corp. Paragraph 1.1.5.3.7.3 states the Bechtel-supplied information used in the Westinghouse piping analysis effort. - Paragraph 2.1.3 references Westinghouse equipment Spec G-677352, "Material Specification Pipe and Fittings - ANSI B31.7", Rev. 3, which gives material schedule and pressure rating for typical piping systems used in the Westinghouse N.S.S.S.	
Appendices to G-678908 for Portland General Electric Company - Trojan Nuclear Power Plant - Unit No. 1 - #952595, Rev. 0, 12/11/75	See title and description of above specs. Note: - Paragraph 3.2 gives the Trojan Nuclear Plant, Portland General Electric Co. line list which gives 100% power temperatures and pressures of piping considered. - Paragraph 3.3 gives seismic design data - specifically paragraph 3.3.1 lists the Bechtel letters giving the response spectra used, Table 3.3.3-1 gives the damping values used. Para- graph 3.3.9 specifies methods and input for seismic anchor motion analysis - Paragraph 3.4 lists RCL and pressurizer surge line drawings used. - Paragraph 3.5 lists all C.F.A. auxiliary line drawings used. The work done using these drawings has been reconciled to as-built revisions to these drawings and subsequent information printed by Bechtel letters (see listing for individual auxiliary lines).	

APPENDIX A

IE-79-14 Information	Class 1 Piping General	Page 2 of 2
Document	Description	
Spec #952595, Rev. 0 (Cont.)	- Paragraph 3.6 specifies references for the RCL stiffness matrices used. - Paragraph 3.7 gives equipment specs and drawing numbers of equipment including all Class 1 valves.	
Bechtel and Pipe Contractor Isometrics, Piping and Mechanical Drawings, and Civil/Structural Drawings	Piping configuration and equipment location.	
Bechtel Correspondence	Insulation weights, stiffnesses of all anchors, "as-built" isometric changes, pipe whip restraint, shim locations, and revised support details.	

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APPENDIX B

DESIGN DOCUMENTS CONTAINING INPUT DATA
FOR PIPING SEISMIC ANALYSIS

<u>Title</u>	<u>Data for Seismic Analysis</u>
Specification for Piping Materials and Standard Details for the Trojan Nuclear Plant, M-300, Rev. 23, dated 9-9-76	Pipe material, temperature, wall thickness, fitting standard and penetration details.
Trojan Unit 1 Final Safety Analysis Report, Sec. 3.7 and 3.8, Amendment 33, dated Feb., 1979	Load combinations, seismic class criteria, damping ratio
Piping Isometric Drawings*	Pipe routing, size
Walkdown Data Sheets*	As-built pipe routing and hanger location
Seismic Response Spectrum Curves, Rev. 1, dated 5/7/79	Dynamic excitation of pipe model
Valve and Valve Operator Vendor Prints*	Weight and dimensional data
Insulation Schedule for Piping, M-158, Rev. 1, dated 10/17/72	Material and thickness of pipe insulation
Westinghouse Line List*	Temperature of <u>W</u> piping

* Represents a group of design drawings.

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Abbreviations

DS = Dilution Structure
EMB = Embedded Pipe
HR = High Radiation*
IA = Inaccessable*
MSSS = Main Steam Support Structure
PC = Pipe Chase Next to Rm 156 B Charging pump
PIT = Service Water Strainer PIT
PO = Power Operation*
PW-1 = Pipe Way East Half Above Corridor 137 El. 5'
PW-2 = Pipe Way West Half Above Corridor 137 El. 5'
PW-3 = Pipe Way Above Corridor 269 Fuel Bldg. El. 77'
SD = Shutdown Only*
UG = Underground
YARD = Yard Surface Pipe
XCOM = Common Line

*An estimate of the accessibility of the piping has been made by our architect/engineer. Accessibility will be re-evaluated by our field inspection group taking actual plant conditions into consideration. We do not plan to inspect any areas over 100mr/hr.

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AUXILIARY FEED WATER SYSTEM

System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
AFW	EBE-3-2	12	2	AB	MSSS		60	El. 69' & El. 59'
	DBE-3-1	12	2	AB	MSSS		60	El. 59'
	DBD-5-1	16	3B	B	MSSS		60	El. 57'
	DBD-5-1	16	3B	B	90		60	
	DBD-5-2	15	3B	A	90			
	DBD-5-2	15	3B	A	MSSS			El. 59'
	DBD-5-2	15	3B	A	91			
	HBD-43-1	13	3B	AB	90		60	
	HBD-43-1	13	3B	AB	91		60	

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PROCESS STEAM SYSTEM

System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
PSS	GBD-18-4	11	4B	XCOM	222		60	SC II line
	GBD-18-4	11	4B	XCOM	23		60	
	GBD-18-4	11	4B	XCOM	71		60	
	GBD-18-4	11	4B	XCOM	70		60	
	GBD-18-4	11	4B	XCOM	68		60	
	GBD-18-4	11	4B	XCOM	113		60	
	GBD-18-4	11	4B	XCOM				

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CONTAINMENT PENETRATION

System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CRWS	HCB-4-1	10	2	XCOM	169		60	
	HCB-4-1	10	2	XCOM	359	SD		Area 4-North (P-17)
DRWS	HCB-16-1	4	2	XCOM	170		60	
	HCB-16-1	4	2	XCOM	359	SD		Area 4-North (P-13)
DWS	HCB-3-1	3	2		219		60	
	HCB-3-1	3	2	XCOM	380	SD		Area 4 - North (P-58)
CWC	HBE-10-1	5	2	XCOM	189a		60	CWC Chilled Water Containment
	HBE-10-1	5	2	XCOM	368	SD		Area 4 - North (P-57-2)
	HBE-10-1	5	2	XCOM	380	SD		
	HBE-10-1	5	2	XCOM	219		60	
	HBE-11-1	5	?	XCOM	368	SD		(P-57-2)
	HBE-11-1		2	XCOM	189a		60	
	HBE-11-1		2	XCOM	380	SD		
	HBE-11-1		2	XCOM	189b		60	
	HBE-11-1		2	XCOM	219		60	

