

# **CIPIMS/ITAAC Verification Demonstration Program**

## **Phase 1 Report**

**Revision 0  
November 19, 2004**

**Status of Phase 2 Open Items – July 20, 2005**

**Westinghouse Electric Company  
For NEI and EPRI**

# **CIPIMS/ITAAC Verification Demonstration**

## **Phase 1 Report**

NRC and the industry establish the following specific goals for the next phase.

1. Determine extent to which ITAAC and their precursor construction activities need to be identified in construction schedules.

Status: Done. An overall schedule will be made available by the project for NRC review. Applicant/licensee will address questions as necessary.

2. Establish process/criteria for determining documentation requirements for each ITAAC (ITAAC Determination Bases).

Status: In process discussions ongoing.

3. Determine format and content of licensee ITAAC determination letter to NRC.

Status: In process discussions ongoing.

4. Determine format and content of NRC ITAAC verification documentation, including 52.99 notices.

Status: In process discussions ongoing.

5. Determine required nature, extent and format for electronically available information to NRC, including construction schedule info, detailed design info and quality records (e.g., deviation reports).

Status: Project specific. Further discuss needed for to establish generic guidance.

6. Identify acceptable method(s) for licensee sharing of schedule information w/NRC to ensure compatibility with CIPIMS.

Status: Project specific. Part of item 1.

7. Jointly demonstrate the Construction Inspection and ITAAC Verification processes from order to "fuel load" with at least one current, real world example.

Status: In process discussions ongoing.

8. Determine when walkdowns are necessary to verify an ITAAC is met.

Status: In process discussions ongoing.

9. Clarify the meaning of "as-built" as used in ITAAC acceptance criteria.

Status: In process discussions ongoing. DCD Tier 1 defines as-built as: "**As-built** means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site."

## **CIPIMS/ITAAC Verification Demonstration Phase 1 Report**

10. Establish ground rules for handling various types of ITAAC acceptance criteria, including 1) the “report exists and concludes” type of found in numerous individual ITAAC; and 2) acceptance criteria that indicate no documentation requirements, e.g., “Each check valve changes position as indicated in Table xyz.”

Status: In process discussions ongoing. E.g. Workstream CVS5 discusses check valve position; E.g. CVS2 discusses “report exists and concludes.”

***SAMPLE A – SIMPLIFIED SUBMITTAL CASE:***

**ITAAC Completion Letter A for RVH1 – ITAAC 2.1.3-2.2.c)**

Date \_\_\_\_\_

Subject: ITAAC 2.1.3-2.2.c) Completion Notice

Mr. \_\_\_\_\_  
Nuclear Regulatory Commission

We have completed the <sup>inspection</sup>~~assessment~~ of the reactor vessel arrangement, ITAAC 2.1.3-2.2.c) and have determined that the specific acceptance criterion for this ITAAC has been met. The results of as-built measurements of the reactor vessel are in compliance with the requirements of ITAAC 2.1.3-2.2.c).

Outline and as-built drawings that form the basis for this conclusion are available at the plant site. We request NRC staff confirmation of this conclusion and publication of the required notice in the *Federal Register* per 10 CFR 52.99 and in accordance with the NRC process and schedule guidance for ITAAC completion, evaluation and notification.

Sincerely,

\_\_\_\_\_  
Designated Licensee Officer or Manager

***SAMPLE B – MORE DETAIL SUBMITTAL CASE:***

**ITAAC Completion Letter B for RVH1 – ITAAC 2.1.3-2.2.c)**

Date \_\_\_\_\_

Subject: ITAAC 2.1.3-2.2.c) Completion Notice

Mr. \_\_\_\_\_  
Nuclear Regulatory Commission

We have completed the assessment of the reactor vessel arrangement, ITAAC 2.1.3-2.2.c) and have determined that the specific acceptance criterion for this ITAAC has been met. The results of as-built measurements of the reactor vessel are in compliance with the requirements of ITAAC 2.1.3-2.2.c).

The bases for this conclusion include the documents identified below and are available at the plant site.

1. APP-MV01-V1-001 Rev. 3., AP1000 Reactor Vessel Outline Elevation
2. APP-MV02-V1-002 Rev. 1, AP1000 Reactor Vessel Outline Plan
3. L5-0DA171 Rev. 1, AP1000 Reactor Vessel As-Built Drawing (1 of 3)
4. L5-0DA172 Rev. 1, AP1000 Reactor Vessel As-Built Drawing (2 of 3)
5. L5-0DA173 Rev. 1, AP1000 Reactor Vessel As-Built Drawing (3 of 3)

We request NRC staff confirmation of this determination and publication of the required notice in the *Federal Register* per 10 CFR 52.99 and in accordance with the NRC process and schedule guidance for ITAAC completion, evaluation and notification.

Sincerely,

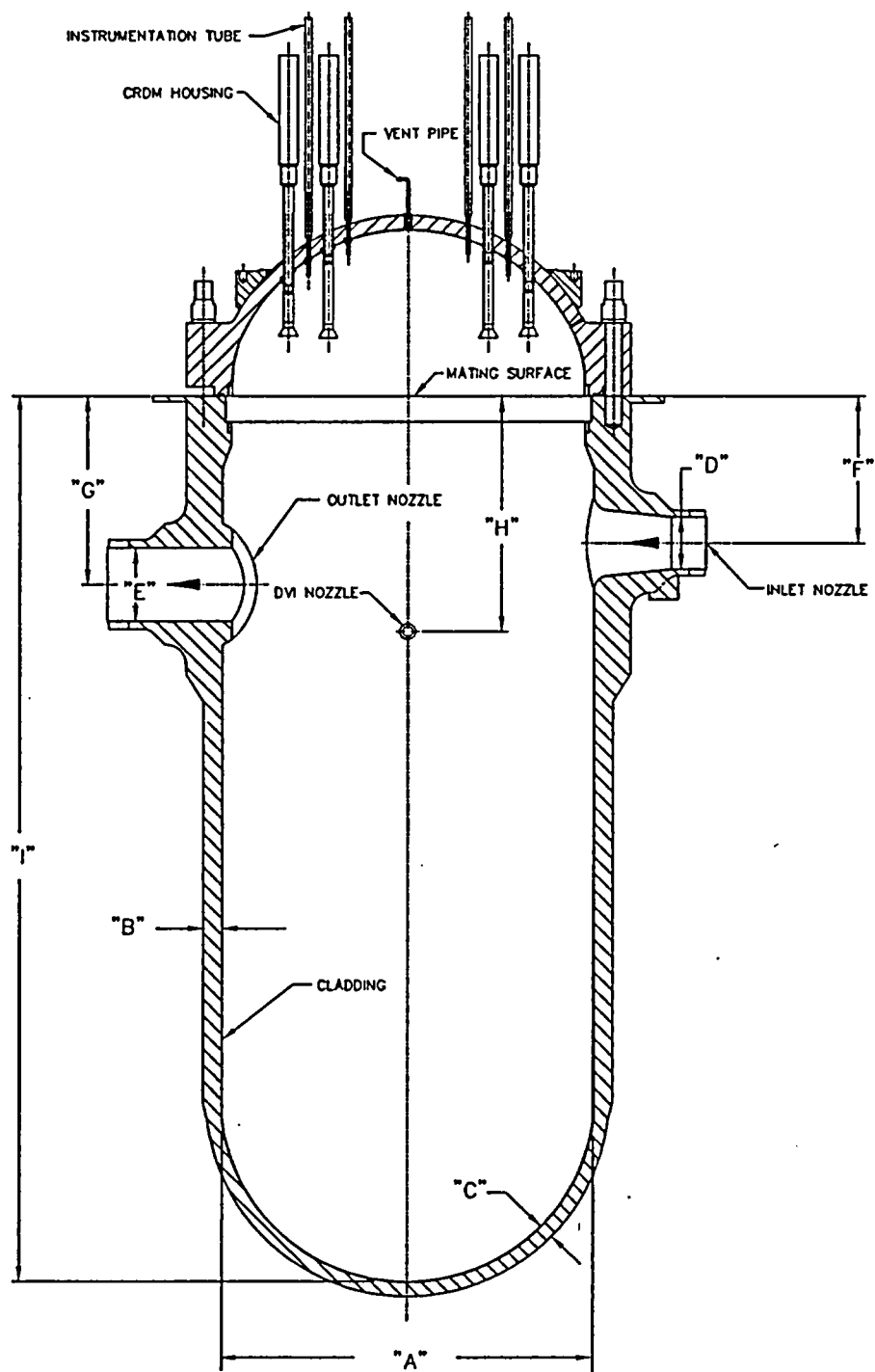
\_\_\_\_\_  
Designated Licensee Officer or Manager

# ITAAC WORKSTREAMS

Suggest to remove	WSName	WS Title		
✓	CVS1	Component ASME Code Status for the AP1000 Chemical and Volume Control System		04/12/05
✓	CVS2	Pipe weld ASME Code Status for the AP1000 Chemical and Volume Control System		
✓	CVS3	Seismic Qualification of AP1000 Chemical and Volume Control System Valves		
✓	CVS4	Make-up capability of the AP1000 Chemical and Volume Control System		
	CVS5	Operation Check of AP1000 Chemical and Volume Control System Valves		
✓	RVH1	Reactor Vessel Head Arrangement		
	RVH2	ASME design and construction of AP1000 Reactor Vessel Head		
	* RVH3	Reactor Internals Vibration		
	* STR1	Building Physical Arrangement		
✓	STR2	Nuclear Island Critical Sections		
	STR3	Fire Area Boundaries		
	STR4A	Building Waterproofing - basemat and exterior walls to grade		
	* STR4B	Building Waterproofing - I&C flood boundaries		
	* STR4C	Building Waterproofing - PXS, CVS flood boundaries		
✓	* TGS1	Functional Arrangement of the ABWR Turbine Gland Seal System		
	TGS2	Turbine Gland Seal System Displays for the ABWR	12/10/2004	10/10/2004

**The ITAAC for RVH1 – ITAAC 2.1.3-2.2.c)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
2.c) The reactor vessel arrangement is as shown in Figure 2.1.3-3.	Inspection of the as-built system will be performed.	The as-built RXS will accommodate the reactor vessel arrangement shown in Figure 2.1.3-3.	Reactor vessel outline drawings and as-built drawings.