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
SFPCS	HCC-39-1	09	4A	XCOM	380	SD		SC II Continuing ISO's
	HCC-39-1	09	4A	XCOM	EMB	IA		SC II Continuing ISO's
	HCC-39-1	09	4A	XCOM	219		60	SC II Continuing ISO's
	HCC-48-1	14	4A	XCOM	240	SD		SC II
	HCC-48-1	14	4A	XCOM	219		60	SC II
	HCC-48-1	14	4A	XCOM	185		60	SC II
	HCC-48-1	14	4A	XCOM	195		60	SC II
	HCC-48-1	14	4A	XCOM	189a		60	SC II
	HCC-48-1	14	4A	XCOM	189b		60	SC II
	HCC-48-1	14	4A	XCOM	147	IA		SC II
	HCC-48-1	14	4A	XCOM	163a		60	SC II
	HCC-48-1	14	4A	XCOM	163b		60	SC II
	HCC-48-1	14	4A	XCOM	161		60	SC II
	HCC-48-2	12	3A	XCOM	161		60	
	HCC-48-2	12	3A	XCOM	163a		60	
	HCC-48-2	12	3A	XCOM	147	IA		
	HCC-48-2	12	3A	XCOM	170		60	
	HCC-48-2	12	3A	XCOM	169		60	
	HCC-48-2	12	3A	XCOM	168		60	
	HCC-48-2	12	3A	XCOM	146	IA		
	HCC-48-2	12	3A	XCOM	123	HR		In containment wall between Rm 372 and 369
	HCC-39-2	7	4A	XCOM	219		60	SC II
	HCC-39-2	7	4A	XCOM	217	HR		SC II
	HCC-39-2	7	4A	XCOM	272		60	SC II
	HCC-39-2	7	4A	XCOM	239		60	SC II

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
SFPCS	HCC-39-2	7	4A	XCOM	EMB	IA		SC II
	HCC-39-2	7	4A	XCOM	241	IA		SC II
	HCC-48-3	10	3A	XCOM	372	SD		Area 4 North-South
	HCC-48-4	7	3A	XCOM	161		60	
	HCC-48-4	7	3A	XCOM	162		60	
	HCC-48-4	7	3A	XCOM	163a		60	
	HCC-49-1	17	4A	XCOM	219		60	SC II
	HCC-49-1	17	4A	XCOM	185		60	SC II
	HCC-49-1	17	4A	XCOM	195		60	SC II
	HCC-49-1	17	4A	XCOM	240		60	SC II
	HCC-49-1	17	4A	XCOM	255	SD		SC II
	HCC-49-1	17	4A	XCOM	256		60	SC II
	HCC-49-1	17	4A	XCOM	250		60	SC II
	HCC-49-2	10	4A	XCOM	161		60	SC II
	HCC-49-2	10	4A	XCOM	163a		60	SC II
	HCC-49-2	10	4A	XCOM	163b		60	SC II
	HCC-49-2	10	4A	XCOM	146	IA		SC II
	HCC-49-2	10	4A	XCOM	195		60	SC II
	HCC-49-2	10	4A	XCOM	189a		60	SC II
	HCC-49-3	10	4A	XCOM	195		60	SC II
HCC-49-3	10	4A	XCOM	255	SD		SC II	
HCC-49-3	10	4A	XCOM	256		60	SC II	
HCC-49-3	10	4A	XCOM	250		60	Area 4 North-South	
HCC-50-1	11	4A	XCOM	162		60	SC II Continuation ISO	
HCC-50-1	11	4A	XCOM	161		60	SC II Continuation ISO	

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments	
SFPCS	HCC-50-1	11	4A	XCOM	166	IA		SC II Continuation ISO	
	HCC-50-1	11	4A	XCOM	193	HR		SC II Continuation ISO	
	HCC-50-1	11	4A	XCOM	195		60	SC II Continuation ISO	
	HCC-50-1	11	4A	XCOM	189a		60	SC II Continuation ISO	
	HCC-50-1	11	4A	XCOM	146	IA		SC II Continuation ISO	
	GCB-7-1	10	2	XCOM	219		60		
	GCB-7-1	10	2	XCOM	185		60		
	GCB-7-1	10	2	XCOM	195		60		
	GCB-7-1	10	2	XCOM	189a		60		
	GCB-7-1	10	2	XCOM	146	IA			
	GCB-7-1	10	2	XCOM		HR			
	GCB-7-1	10	2	XCOM	PWI	IA			
	GCB-7-1	10	2	XCOM	122	HR			
	HCB-11-1	8	2	XCOM	380	SD			Area 4 North (P-25)
	HCB-11-1	8	2	XCOM	219		60		
	HCB-12-1	7	2	XCOM	380	SD			Area 4 North (P-55)
	HCB-12-1	7	2	XCOM	219		60		
	HCB-10-1	8	2	XCOM	168		60		
	HCB-10-1	8	2	XCOM	359	SD			Area 4 North (P-26)

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
FPCS	HCC-39-2	7	4A	XCOM	EMB	IA		SC II
	HCC-39-2	7	4A	XCOM	241	IA		SC II
	HCC-39-3	6	4A	XCOM	217	IA		SC II
	HCC-39-3	6	4A	XCOM	270	IA		SC II
	HCC-39-3	6	4A	XCOM	266	IA		SC II
	HCC-39-3	6	4A	XCOM	265	IA		SC II, Continuation ISO CS-151-1-2-3
	HCC-39-3	6	4A	XCOM	PW3	IA		SC II Pipe Way Above Rm 269
	HCC-39-3	6	4A	XCOM	214	IA		SC II
	HCC-39-3	6	4A	XCOM	213	IA		SC II
	HCC-39-3	6	4A	XCOM	193			SC II
	HCC-39-3	6	4A	XCOM	147	IA		SC II
	HCC-39-3	5	4A	XCOM	145		60	SC II
	HCC-39-3	6	4A	XCOM	148		60	SC II, Continuation ISO SI-151R-10-9
	HCC-39-3	6	4A	XCOM	212E	IA		SC II
	HCC-502	2	3A	XCOM	161		60	

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CVCS	CS-2501R-5-2	8	2	A	153		60	
	CS-2501R-5-2	8	2	B	156			
	CS-2501R-5-2	8	2	XCOM	158		60	
	CS-2501R-5-3	13	2	XCOM	144		60	
	CS-2501R-5-3	13	2	XCOM	158		60	
	CS-2501R-5-3	13	2	XCOM	145		60	
	CS-2501R-5-4	6	2	XCOM	146	IA		
	CS-2501R-5-4	6	2	XCOM	169		60	
	CS-2501R-5-4	6	2	XCOM	163		60	
	CS-2501R-5-4	6	2	XCOM	185		60	
	CS-2501R-5-5	10	2	XCOM	185		60	
	CS-2501R-5-5	10	2	XCOM	368	SD		
	CS-2501R-5-9	4	2	XCOM	156		60	
	CS-2501R-5-9	4	2	XCOM	153		60	
	CS-2501R-28-1	8	2	A	153		60	
	CS-2501R-28-1	8	2	B	156			
	CS-2501R-28-1	8	2	XCOM	153		60	
	CS-2501R-28-1	8	2	XCOM	158		60	
	CS-2501R-28-1	8	2	XCOM	144		60	
	CS-2501R-28-2	10	2	XCOM	214	IA		
	CS-2501R-28-2	10	2	XCOM	193	HR		
	CS-2501R-28-2	10	2	XCOM	166	IA		Branch of Pipe
	CS-2501R-28-2	10	2	XCOM	158		60	Branch of Pipe
CS-2501R-28-2	10	2	XCOM	189B		60		
CS-2501R-28-2	10	2	XCOM	189A		60		
CS-2501R-28-2	10	2	XCOM	185		60		
CS-2501R-28-2	10	2	XCOM	212N		60		