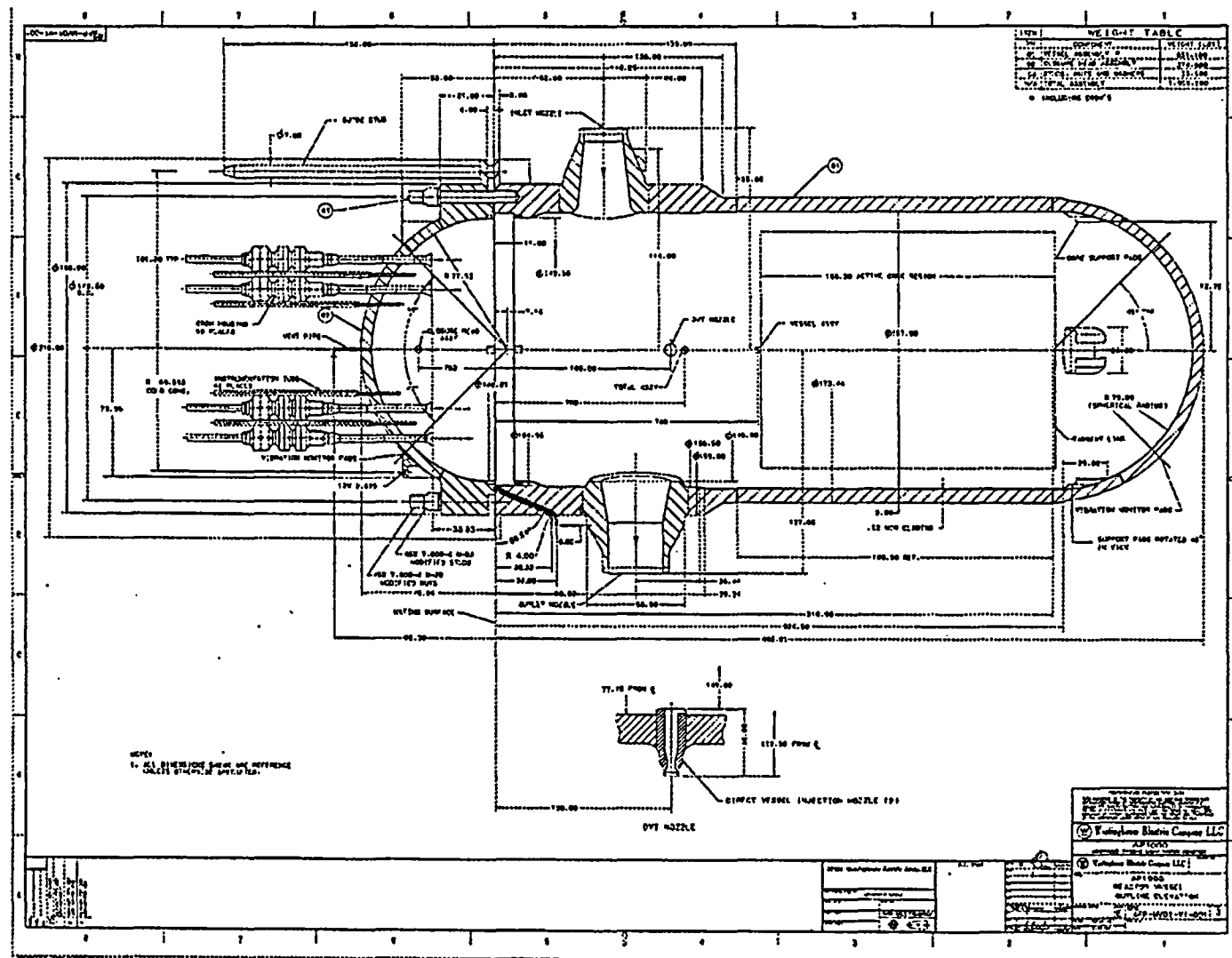


**Figure 2.1.3-3**  
**Reactor Vessel Arrangement**

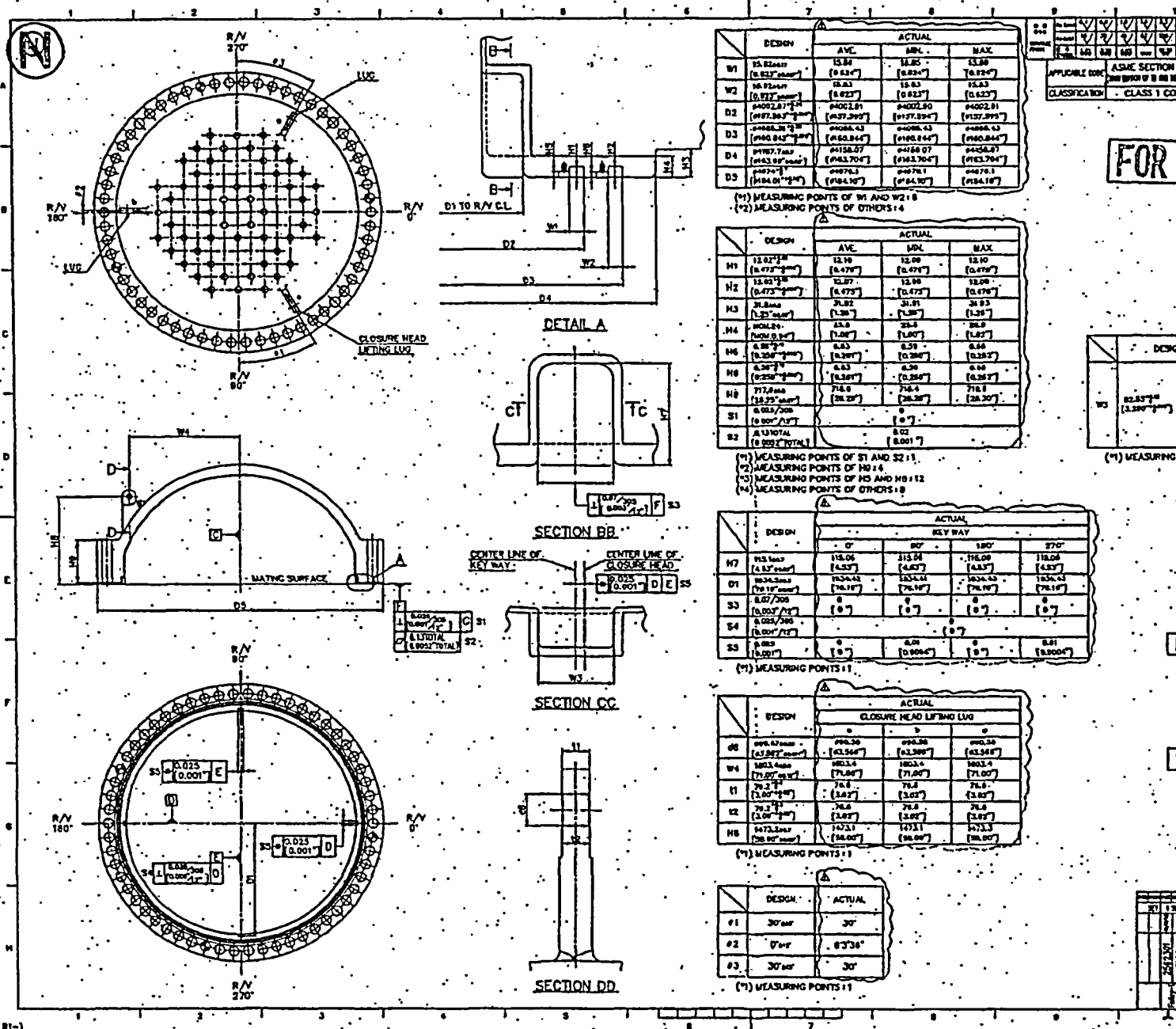


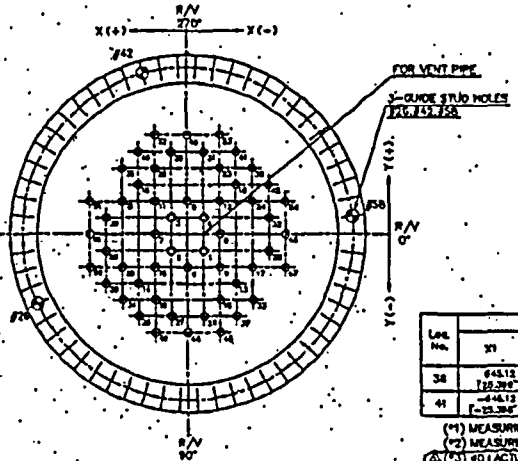
**Table 2.1.3-4**  
**Key Dimensions and Acceptable Variations of the Reactor Vessel and Internals**  
**(Figure 2.1.3.2 and Figure 2.1.3-3)**

Description	Dimension or Elevation (inches)	Nominal Value (inches)	Acceptable Variation (inches)
RV inside diameter at beltline (inside cladding)	A	157.0	+1.0/-1.0
RV wall thickness at beltline (without cladding)	B	8.0	+1.0/-0.12
RV wall thickness at bottom head (without cladding)	C	6.0	+1.0/-0.12
RV inlet nozzle inside diameter at safe end	D	22.0	+0.35/-0.10
RV outlet nozzle inside diameter at safe end	E	31.0	+0.35/-0.10
Elevation from RV mating surface to centerline of inlet nozzle	F	62.5	+0.25/-0.25
Elevation from RV mating surface to centerline of outlet nozzle	G	80.0	+0.25/-0.25
Elevation from RV mating surface to centerline of direct vessel injection nozzle	H	100.0	+0.25/-0.25
Elevation from RV mating surface to inside of RV bottom head (inside cladding)	I	397.59	+1.0/-0.50
Elevation from RV mating surface to top of lower core support plate	J	327.3	+0.50/-0.50
Separation distance between bottom of upper core plate and top of lower core support with RV head in place	K	189.8	+0.20/0.20