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CVCS	CS-2501R-28-2	10	2	XCOM	207		60	
	CS-601R-4-1	4	2	XCOM	192	SD		
	CS-151R-5-1	14	2	XCOM	156		60	
	CS-151R-5-1	14	2	XCOM	153		60	
	CS-151R-5-1	14	2	XCOM	151	IA		
	CS-151R-5-1	14	2	XCOM	127	HR		
	CS-151R-5-2	4	3A	XCOM	153		60	
	CS-151R-5-2	4	3A	XCOM	151	IA		
	CS-151R-5-3	14	2	XCOM	144		60	
	CS-151R-5-3	14	2	XCOM	158		60	
	CS-151R-5-3	14	2	XCOM	145		60	
	CS-151R-5-3	14	2	XCOM	146	IA		
	CS-151R-5-3	14	2	XCOM	169		60	
	CS-151R-5-3	14	2	XCOM	167		60	
	CS-151R-5-3	14	2	XCOM	188	SD		
	CS-151R-5-3	14	2	XCOM	153		60	Branch from Main Pipe
	CS-151R-6-1	12	2	XCOM	255	SD		3 Pipes
	CS-151R-6-1	12	2	XCOM	256		60	
	CS-151R-6-1	12	2	XCOM	188	SD		
	CS-151R-6-1	12	2	XCOM	189A		60	1 of 3 Pipes
	CS-151R-6-1	12	2	XCOM	167		60	1 of 3 Pipes
	CS-151R-6-2	10	2	XCOM	185		60	
	CS-151R-6-2	10	2	XCOM	368		60	
	CS-151R-6-3	10	2	XCOM	185		60	
	CS-151R-6-3	10	2	XCOM	195		60	
	CS-151R-6-3	10	2	XCOM	189A		60	

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Ins. Sch.	Comments
CVCS	CS-151R-6-3	10	2	XCOM	189B		60	
	CS-151R-6-3	10	2	XCOM	193		60	
	CS-151R-6-3	10	2	XCOM	213		60	
	CS-151R-6-3	10	2	XCOM	212M		60	
	CS-151R-6-3	10	2	XCOM	208		60	
	CS-151R-9-1	10	2	XCOM	191	SD		
	CS-151R-9-1	10	2	XCOM	188	SD		
	CS-151R-9-2	11	2	XCOM	214	IA		2 Pipes
	CS-151R-9-2	11	2	XCOM	212L	IA		
	CS-151R-9-2	11	2	XCOM	208		60	
	CS-151R-9-3	9	2	XCOM	214	IA		
	CS-151R-9-3	9	2	XCOM	193	HR		
	CS-151R-9-3	9	2	XCOM	192	SD		
	CS-151R-9-3	9	2	XCOM	191	SD		
	CS-151R-9-3	9	2	XCOM	188	SD		
	CS-151R-9-4	8	3A	XCOM	214	IA		
	CS-151R-9-4	8	3A	XCOM	212L	IA		
	CS-151R-9-4	8	3A	XCOM	208		60	
	CS-151R-8-1	7	4A	AB	260		60	
	CS-151R-25-1	8	2	XCOM	188	SD		
	CS-151R-25-1	8	2	XCOM	216	HR		
	CS-151R-27-1	5	4A	A	215J	IA		
	CS-151R-27-1	5	4A	B	215K	IA		
	CS-151R-27-1	5	4A	XCOM	215I	IA		
	CS-151R-27-1	5	4A	XCOM	211D	HR		
	CS-151R-30-1	4	3A	A	215J	IA		

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CVCS	CS-151R-30-1	4	3A	B	215K	IA		
	CS-151R-30-1	4	3A	XCOM	215I	IA		
	CS-151R-30-1	4	3A	XCOM	214	IA		
	CS-151R-12-1	8	3A	C	231	IA		
	CS-151R-12-1	8	3A	BC	232	IA		
	CS-151R-12-1	8	3A	ABC	233	IA		3 Pipes
	CS-151R-12-1	8	3A	ABC	236		60	
	CS-151R-12-2	11	3A	XCOM	265		60	
	CS-151R-12-2	11	3A	XCOM	232	IA		
	CS-151R-12-2	11	3A	XCOM	233	IA		
	CS-151R-12-2	11	3A	XCOM	236		60	
	CS-151R-12-3	11	3A	A	233	IA		
	CS-151R-12-3	11	3A	C	231	IA		
	CS-151R-12-3	11	3A	ABC	232	IA		3 Pipes
	CS-151R-12-3	11	3A	ABC	265		60	
	CS-151R-12-4	9	3A	A	233	IA		
	CS-151R-12-4	9	3A	C	231	IA		
	CS-151R-12-4	9	3A	ABC	232	IA		3 Pipes
	CS-151R-12-4	9	3A	ABC	265		60	
	CS-151R-12-5	8	3A	XCOM	265		60	
	CS-151R-12-5	8	3A	XCOM	214	IA		Splits into 2 branches
	CS-151R-12-5	8	3A	XCOM	212L	IA		
	CS-151R-12-5	8	3A	XCOM	208		60	Same branch as 212L
	CS-151R-12-5	8	3A	XCOM	212I	IA		Diff branch from 212L
	CS-151R-12-5	8	3A	XCOM	210		60	Same branch as 212I

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System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CVCS	CS-151R-14-1	7	3A	C	215H	IA	60	3 Pipes
	CS-151R-14-1	7	3A	B	215G	IA		
	CS-151R-14-1	7	3A	A	215F	IA		
	CS-151R-14-1	7	3A	ABC	211C			
	CS-151R-14-2	5	3A	A	215F	IA		
	CS-151R-14-2	5	3A	B	215G	IA		
	CS-151R-14-2	5	3A	C	215H	IA	3 Pipes	
	CS-151R-14-2	5	3A	ABC	214	IA		
	CS-151R-26-1	12	3A	XCOM	216	HR		
	CS-151R-26-1	12	3A	XCOM	188	SD		
	CS-151R-26-1	12	3A	XCOM	191	SD		
	CS-151R-26-1	12	3A	XCOM	193	HR		
	CS-151R-26-1	12	3A	XCOM	214	IA	60	Splits into 3 branches
	CS-151R-26-1	12	3A	ABC	265			
	HCC-23-2	7	4A	XCOM	265			
	HCC-23-2	7	4A	XCOM	214	IA	60	Continuation ISO
	HCC-27-1	6	4A	A	215F	IA		
	HCC-27-1	6	4A	B	215G	IA		
HCC-27-1	6	4A	C	215H	IA		Continuation ISO	