Loc. No.	DESIGN			ACTUAL				
	X1	X2	#	X1	X2	Avg.	Min.	Max.
#16	177.08 (77.91)	-0.1331 (-0.953)		173.61 (72.708)	-0.1323 (-0.9502)	0.0143 (0.29)	0.0143 (0.29)	0.0143 (0.29)
#42	200.64 (20.57)	2006.0 (21.06)	0.0182 (0.37)	201.47 (20.507)	2006.63 (20.507)	0.0128 (0.29)	0.0125 (0.29)	0.0125 (0.29)
#58	-0.1418 (-0.93)	2.5818 (2.58)		-0.1424 (-0.9312)	2.5818 (2.58)	0.0124 (0.29)	0.0124 (0.29)	0.0124 (0.29)

	DESIGN	ACTUAL		
		AVE.	GR.	MAX.
03	033.04 [01.320]	033.00 [01.320]	033.04 [01.320]	033.04 [01.320]
04	033.00 [01.320]	033.00 [01.320]	033.07 [01.320]	033.00 [01.320]

150 MPIC 501-2-10-125		
PLAN RECORD		
Rev. 0		
• ORIGINAL ISSUE (AS BLANK FORMAT)		
REVIEWED BY MFG & QC		
Rev. 1		
• ADDED THE ACTUAL DIMENSIONS		
• CHANGED A PARTS OF PRODUCTION		
• ADDED ONE AND SO.		
• DIMENSIONS:		
• 100-100-100		
• 001256012512		
REVIEWED BY MFG & QC		
APPROVED BY	DESIGNED BY	PROCESSED BY
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
DATE	DATE	DATE
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

[illegible]

(1) MEASURING POINTS OF  $d_1$ ,  $d_2$  AND  $d_6$  12  
(2) MEASURING POINTS OF OTHERS 15  
(3)  $d_0$  : ACTUAL INNER DIAMETER OF CLOSURE HEAD PENETRATION

[illegible]

(1) MEASURING POINTS OF #1, #2 AND OR #3  
(2) MEASURING POINTS OF OTHERS IF  
(3) #3: ACTUAL INNER DIAMETER OF CLOSURE HEAD PENETRATION

Loc. No.	DESIGN							A	08	ACTUAL												
	X1	Y1	A, 42	H10	L1	S10	X1			Y1	M1			42			H10	L1	S10	08	08	
										AVE.	MIN.	MAX.	AVE.	MIN.	MAX.					AVE.	MIN.	MAX.
1	-21.84 (-6.69)	-21.04 (-6.69)								-21.83 (-6.67)	-21.47 (-6.67)	0101.64 0101.64	0101.54 0101.54	0101.54 0101.54	0101.54 0101.54	200.93 177.47	222.03 177.47	0.000 0.000		0101.54 0101.54	0101.54 0101.54	0101.54 0101.54
2	21.84 (+6.69)	-21.04 (-6.69)								21.83 (+6.67)	-21.47 (-6.67)	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
3	21.84 (+6.69)	21.04 (+6.69)								21.83 (+6.67)	21.47 (+6.67)	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
4	-21.84 (-6.69)	21.04 (+6.69)	0101.54 0101.54	200.93 177.47						-21.83 (-6.67)	21.47 (+6.67)	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
5	-43.08 (-13.37)	0.00 0.00								-43.09 (-13.37)	0.00 0.00	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
6	-43.08 (-13.37)	-43.08 (-13.37)								-43.09 (-13.37)	-43.08 (-13.37)	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
7	-43.08 (-13.37)	0.00 0.00								-43.09 (-13.37)	0.00 0.00	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53
8	0.00 0.00	-43.08 (-13.37)								0.00 0.00	-43.09 (-13.37)	0101.63 0101.63	0101.53 0101.53	0101.53 0101.53	0101.53 0101.53	200.97 181.43	222.03 177.47	0.000 0.000		0101.53 0101.53	0101.53 0101.53	0101.53 0101.53

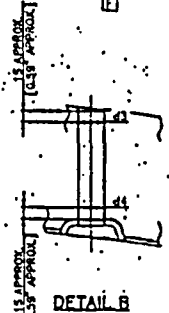
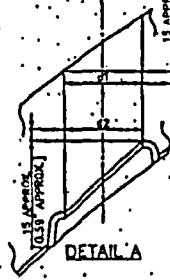
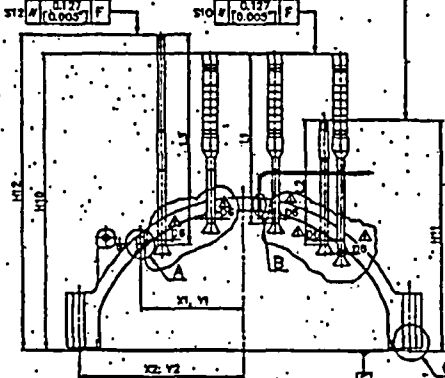
(1) MEASURING POINTS OF d1, d2 AND d8, 12  
(2) MEASURING POINTS OF OTHERS: 1  
△ (3) #0: ACTUAL INNER DIAMETER OF CLOSURE HEAD PENETRATION.

1. 本館に「付録生体図表(RV上巻) 1/3, 3/3」  
 ・(シリ-010A171, 173)と3巻をもって1組とする。  
 2. 付録生体図表については、「付録生体図表(U65-L8-020125)」  
 を巻組のこと。

1. THIS DWG. FORMS A TRIO OF DRAWINGS WITH 1AS-BUILT  
DRAWING (RY CLOSURE HEAD) 1/2, 3/31  
(LS-01DA171, 173).

2. DIMENSIONS ARE TO BE MEASURED IN ACCORDANCE WITH  
PROCEDURE U03-LS-020123.

QTY	UNIT	DESCRIPTION	MATERIAL	EXAMINATION REGION CONTAINMENT VESSEL (C)	REMARKS
1	EA	REPLACEMENT REACTOR VESSEL CLOSURE HEAD AS-BUILT DRAWING (RV CLOSURE HEAD) 中核集团 (NRC) 2/3	NPC/SNC JOSEPH W. FARLEY UNIT 1		
1	EA	REPLACEMENT REACTOR VESSEL CLOSURE HEAD AS-BUILT DRAWING (RV CLOSURE HEAD) 中核集团 (NRC) 2/3	L5-01DA172		REV.





3 of 3 SHEET PROJECTIONS		ISO-METRIC SKETCH THREADS	
APPLICABLE CODE		CLASSIFICATION	
CLASS 1 COMPONENT		CLASS 1 COMPONENT	

Loc. No.	DESIGN				ACTUAL											
	M	V	P	H	L	S	V	Ave				M	V	P	H	L
								Ave	Min	Max	Max					
9	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
10	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
11	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
12	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
13	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
14	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
15	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
16	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
17	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
18	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
19	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
20	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
21	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
22	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
23	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
24	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
25	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
26	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
27	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
28	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
29	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
30	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
31	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
32	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
33	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
34	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
35	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
36	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
37	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
38	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
39	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
40	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
41	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
42	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
43	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
44	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
45	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
46	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
47	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
48	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
49	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
50	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
51	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
52	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
53	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					
54	-430.08	-430.08						-430.11	-430.08	-430.08	-430.08					

FOR APPROVAL

NOTE

- THIS DWG. FORMS A PART OF DRAWINGS WITH T&S-BUILT DRAWING (RV CLOSURE HEAD) 1/3, 2/3
- 15-01DA173, 1723
- LOCATIONS ARE TO BE MEASURED IN ACCORDANCE WITH PROCEDURE UAC-LS-020123

注意事項

- 本図はT&S-BUILT (RV CLOSURE HEAD) 1/3, 2/3の一部分を形成する
- 15-01DA173, 1723と3000-CT11278
- 測定はUAC-LS-020123の測定手順に従って行われる

(1) MEASURING POINTS OF 47, 48 AND 49  
(2) MEASURING POINTS OF OTHERS  
(3) NO TACTICAL INNER DIAMETER OF CLOSURE HEAD PENETRATION

DATE	DESCRIPTION	MATERIAL	REMARKS
15-01DA173	REPLACEMENT REACTOR VESSEL CLOSURE HEAD	APC/SNG JOSEPH M. FARLEY UNIT 1	
15-01DA173	AS-BUILT DRAWING (RV CLOSURE HEAD) 3/3		

**The ITAAC for CVS1 – ITAAC 2.3.2-4.2.a)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
2.a) The components identified in Table 2.3.2-1 as ASME Code Section III are designed and constructed in accordance with ASME Code Section III requirements.	Inspection will be conducted of the as-built components as documented in the ASME design reports.	The ASME Code Section III design reports exist for the as-built components identified in Table 2.3.2 1 as ASME Code Section III.	The portions of the as-built ASME Code Design Report that apply to the items in Table 2.3.2-1.

Table 2.3.2-1

Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/Qual. for Harsh Envir.	Safety-Related Display	Control PMS	Active Function	Loss of Motive Power Position
RCS Purification Motor-operated Isolation Valve	CVS-PL-V001	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
RCS Purification Motor-operated Isolation Valve	CVS-PL-V002	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
RCS Purification Motor-operated Isolation Valve	CVS-PL-V003	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Resin Flush Line Containment Isolation Valve	CVS-PL-V040	Yes	Yes	No	- / -	-	-	-	-
CVS Resin Flush Line Containment Isolation Valve	CVS-PL-V041	Yes	Yes	No	- / -	-	-	-	-
CVS Demineralizer Resin Flush Line Containment Isolation Thermal Relief Valve	CVS-PL-V042	Yes	Yes	No	- / -	-	-	Transfer Open/ Transfer Closed	-
CVS Letdown Containment Isolation Valve	CVS-PL-V045	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	Closed
CVS Letdown Containment Isolation Valve	CVS-PL-V047	Yes	Yes	Yes	Yes/No	Yes (Valve Position)	Yes	Transfer Closed	Closed



Table 2.3.2-1 (cont.)

Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety- Related Display	Control PMS	Active Function	Loss of Motive Power Position
CVS Purification Return Line Pressure Boundary Check Valve	CVS-PL- V080	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Purification Return Line Pressure Boundary Isolation Check Valve	CVS-PL- V081	Yes	Yes	No	- / -	No	-	Transfer Closed	-
CVS Purification Return Line Pressure Boundary Check Valve	CVS-PL- V082	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Auxiliary Pressurizer Spray Line Pressure Boundary Valve	CVS-PL- V084	Yes	Yes	Yes	Yes/Yes	No	Yes	Transfer Closed	Closed
CVS Auxiliary Pressurizer Spray Line Pressure Boundary Check Valve	CVS-PL- V085	Yes	Yes	No	Yes/Yes	-	-	Transfer Closed	-
CVS Makeup Line Containment Isolation Motor-operated Valve	CVS-PL- V090	Yes	Yes	Yes	Yes/No	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Makeup Line Containment Isolation Motor-operated Valve	CVS-PL- V091	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Hydrogen Addition Line Containment Isolation Valve	CVS-PL- V092	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	Closed

Table 2.3.2-1 (cont.)

Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety- Related Display	Control PMS	Active Function	Loss of Motive Power Position
CVS Hydrogen Addition Line Containment Isolation Check Valve	CVS-PL-V094	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Makeup Line Containment Isolation Thermal Relief Valve	CVS-PL-V100	Yes	Yes	No	- / -	-	-	Transfer Open/ Transfer Closed	-
CVS Demineralized Water Isolation Valve	CVS-PL- V136A	Yes	Yes	Yes	Yes/No	No	Yes	Transfer Closed	Closed
CVS Demineralized Water Isolation Valve	CVS-PL- V136B	Yes	Yes	Yes	Yes/No	No	Yes	Transfer Closed	Closed

Table 2.3.2-2

Line Name	Line Number	ASME Code Section III
CVS Purification Line	BTA L001	Yes
CVS Resin Flush Containment Penetration Line	BBB-L026	Yes
CVS Purification Line Return	BTA L038	Yes
CVS Letdown Containment Penetration Line	BBB-L047	Yes
CVS Makeup Containment Penetration Line	BBB L053	Yes
CVS Hydrogen Addition Containment Penetration Line	BBB-L061	Yes
CVS Supply Line to Regenerative Heat Exchanger	BBD L002	No
CVS Return Line from Regenerative Heat Exchanger	BBD L018 BBD L073	No No
CVS Line from Regenerative Heat Exchanger to Letdown Heat Exchanger	BBD L003 BBD L072	No No
CVS Lines from Letdown Heat Exchanger to Demin. Tanks	BBD L004 BBD L005	No No
CVS Lines from Demin Tanks to RC Filters	BBD L020 BBD L021 BBD L022 BBD L029 BBD L037	No No No No No
CVS Lines from RC Filters to Regenerative Heat Exchanger	BBD L030 BBD L031 BBD L034	No No No
CVS Resin Fill Lines to Demin. Tanks	BBD L008 BBD L013 BBD L025	No No No

**The ITAAC for CVS2 – ITAAC 2.3.2-4.3.b)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
3.b) Pressure boundary welds in piping identified in Table 2.3.2-2 as ASME Code Section III meet ASME Code Section III requirements.	Inspection of the as-built pressure boundary welds will be performed in accordance with the ASME Code Section III.	A report exists and concludes that the ASME Code Section III requirements are met for non-destructive examination of pressure boundary welds.	The NDE portions of the as-built ASME Code Design Report that apply to the items in Table 2.3.2-2.