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SW	HFD-1-1	14	3B	AB	234		60	Floor PEN to HX
	HFD-1-1	14	3B	AB	UG	IA		
	HFD-1-1	14	3B	AB	PIT		60	SW Strainer PIT
	HFD-1-2	9	3B	A	PIT		60	SW Strainer PIT
	HFD-1-2	9	3B	A	UG	IA		
	HFD-1-2	9	3B	A	394		60	Intake Structure
	K. 1-3	9	3B	B	394			Intake Structure
	HFD-1-3	9	3B	B	PIT			SW Strainer PIT
	HFD-1-3	9	3B	B	UG	IA		
	HFD-1-4	13	3B	AB	394		60	Intake Structure
	HFD-1-5	5	3B	AB	394		60	Intake Structure
	HFD-2-2	11	3B	B	234			
	HFD-2-2	11	3B	B	UG	IA		Floor PEN to HFD-6-1
	HFD-2-3	8	3B	B	UG	IA		
	HFD-2-3	8	3B	B	142			Wall PEN only
	HFD-2-4	14	3B	B	142			
	HFD-2-4	14	3B	BD	164			
	HFD-2-4	14	3B	B	144			
	HFD-2-5	10	3B	BD	164			
	HFD-2-5	10	3B	B	166	IA		
	HFD-2-6	9	3B	B	164			
	HFD-2-6	9	3B	B	166	IA		
	HFD-3-2	10	3B	A	234		60	
	HFD-3-2	10	3B	A	UG	IA		Floor PEN to HFD-6-1
	HFD-3-3	10	3B	A	142		60	Wall PEN only

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system	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SW	HFD-3-3	10	3B	A	UG	IA		From HFD-1-1 to Rm. 142
	HFD-3-4	11	3B	AC	164		60	
	HFD-3-4	11	3B	A	144		60	
	HFD-3-4	11	3B	A	142		60	
	HFD-3-5	10	3B	AC	164		60	
	HFD-3-5	10	3B	A	166	IA		
	HFD-3-6	6	3B	A	164		60	
	HFD-3-6	6	3B	A	166	IA		
	HFD-4-1	10	3B	A	157		60	Wall PEN only to HFD-4-4
	HFD-4-1	10	3B	A	UG	IA		
	HFD-4-1	10	3B	A	85		60	Floor PEN to HFD-4-6
	HFD-4-2	6	3B	A	UG	IA		
	HFD-4-3	4	3B	A	UG	IA		
	HFD-4-3	4	3B	A	DS		60	Dilution Structure PEN only
	HFD-4-4	8	3B	A	164		60	Floor PEN to HFD-3-5
	HFD-4-4	8	3B	A	156		60	
	HFD-4-4	8	3B	A	157		60	
	HFD-4-5	8	3B	A	85		60	
	HFD-4-6	8	3B	A	85		60	
	HFD-4-7	4	3B	A	85		60	
	HFD-4-8	5	3B	B	86			
	HFD-4-10	9	3B	A	85		60	Floor PEN to HFD-4-5
	HFD-4-10	9	3B	A	UG	IA		
HFD-5-1	10	3B	B	86				
HFD-5-1	10	3B	B	UG	IA			

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SW	HFD-5-2	7	3B	B	UG	IA		Dilution Structure PEN only
	HFD-5-3	4	3B	B	DS			
	HFD-5-3	4	3B	B	UG	IA		Floor PEN to HFD-2-5
	HFD-5-4	10	3B	B	164			
	HFD-5-4	10	3B	B	156			Floor PEN to HFD-4-6
	HFD-5-4	10	3B	B	157			
	HFD-5-4	10	3B	B	158			Floor PEN to HFD-4-6
	HFD-5-5	8	3B	B	86			
	HFD-5-6	9	3B	B	86			Floor PEN to HFD-4-6
	HFD-5-10	13	3B	B	86			
	HFD-5-10	13	3B	B	UG	IA		Wall PEN to HFD-7-4
	HFD-5-10	13	3B	B	157			
	HFD-6-1	15	3B	AB	234		60	Floor PEN to HX
	HFD-6-1	15	3B	AB	DS		60	Dilution Structure PEN only
	HFD-6-1	15	3B	AB	UG	IA		Wall PEN to HFD-7-4
	HFD-7-2	11	3B	A	157		60	
	HFD-7-2	11	3B	A	91		60	From Wall PEN
	HFD-7-2	11	3B	A	UG	IA		Wall PEN to HFD-7-4
	HFD-7-3	13	3B	B	157			
	HFD-7-3	13	3B	B	90			From Floor PEN
	HFD-7-3	13	3B	B	UG	IA		Floor PENS
	HFD-7-4	11	3B	AB	164		60	
	HFD-7-4	11	3B	AB	156		60	
	HFD-7-4	11	3B	AB	157		60	
HFD-7-4	11	3B	AB	158		60		

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SW	HFD-8-1	6	3B	AB	234		60	
	HFD-8-1	6	3B	AB	UG	IA		Floor PENS to HFD-1-1
	HFD-8-2	7	3B	AB	228		60	
	HFD-8-2	7	3B	AB	250		60	
	HFD-8-2	7	3B	AB	271		60	
	HFD-8-3	4	3B	AB	234		60	
	HFD-8-3	4	3B	AB	164		60	
	HBD-46-1	7	3B	B	90			
	HBD-46-1	7	3B	B	UG	IA		
	HBD-46-3	9	3B	B	90			
	HCD-12-1	10	3B	AB	271		60	
	HCD-12-1	10	3B	AB	240	IA		Fuel Pool
	HBD-52-3	10	3B	AB	DS		60	Dilution Structure PENS
	HBD-52-3	10	3B	AB	PIT		60	SW Structure PIT
	HBD-52-3	10	3B	AB	UG	IA		
	HBD-52-5	9	3B	AB	394		60	Intake Structure
	HBD-52-5	9	3B	AB	UG	IA		
	HBD-52-5	9	3B	AB	Yard		60	Emergency Hose Con Area 16
	HKD-1-1	12	3B	B	214			
	HKD-1-1	12	3B	B	209			
	HKD-1-1	12	3B	B	45			
	HKD-1-1	12	3B	B	213			
	HKD-1-1	12	3B	B	194			
	HKD-1-1	12	3B	B	PC	IA		Pipe Chase Area 3 El. 25'
	HKD-1-1	12	3B	B	131			
HKD-1-1	12	3B	B	137				
HKD-1-1	12	3B	B	127				
HKD-1-1	12	3B	B	130				
HKD-1-1	12	3B	B	166	IA			