Table 2.3.2-2

Line Name	Line Number	ASME Code Section III
CVS Purification Line	BTAL001	Yes
CVS Resin Flush Containment Penetration Line	BBB-L026	Yes
CVS Purification Line Return	BTAL038	Yes
CVS Letdown Containment Penetration Line	BBB-L047	Yes
CVS Makeup Containment Penetration Line	BBB L053	Yes
CVS Hydrogen Addition Containment Penetration Line	BBB-L061	Yes
CVS Supply Line to Regenerative Heat Exchanger	BBD L002	No
CVS Return Line from Regenerative Heat Exchanger	BBD L018 BBD L073	No No
CVS Line from Regenerative Heat Exchanger to Letdown Heat Exchanger	BBD L003 BBD L072	No No
CVS Lines from Letdown Heat Exchanger to Demin. Tanks	BBD L004 BBD L005	No No
CVS Lines from Demin Tanks to RC Filters	BBD L020 BBD L021 BBD L022 BBD L029 BBD L037	No No No No No
CVS Lines from RC Filters to Regenerative Heat Exchanger	BBD L030 BBD L031 BBD L034	No No No
CVS Resin Fill Lines to Demin. Tanks	BBD L008 BBD L013 BBD L025	No No No

**The ITAAC for CVS3 – ITAAC 2.3.2-4.5)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
5. The seismic Category I equipment identified in Table 2.3.2 1 can withstand seismic design basis loads without loss of safety function.	i) Inspection will be performed to verify that the seismic Category I equipment identified in Table 2.3.2-1 is located on the Nuclear Island.	i) The seismic Category I equipment identified in Table 2.3.2 1 is located on the Nuclear Island.	As-built documents indicate the items in Table 2.3.2-1 are located on the nuclear island.
	ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed.	ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis dynamic loads without loss of safety function.	The portions of the as-built ASME Code Design Report that apply to the seismic capability of the items in Table 2.3.2-1.
	iii) Inspection will be performed for the existence of a report verifying that the as-installed equipment including anchorage is seismically bounded by the tested or analyzed conditions.	iii) A report exists and concludes that the as-installed equipment including anchorage is seismically bounded by the tested or analyzed conditions.	The portions of the as-built ASME Code Design Report that apply to anchorage of the items in Table 2.3.2-1.

Table 2.3.2-1

Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display	Control PMS	Active Function	Loss of Motive Power Position
RCS Purification Motor-operated Isolation Valve	CVS-PL-V001	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
RCS Purification Motor-operated Isolation Valve	CVS-PL-V002	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
RCS Purification Motor-operated Isolation Valve	CVS-PL-V003	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Resin Flush Line Containment Isolation Valve	CVS-PL-V040	Yes	Yes	No	- / -	-	-	-	-
CVS Resin Flush Line Containment Isolation Valve	CVS-PL-V041	Yes	Yes	No	- / -	-	-	-	-
CVS Demineralizer Resin Flush Line Containment Isolation Thermal Relief Valve	CVS-PL-V042	Yes	Yes	No	- / -	-	-	Transfer Open/ Transfer Closed	-
CVS Letdown Containment Isolation Valve	CVS-PL-V045	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	Closed
CVS Letdown Containment Isolation Valve	CVS-PL-V047	Yes	Yes	Yes	Yes/No	Yes (Valve Position)	Yes	Transfer Closed	Closed

Table 2.3.2-1 (cont.)									
Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety-Related Display	Control PMS	Active Function	Loss of Motive Power Position
CVS Purification Return Line Pressure Boundary Check Valve	CVS-PL-V080	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Purification Return Line Pressure Boundary Isolation Check Valve	CVS-PL-V081	Yes	Yes	No	- / -	No	-	Transfer Closed	-
CVS Purification Return Line Pressure Boundary Check Valve	CVS-PL-V082	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Auxiliary Pressurizer Spray Line Pressure Boundary Valve	CVS-PL-V084	Yes	Yes	Yes	Yes/Yes	No	Yes	Transfer Closed	Closed
CVS Auxiliary Pressurizer Spray Line Pressure Boundary Check Valve	CVS-PL-V085	Yes	Yes	No	Yes/Yes	-	-	Transfer Closed	-
CVS Makeup Line Containment Isolation Motor-operated Valve	CVS-PL-V090	Yes	Yes	Yes	Yes/No	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Makeup Line Containment Isolation Motor-operated Valve	CVS-PL-V091	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	As Is
CVS Hydrogen Addition Line Containment Isolation Valve	CVS-PL-V092	Yes	Yes	Yes	Yes/Yes	Yes (Valve Position)	Yes	Transfer Closed	Closed

Note: Dash (-) indicates not applicable.



Table 2.3.2-1 (cont.)									
Equipment Name	Tag No.	ASME Code Section III	Seismic Cat. I	Remotely Operated Valve	Class 1E/ Qual. for Harsh Envir.	Safety- Related Display	Control PMS	Active Function	Loss of Motive Power Position
CVS Hydrogen Addition Line Containment Isolation Check Valve	CVS-PL-V094	Yes	Yes	No	- / -	-	-	Transfer Closed	-
CVS Makeup Line Containment Isolation Thermal Relief Valve	CVS-PL-V100	Yes	Yes	No	- / -	-	-	Transfer Open/ Transfer Closed	-
CVS Demineralized Water Isolation Valve	CVS-PL- V136A	Yes	Yes	Yes	Yes/No	No	Yes	Transfer Closed	Closed
CVS Demineralized Water Isolation Valve	CVS-PL- V136B	Yes	Yes	Yes	Yes/No	No	Yes	Transfer Closed	Closed