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CONTAINMENT SPRAY

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CS	GCB-5-1	9	2	A	170		60	
	GCB-5-1	9	2	B	169			
	GCB-5-1	9	2	AB	356			Embedded Under Rm. 359
	GCB-9-1	11	2	A	129		60	
	GCB-9-1	11	2	A	PW2		60	
	GCB-9-1	11	2	A	125		60	
	GCB-9-1	11	2	A	147		60	
	GCB-9-1	11	2	A	170		60	
	GCB-9-2	14	2	B	130			
	GCB-9-2	14	2	B	PW1			
	GCB-9-2	14	2	B	123			
	GCB-9-2	14	2	B	146			
	GCB-9-2	14	2	B	169			
	GCB-9-2	14	2	B	168			
	GCB-9-2	14	2	B	185			
	GCB-9-2	14	2	B	219			
	GCB-9-3	11	2	A	129		60	
	GCB-9-3	11	2	A	130		60	
	GCB-9-3	11	2	A	PW1		60	
	GCB-9-3	11	2	A	PW2		60	
	GCB-9-3	11	2	A	122		60	
	GCB-9-3	11	2	A	148		60	
	GCB-9-4	5	2	AB	150		60	
	HCB-9-1	9	2	A	170		60	
	HCB-9-1	9	2	A	359			Area 4 - North
	HCB-9-2	7	2	B	219			
	HCB-9-2	7	2	B	368			

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CS	HCB-9-5	7	2	A	359			Area 4 - North
	HCB-9-5	7	2	A	388			
	HCB-9-12	5	2	B	380			
	HCB-9-12	5	2	B	387			
	HCB-14-1	11	2	A	129		60	
	HCB-14-1	11	2	A	PW2		60	
	HCB-14-1	11	2	A	125		60	
	HCB-14-1	11	2	A	147		60	
	HCB-14-1	11	2	A	170		60	
	HCB-14-2	11	2	B	13			
	HCB-14-2	11	2	B	PW1			
	HCB-14-2	11	2	B	123			
	HCB-14-2	11	2	B	146			
	HCB-14-2	11	2	B	169			
	HCB-14-3	6	2	A	129		60	
HCB-14-3	6	2	B	130				

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RESIDUAL HEAT REMOVAL SYSTEM

RHR #1

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp Sch.	Comments
RHR	RH-601R-5-1	12	2	XCOM	169		60	
	RH-601R-5-1	12	2	XCOM	146		60	
	RH-601R-5-1	12	2	A	125		60	
	RH-601R-5-1	12	2	B	123			
	RH-601R-5-1	12	2	XCOM	359			Area 4-North(In Containment)
	RH-601R-5-2	7	2	A	125		60	
	RH-601R-5-2	7	2	B	123			
	RH-601R-6-1	7	2	A	127		60	
	RH-601R-6-1	7	2	B	122			
	RH-601R-6-2	13	2	A	125		60	
	RH-601R-6-2	13	2	A	127		60	
	RH-601R-6-2	13	2	A	PW2		60	
	RH-601R-6-4	12	2	B	PW1			
	RH-601R-6-4	12	2	B	123			
	RH-601R-6-4	12	2	B	122			
	RH-601R-6-5	8	2	A	125		60	
	RH-601R-6-5	8	2	A	127		60	
	RH-601R-6-5	8	2	B	123			
	RH-601R-6-5	8	2	B	122			
	RH-601R-6-6	4	2	A	127		60	
	RH-601R-6-6	4	2	B	122			
	RH-601R-7-1	16	2	A	127		60	
	RH-601R-7-1	16	2	A	125		60	
	RH-601R-7-1	16	2	XCOM	123		60	
	RH-601R-7-1	16	2	B	122			
	RH-601R-7-1	16	2	XCOM	146		60	
	RH-601R-7-1	16	2	XCOM	169		60	
	RH-601R-7-1	16	2	XCOM	168		60	

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RESIDUAL HEAT REMOVAL SYSTEM

RHR #2

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
RHR	RH-2501R-13-1	15	1	XCOM	359			Area 4 - North In Containment El. 55'1"
	RH-2501R-13-1	15	1	XCOM	360			Area 5 - North In Containment El. 55'10"
	RH-2501R-19-1	6	1	B	359			Area 4 - North In Containment El. 59'6"
	RH-2501R-19-2	13	2	XCOM	359			Area 4 - North In Containment El. 55'4"
	RH-2501R-19-2	13	2	XCOM	169		60	
	RH-2501R-19-3	5	1	A	359			Area 4 - North In Containment El. 59'6"
	SI-601R-9-1	14	2	A	127		60	
	SI-601R-9-1	14	2	A	PW2		60	
	SI-601R-9-1	14	2	B	122			
	SI-601R-9-1	14	2	B	PW1			
	SI-601R-9-1	14	2	A	125		60	
	SI-601R-9-1	14	2	B	123			
	SI-601R-9-1	14	2	B	146			
	SI-601R-9-1	14	2	A	147		60	
	SI-601R-9-1	14	2	B	169			
	SI-601R-9-1	14	2	A	170		60	
	SI-601R-5-1	7	2	XCOM	123		60	
	SI-601R-5-1	7	2	XCOM	148		60	
	SI-601R-5-2	4	2	XCOM	148		60	
	SI-2501R-31-1	13	2	XCOM	169		60	
	SI-2501R-31-1	13	2	XCOM	359			Area 4 - North El. 55'

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REACTOR COOLANT SYSTEM

#1

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
RC	RC-151R-1-1	10	4A	XCOM	380			
	RC-151R-1-1	10	4A	XCOM	368			
	RC-151R-1-1	10	4A	XCOM	359			Area 4 South El. 62
	RC-151R-1-2	11	2	XCOM	219		60	
	RC-151R-1-2	11	2	XCOM	380			El. 79 (P10)
	RC-151R-19-1	08	2	XCOM	168		60	
	RC-151R-19-1	08	2	XCOM	359			Area 4 North (P20)
	RC-151R-19-2	05	4A	XCOM	359			Area 4 Continuation ISO
	RC-601R-2-1	11	4A	XCOM	373			Area 4 Continuation ISO
	RC-2501R-1-1	06	1	A	360			
	RC-2501R-1-2	05	1	B	360			
	RC-2501R-1-3	05	1	C	360			
	RC-2501R-1-4	04	1	D	360			
	RC-2501R-1-10	04	1	XCOM	360			
	RC-2501R-2-1	01	1	C	360			
	RC-2501R-2-2	04	1	A	360			
	RC-2501R-2-3	01	1	B	360			
	RC-2501R-2-4	01	1	D	360			
	RC-2501R-4-1	12	1	B	360			
	RC-2501R-4-1	12	1	B	373			
	RC-2501R-4-2	11	1	C	360			
	RC-2501R-4-2	11	1	C	359			Area 4 & 5 South
	RC-2501R-5-6	06	1	A	360			