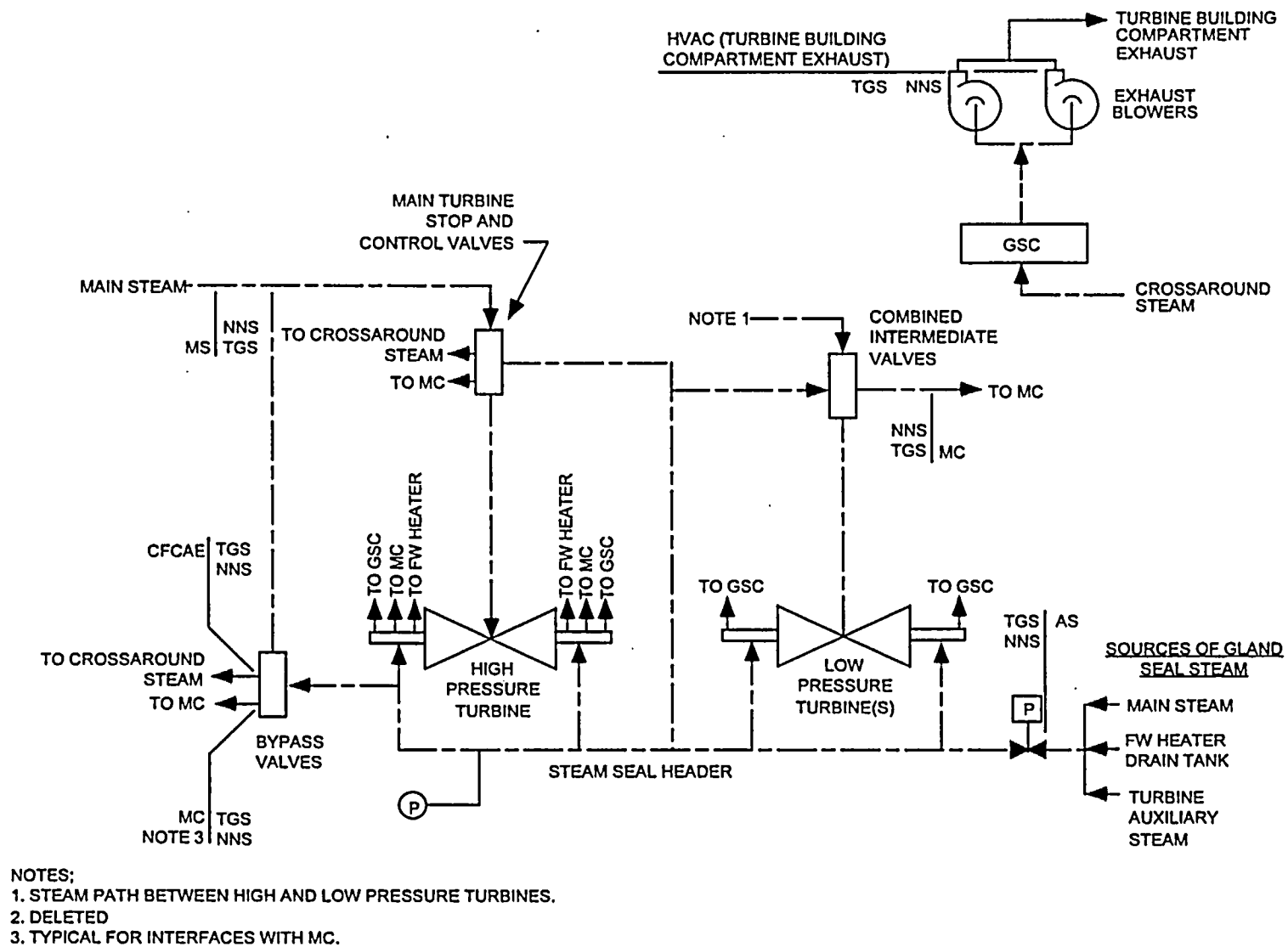
Note: Dash (-) indicates not applicable.

**The ITAAC for CVS4 – ITAAC 2.3.2-4.8.a)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
8.a) The CVS provides makeup water to the RCS.	i) Testing will be performed by aligning a flow path from each CVS makeup pump, actuating makeup flow to the RCS at pressure greater than or equal to 2000 psia, and measuring the flow rate in the makeup pump discharge line with each pump suction aligned	i) Each CVS makeup pump provides a flow rate of greater than or equal to 100 gpm.	CVS preoperational acceptance test report section applicable to makeup pump flow.
	ii) Inspection of the boric acid tank volume will be performed.	ii) The volume in the boric acid tank is at least 70,000 gallons between the tank outlet connection and the tank overflow.	CVS preoperational acceptance test report section applicable to boric acid tank volume.
	iii) Testing will be performed to measure the delivery rate from the DWS to the RCS. Both CVS makeup pumps will be operating and the RCS pressure will be below 6 psig.	iii) The total CVS makeup flow to the RCS is less than or equal to 200 gpm.	CVS preoperational acceptance test report section applicable to total system makeup flow.

**The ITAAC for TGS1 – ITAAC 2.10.9.1**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
1. The basic configuration of the TGS System is as shown on Figure 2.10.9.	1. Inspections of the as-built system will be conducted.	1. The as-built TGS System conforms with the basic configuration shown on Figure 2.10.9	As-built documents indicate the basic configuration of items in Figure 2.10.9.



### Figure 2.10.9 Turbine Gland Seal System

**The ITAAC for STR2 – ITAAC 3.3.6.2.a)**

Requirement	Inspection, Test or Analysis	Acceptance Criteria	ITAAC Determination Basis
2.a) The nuclear island structures, including the critical sections listed in Table 3.3-7, are seismic Category I and are designed and constructed to withstand design basis loads as specified in the Design Description, without loss of structural integrity and the safety-related functions.	i) An inspection of the nuclear island structures will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis loads.	i) A report exists which reconciles deviations during construction and concludes that the as-built nuclear island structures, including the critical sections, conform to the approved design and will withstand the design basis loads specified in the Design Description without loss of structural integrity or the safety-related functions.	A report that reconciles deviations.
	ii) An inspection of the as-built concrete thickness will be performed.	ii) A report exists that concludes that the as-built concrete thicknesses conform with the building sections defined on Table 3.3-1.	A report that concludes that the as-built concrete thicknesses conform with the building sections defined on Table 3.3-1.