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REACTOR COOLANT SYSTEM

#2

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
RC	RC-2501R-6-1	03	1	D	360			Continuation ISO
	RC-2501R-8-1	05	1	XCOM	373			
	RC-2501R-8-2	05	4A	XCOM	373			
	RC-2501R-10-1	09	1	C	360			
	RC-2501R-10-1	09	1	C	359			
	RC-2501R-12-1	07	1	XCOM	373			
	RC-2501R-13-1	11	1	D	360			
	RC-2501R-17-1	09	1	A	360			
	RC-2501R-17-2	09	1	B	360			
	RC-2501R-17-3	10	1	C	360			
	RC-2501R-17-4	11	1	D	360			
	RC-2501R-20-1	04	1	XCOM	360			
	RC-2501R-20-1	04	1	XCOM	373			

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MAIN STEAM

System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
MS	EBB-1-1	28	2	AB	360			Area 4
	EBB-1-1	28	2	AB	381			Area 4 & 5 El. 93'
	EBB-1-1	28	2	AB	MSSS		60	El. 69' & 93'
	EBB-1-2	26	2	CD	360			Area 5 El. 93'
	EBB-1-2	26	2	CD	388			Area 5
	EBB-1-2	26	2	CD	MSSS		60	El. 69' & 93'
	EBB-1-2	26	2	CD	389			Area 5 South El. 93'
	EBD-7-1	20	3B	ABCD	MSSS		60	El. 69' down to El. 57'
	EBD-7-1	20	3B	XCOM	90		60	
	EBD-7-1	20	3B	XCOM	91		60	
	EBD-1-1	8	4B	ABCD	103		60	Continuation ISO
	EBE-1-1	13	2	ABCD	MSSS		60	El. 69'
	EBE-1-3	9	2	ABCD	MSSS		60	El. 93'
	EBE-1-6	7	2	ABCD	MSSS		60	El. 63'
	EBE-1-4	5	2	ABCD	MSSS		60	El. 93'
	EBE-1-5	9	2	ABCD	MSSS		60	El. 63'
	HBD-73-1	2	4B	ABCD	MSSS		60	El. 93'
	HBD-85-1	4	4B	B	MSSS		60	El. 93' Continuation ISO
	HBD-85-2	3	4B	C	MSSS		60	El. 93' Continuation ISO
	HBD-85-3	4	4B	D	MSSS		60	El. 93' Continuation ISO
	HBD-85-4	3	4B	A	MSSS		60	El. 93' Continuation ISO

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COMPONENT COOLING WATER SYSTEM

system	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CCW	HBD-21-1	13	3B	B	228			
	HBD-21-1	13	3B	B	234			
	HBD-21-1	13	3B	B	161			
	HBD-22-2	14	3B	A	228		60	
	HBD-22-2	14	3B	A	234		60	
	HBD-22-2	14	3B	A	161		60	
	HBD-22-3	7	3B	AB	219		60	
	HBD-22-3	7	3B	AB	189a		60	
	HBD-22-3	7	3B	AB	195		60	
	HBD-22-3	7	3B	AB	225		60	
	HBD-22-4	4	3B	AB	225		60	
	HBD-22-4	4	3B	AB	228		60	
	HBD-22-4	4	3B	AB	234		60	
	HBD-27-1	12	3B	A	219		60	
	HBD-27-1	12	3B	A	185		60	
	HBD-27-1	12	3B	A	95		60	
	HBD-27-1	12	3B	A	168		60	
	HBD-27-1	12	3B	A	228		60	
	HBD-27-1	12	3B	A	234		60	
	HBD-27-2	9	3B	B	168			
HBD-27-2	9	3B	B	228				
HBD-27-2	9	3B	B	234				
HBD-27-3	14	3B	B	228				
HBD-27-3	14	3B	B	234				
HBD-27-4	13	3B	A	228		60		

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CCW	HBD-27-4	13	3B	A	234		60	
	HBD-28-1	17	3B	B	122			
	HBD-28-1	17	3B	B	148			
	HBD-28-1	17	3B	B	158			
	HBD-28-1	17	3B	B	166			
	HBD-28-1	17	3B	B	234			
	HBD-28-2	11	3B	B	122			
	HBD-28-2	11	3B	B	148			
	HBD-28-2	11	3B	B	158			
	HBD-28-2	11	3B	B	166			
	HBD-28-2	11	3B	B	234			
	HBD-28-3	9	3B	B	130			
	HBD-28-3	9	3B	B	143			
	HBD-28-3	9	3B	B	158			
	HBD-28-4	4	3B	B	122			
	HBD-30-1	14	3B	A	127		60	
	HBD-30-1	14	3B	A	151		60	
	HBD-30-1	14	3B	A	149		60	
	HBD-30-1	14	3B	A	145		60	
	HBD-30-1	14	3B	A	158		60	
	HBD-30-1	14	3B	A	166		60	
	HBD-30-2	10	3B	A	151		60	
	HBD-30-2	10	3B	A	158		60	
	HBD-30-2	10	3B	A	166		60	
	HBD-30-2	10	3B	A	234		60	

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CCW	HBD-30-3	7	3B	A	129		60	
	HBD-30-3	7	3B	A	153		60	
	HBD-30-3	7	3B	A	158		60	
	HBD-30-3	7	3B	A	143		60	
	HBD-30-4	12	3B	A	143		60	
	HBD-30-4	12	3B	A	144		60	
	HBD-30-5	4	3B	A	151		60	
	HBD-31-1	13	3B	A	380			In Containment
	HBD-31-1	13	3B	A	387			In Containment
	HBD-31-2	10	3B	A	219		60	
	HBD-31-2	10	3B	A	195		60	
	HBD-31-2	10	3B	A	168		60	
	HBD-31-2	10	3B	A	228		60	
	HBD-31-3	8	3B	A	387			In Containment
	HBD-31-3	8	3B	A	388			In Containment
	HBD-31-4	8	3B	A	387			In Containment
	HBD-31-4	8	3B	A	388			In Containment
	HBD-31-5	7	3B	A	387			In Containment
	HBD-31-5	7	3B	A	388			In Containment
	HBD-31-6	9	3B	A	387			In Containment
	HBD-31-6	9	3B	A	388			In Containment
	HBD-31-7	5	3B	A	387			In Containment
	HBD-31-8	9	3B	A	387			In Containment
	HBD-31-9	7	3B	A	387			In Containment
	HBD-31-10	7	3B	A	387			In Containment

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CCW	HBD-31-11	10	3B	A	380			In Containment
	HBD-31-11	10	3B	A	368			In Containment
	HBD-31-12	8	3B	A	380			In Containment
	HBD-31-12	8	3B	A	387			In Containment
	HBD-31-13	11	3B	A	380			In Containment
	HBD-31-13	11	3B	A	368			In Containment
	HBD-31-14	6	3B	A	380			Area 4 North
	HBD-31-15	3	3B	A	387			Area 5 North
	HBD-32-1	11	3B	B	359			Area 4, El. 45'
	HBD-32-2	12	3B	B	168			
	HBD-32-2	12	3B	B	228			
	HBD-32-3	12	3B	B	359			Area 4 North
	HBD-32-3	12	3B	B	374			Area 4 South
	HBD-32-4	7	3B	B	374			In Containment
	HBD-32-5	9	3B	B	374			In Containment
	HBD-32-5	9	3B	B	387			In Containment
	HBD-32-6	10	3B	B	374			In Containment
	HBD-32-6	10	3B	B	387			In Containment
	HBD-32-7	9	3B	B	374			In Containment
	HBD-32-7	9	3B	B	387			In Containment
	HBD-32-8	7	3B	B	374			In Containment
	HBD-32-8	7	3B	B	387			In Containment
	HBD-32-9	9	3B	B	374			In Containment
	HBD-32-9	9	3B	B	387			In Containment
	HBD-32-9	9	3B	B	388			In Containment

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System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
CCW	HBD-32-10	8	3B	B	374			In Containment
	HBD-32-10	8	3B	B	387			In Containment
	HBD-32-10	8	3B	B	388			In Containment
	HBD-32-11	11	3B	B	374			In Containment
	HBD-32-11	11	3B	B	387			In Containment
	HBD-21-12	8	3B	B	374			In Containment
	HBD-21-12	8	3B	B	387			In Containment
	HBD-32-13	15	3B	B	359			Area 4 South
	HBD-32-13	15	3B	B	374			In Containment
	HBD-32-13	15	3B	B	369			In Containment
	HBD-32-14	11	3B	B	359			In Containment
	HBD-32-14	11	3B	B	374			In Containment
	HBD-32-14	11	3B	B	369			In Containment
	HBD-32-15	9	3B	B	374			In Containment
	HBD-32-15	9	3B	B	369			In Containment
	HBD-32-16	10	3B	B	374			In Containment
	HBD-32-16	10	3B	B	369			In Containment
	HBE-2-1	8	2	A	219		60	PEN #P-42
	HBE-3-1	5	2	A	219		60	PEN #P-43
	HBE-5-2	6	2	B	169			PEN #P-76
	HBE-5-2	6	2	B	168			
	HBE-7-1	7	2	B	170			PEN #P-74
	HLE-7-1	7	2	B	169			
	HBE-7-1	7	2	B	168			

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BF-18

System	Iso. No.	Rev.	Quality Group	Train	Room No.	Access	Insp. Sch.	Comments
CCW	HBD-34-2	12	4B	XCOM	234		60	Continuation ISO
	HBD-34-3	11	4B	XCOM	161		60	Continuation ISO
	HBD-33-1	11	3B	XCOM	192	SD		
	HBD-33-1	11	3B	XCOM	191	SD		
	HBD-33-1	11	3B	XCOM	190		60	
	HBD-33-1	11	3B	XCOM	254		60	
	HBD-33-1	11	3B	XCOM	255	SD		
	HBD-33-1	11	3B	XCOM	228		60	Branch of Pipe
	HBD-33-2	16	3B	XCOM	255	SD		
	HBD-33-2	16	3B	XCOM	190		60	
	HBD-33-2	16	3B	XCOM	191	SD		
	HBD-33-2	16	3B	XCOM	254		60	
	HBD-33-2	16	3B	XCOM	192	SD		
	HBD-33-2	16	3B	XCOM	228		60	Branch of Pipe

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RADIOACTIVE GASEOUS WASTE

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
GCH	HCC-62-1	15	3A	XCOM	204		60	
	HCC-62-1	15	3A	XCOM	201		60	
	HCC-62-1	15	3A	XCOM	197		60	
	HCC-62-1	15	3A	XCOM	194		60	
	HCC-62-1	15	3A	XCOM	193		60	
	HCC-62-1	15	3A	XCOM	189a		60	
	HCC-62-1	15	3A	XCOM	189b		60	
	HCC-62-1	15	3A	XCOM	185		60	
	HCC-62-1	15	3A	XCOM	195		60	
	HCC-62-1	15	3A	XCOM	368			
	HCC-63-1	7	3A	XCOM	204		60	
	HCC-65-1	6	3A	A	200		60	
	HCC-65-1	6	3A	B	119			
	HCC-65-1	6	3A	C	198			
	HCC-65-1	6	3A	D	197			
	HCC-65-1	6	3A	ABCD	206		60	
	HCC-65-2	5	3A	XCOM	226		60	
	HCB-15-1	7	2	XCOM	185		60	
	HCB-15-1	7	2	XCOM	368			
	VCH	HCC-2-1	8	4A	XCOM	226		60

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HYDROGEN VENT SYSTEM & CONTAINMENT PURGE SYSTEM

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
HV	HBD-91-1	6	3B	AB	216		60	
	HBD-91-1	6	3B	AB	219		60	
	HBD-91-1	6	3B	AB	185		60	
	HBD-91-1	6	3B	AB	168		60	
	HBD-91-2	7	3B	XCOM	225		60	
	HBD-91-2	7	3B	XCOM	358		60	
	HBD-91-3	4	3B	AB	216		60	
	HBD-91-3	4	3B	AB	226		60	
	HBD-91-4	4	3B	AB	226		60	
	HBD-91-4	4	3B	AB	221		60	
	HBD-14-1	6	2	AB	168		60	
	HBD-14-1	6	2	AB	359		60	Area 4 North
	CP	HBE-15-1	7	2	XCOM	225		60
HBD-15-1		7	2	XCOM	388		60	
HBD-15-1		7	2	XCOM	226		60	
HBD-15-1		7	2	XCOM	387		60	
HV	HBE-16-1	9	2	XCOM	358			
	HBE-16-1	9	2	XCOM	369			

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FEED WATER

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
FW	EBB-3-1	8	2	AB	360			Area 4 El. 93'
	EBB-3-1	8	2	AB	381			Area 4 & 5 El. 77'
	EBB-3-2	8	2	CD	360			Area 5 El. 93'
	EBB-3-2	8	2	D	388			Area 5 North El. 87'
	EBB-3-2	8	2	C	389			Area 5 South El. 87'
	EBD-6-2	9	4B	ABCD	103		60	Continuation ISO
	EBD-6-2	9	4B	ABCD	113		60	Continuation ISO
	EBE-3-1	17	2	ABCD	MSSS		60	El. 63'

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AUXILIARY STEAM

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
AS	HBD-50-2	9	3B	A	9-		60	
	HBD-50-2	9	3B	A	90		60	
	HBD-50-2	9	3B	A	183		60	El. 45' to 105'

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SAFETY INSPECTION SYSTEM

SIS #1

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp Sch.	Comments
SIS	SI-151R-10-1	11	3A	XCOM	UG	IA		Underground El. 41'3" Area 2
	SI-151R-10-1	11	3A	XCOM	150		60	
	SI-151R-10-1	11	3A	XCOM	148		60	
	SI-151R-10-1	11	3A	B	122			
	SI-151R-10-1	11	3A	B	130			
	SI-151R-10-1	11	3A	A	158		60	
	SI-151R-10-1	11	3A	A	149		60	
	SI-151R-10-1	11	3A	A	151		60	
	SI-151R-10-1	11	3A	A	127		60	
	SI-151R-10-2	14	2	AB	120		60	
	SI-151R-10-2	14	2	A	121		60	
	SI-151R-10-2	14	2	AB	PW1		60	
	SI-151R-10-2	14	2	AB	122		60	
	SI-151R-10-3	6	3A	XCOM	121		60	
	SI-151R-10-3	6	3A	XCOM	130		60	
	SI-151R-10-4	3	3A	XCOM	150		60	
	SI-151R-10-5	9	3A	XCOM	150		60	
	SI-151R-10-5	9	3A	XCOM	UG	IA		Underground El. 41'3" Area 2
	SI-151R-10-6	7	3A	XCOM	150		60	
	SI-151R-10-6	7	3A	XCOM	122		60	
	SI-151R-10-7	5	3A	XCOM	150		60	
	SI-151R-10-7	5	3A	XCOM	122		60	
	SI-151R-10-7	5	3A	XCOM	148		60	
	SI-151R-10-7	5	3A	XCOM	162		60	
	SI-151R-10-8	5	3A	XCOM	150		60	
	SI-151R-10-8	5	3A	XCOM	122		60	

POOR ORIGINAL

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SAFETY INJECTION SYSTEM

SIS #2

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SIS	SI-151R-18-2	11	2	XCOM	121		60	
	SI-151R-18-2	11	2	XCOM	PW1		60	
	SI-151R-18-2	11	2	XCOM	PW2		60	
	SI-151R-18-2	11	2	XCOM	127		60	
	SI-601R-1-1	5	2	A	359			Area 4-North(In Containment
	SI-601R-1-2	3	2	B	359			Area 4-South(In Containment
	SI-601R-1-4	4	2	D	359			Area 5-North(In Containment
	SI-601R-5-3	5	3A	B	123			
	SI-601R-5-3	5	3A	B	146			
	SI-601R-5-3	5	3A	B	169			
	SI-601R-5-3	5	3A	A	125		60	
	SI-601R-5-3	5	3A	A	147		60	
	SI-601R-5-3	5	3A	A	170		60	
	SI-1501R-1-1	15	2	A	PW1		60	
	SI-1501R-1-1	15	2	A	121		60	
	SI-1501R-1-1	15	2	A	123		60	
	SI-1501R-1-1	15	2	A	146		60	
	SI-1501R-1-1	15	2	A	169		60	
	SI-1501R-1-1	15	2	A	168		60	
	SI-1501R-1-1	15	2	XCOM	185		60	
	SI-1501R-1-4	9	2	B	120			
	SI-1501R-1-4	9	2	B	121			
	SI-1501R-1-4	9	2	B	PW1			
	SI-1501R-1-4	9	2	B	PW2			
	SI-1501R-1-4	9	2	B	125			
	SI-1501R-1-4	9	2	B	147			
	SI-1501R-1-4	9	2	B	170			
	SI-1501R-1-4	9	2	B	169			

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SAFETY INJECTION SYSTEM

SIS #3

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SIS	SI-1501R-1-4	9	2	B	168			
	SI-2501R-1-1	11	2	XCOM	185		60	
	SI-2501R-1-1	11	2	XCOM	168		60	
	SI-2501R-1-1	11	2	XCOM	359			Area 4 - North (P-45)
	SI-2501R-1-8	13	2	XCOM	185		60	
	SI-2501R-1-8	13	2	XCOM	359			Area 4 - North (P-63)
	SI-2501R-1-9	14	2	XCOM	359			Area 4 - North (P-70)
	SI-2501R-1-9	14	2	XCOM	185		60	
	SI-2501R-1-13	8	1	A	360			Area 4 - North El. 60'
	SI-2501R-1-13	8	1	C	360			Area 5 - South El. 60'
	SI-2501R-2-1	12	1	A	360			Area 4 - North El. 48'
	SI-2501R-2-1	12	1	A	359			Area 4 - North El. 48'
	SI-2501R-2-2	12	1	B	360			Area 4 - South El. 50'
	SI-2501R-2-2	12	1	B	359			Area 4 - South El. 50'
	SI-2501R-2-3	12	1	C	360			Area 5 - South El. 48'
	SI-2501R-2-3	12	1	C	359			Area 5 - South El. 48'
	SI-2501R-2-4	13	1	D	360			Area 5 - North El. 48'
	SI-2501R-2-4	13	1	D	359			Area 5 - North El. 48'
	SI-2501R-3-1	10	2	XCOM	141		60	
	SI-2501R-3-1	10	2	XCOM	147		60	
	SI-2501R-3-1	10	2	XCOM	145		60	
	SI-2501R-3-1	10	2	XCOM	158		60	
	SI-2501R-3-2	10	2	XCOM	141		60	
	SI-2501R-3-2	10	2	XCOM	147		60	
	SI-2501R-3-2	10	2	XCOM	170		60	
	SI-2501R-3-2	10	2	XCOM	168		60	

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SAFETY INJECTION SYSTEM

SIS #4

System	Iso. No.	Rev.	Quality Group	Train	Room #	Access	Insp. Sch.	Comments
SIS	SI-2501R-3-2	10	2	XCOM	169		60	
	SI-2501R-3-3	12	2	XCOM	359			Area 4 - North (P-44)
	SI-2501R-3-3	12	2	XCOM	168		60	
	SI-2501R-3-4	9	1	XCOM	359			Area 4 - North
	SI-2501R-19-1	14	1	B	360			Area 4 El. 55'
	SI-2501R-19-1	14	1	B	359			Area 4
	SI-2501R-19-2	14	1	D	360			Area 5 - North
	SI-2501R-19-2	14	1	D	359			Area 4 - North
	SI-2501R-31-2	9	2	XCOM	359			Area 4 - North (P-46)
	SI-2501R-31-3	9	1	A	359			Area 4 - North
	SI-2501R-31-4	15	1	B	359			Area 4 El. 46'
	SI-2501R-31-5	14	1	C	359			Area 4 - Area 5
	SI-2501R-31-6	16	1	D	359			Area 4 - Area 5

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