**Table 3.3-1**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
<b>Containment Building Internal Structure</b>				
Shield Wall between Reactor Vessel Cavity and RCDT Room	E-W wall parallel with column line 7	From 71'-6" to 83'-0"	3'-0"	Yes
West Reactor Vessel Cavity Wall	N-S wall parallel with column line N	From 83'-0" to 98'-0"	7'-6"	Yes
North Reactor Vessel Cavity Wall	E-W wall parallel with column line 7	From 83'-0" to 98'-0"	9'-0"	Yes
East Reactor Vessel Cavity Wall	N-S wall parallel with column line N	From 83'-0" to 98'-0"	7'-6"	Yes
West Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
North Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
East Refueling Cavity Wall	N-S wall parallel with column line N	From 98'-0" to 135'-3"	4'-0"	Yes
South Refueling Cavity Wall	E-W wall parallel with column line 7	From 98'-0" to 135'-3"	4'-0"	Yes
South wall of west steam generator compartment	Not Applicable	From 103'-0" to 135'-3"	2'-6"	No
West wall of west steam generator compartment	Not Applicable	From 103'-0" to 135'-3"	2'-6"	No
North wall of west steam generator compartment/south wall of pressurizer compartment	Not Applicable	From 103'-0" to 135'-3" and 158'-0"	2'-6"	Yes
West wall of pressurizer compartment	Not Applicable	From 107'-2" to 169'-0"	2'-6"	Yes
North wall of pressurizer compartment	Not Applicable	From 107'-2" to 169'-0"	2'-6"	Yes
East wall of pressurizer compartment	Not Applicable	From 118'-6" to 169'-0"	2'-6"	Yes
North-east wall of in-containment refueling water storage tank	Parallel to column line N	From 103'-0" to 135'-3"	2'-6"	No
West wall of in-containment refueling water storage tank	Not applicable	From 103'-0" to 135'-3"	5/8" steel plate with stiffeners	No
South wall of east steam generator compartment	Not Applicable	From 87'-6" to 135'-3"	2'-6"	Yes

1. The column lines and floor elevations are identified and included on Figures 3B through 3.3-13.
2. These wall thicknesses have a construction tolerance of 1 inch, except for exterior walls below grade where the tolerance is +12 inches, - 1 inch.
3. For walls that are part of structural modules, the concrete thickness also includes the steel face plates.

**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
East wall of east steam generator compartment	Not Applicable	From 94'-0" to 135'-3"	2'-6"	Yes
North wall of east steam generator compartment	Not Applicable	From 87'-6" to 135'-3"	2'-6"	Yes
<b>Shield Building</b>				
Shield Building Cylinder	Not Applicable	From 100'-0" to 265'-0"	3'-0"	Yes
Columns between air inlets	Not Applicable	From 265'-0" to 271'-6"	3'-0"	Yes
Tension Ring	Not Applicable	From 271'-6" to 275'-10"	3'-0"	Yes
Conical Roof	Not Applicable	From 275'-10" to 289'-0"	1'-6" cast-in-place concrete over 6" pre-cast concrete ribbed conical sections	Yes
PCS Tank External Cylindrical Wall	Not Applicable	From 298'-9" to 333'-9"	2'-0"	Yes
PCS Tank Internal Cylindrical Wall	Not Applicable	From 314'-4" to 334'-0"	1'-6"	Yes
PCS Tank Roof	Not Applicable	334'-0"	1'-3"	No
<b>Auxiliary Building Walls/Floors</b>				
Column Line 1 wall	From I to N	From 66'-6" to 100'-0"	3'-0"	No
Column Line 1 wall	From I to N	From 100'-0" to 180'-0"	2'-3"	Yes
Column Line 2 wall	From I to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From K-2 to L-2	From 66'-6" to 135'-3"	5'-0"	Yes
Column Line 2 wall	From L-2 to N	From 98'-0" to 135'-3"	2'-6"	Yes
Column Line 2 wall	From I to J-1	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line 3 wall	From J-1 to J-2	From 66'-6" to 82'-6"	2'-6"	Yes
Column Line 3 wall	From J-1 to J-2	From 100'-0" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 3 wall	From K-2 to L-2	From 66'-6" to 94'-3"	2'-6"	Yes
Column Line 4 wall	From I to J-1	From 66'-6" to 153'-0"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 66'-6" to 92'-6"	2'-6"	Yes
Column Line 4 wall	From J-1 to J-2	From 100'-0" to 135'-3"	2'-6"	Yes

**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Column Line 4 wall	From J-2 to K-2	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line 4 wall	From I to intersection with shield building wall	From 135'-3" to 180'-0"	2'-0"	Yes
Column Line 5 wall	From I to J-1	From 66'-6" to 160'-6"	2'-0"	Yes
Column Line 7.1 wall	From I to J-1	From 66'-6" to 82'-6"	2'-0"	Yes
Column Line 7.2 wall	From I to J-1	From 66'-6" to 100'-0"	2'-0"	Yes
Column Line 7.3 wall	From I to K	From 66'-6" to 100'-0"	3'-0"	Yes
Column Line 7.3 wall	From I to K	From 100'-0" to 160'-6"	2'-0"	No
Column Line 11 wall	From I to Q	From 66'-6" to 100'-0"	3'-0"	No
Column Line 11 wall	From I to Q	From 100'-0" to 117'-6"	2'-0"	Yes
Column Line 11 wall	From I to L	From 117'-6" to 153'-0"	2'-0"	Yes
Column Line 11 wall	From L to M	From 117'-6" to 135'-3"	4'-0"	Yes
Column Line 11 wall	From M to P	From 117'-6" to 135'-3"	2'-0"	Yes
Column Line 11 wall	From P to Q	From 117'-6" to 135'-3"	4'-0"	Yes
Column Line 11 wall	From L to Q	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line I wall	From 1 to 11	From 66'-6" to 100'-0"	3'-0"	No
Column Line I wall	From 1 to 4	From 100'-0" to 180'-0"	2'-0"	Yes
Column Line I wall	From 4 to 7.3	From 100'-0" to 160'-6"	2'-0"	No
Column Line I wall	From 7.3 to 11	From 100'-0" to 153'-0"	2'-0"	No
Column Line J-1 wall	From 1 to 2	From 82'-6" to 100'-0"	2'-0"	Yes
Column Line J-1 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-1 wall	From 2 to 4	From 135'-3" to 153'-0"	2'-0"	Yes
Column Line J-1 wall	From 4 to 5	From 66'-6" to 107'-2"	2'-0"	Yes
Column Line J-2 wall	From 2 to 4	From 66'-6" to 135'-3"	2'-6"	Yes
Column Line J-2 wall	From 4 to intersection with shield building wall	From 82'-6" to 107'-2"	2'-0"	Yes
Column Line K-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-9"	Yes
Column Line L-2 wall	From 2 to 4	From 66'-6" to 135'-3"	4'-0"	Yes
Column Line N wall	From 1 to 2	From 66'-6" to 119'-9"	3'-0"	No



**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(xx)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Column Line N wall	From 1 to 2	From 119'-9" to 135'-3"	3'-0"	Yes
Column Line N wall	From 2 to 4	From 66'-6" to 98'-0"	3'-0"	No
Column Line N wall	From 2 to 4	From 98'-0" to 135'-3"	5'-6"	Yes
Column Line N wall	From 1 to 4	From 135'-3" to 180'-0"	2'-0"	Yes
Column Line J wall	From 7.3 to 11	From 66'-6" to 117'-6"	2'-0"	No
Column Line K wall	From 7.3 to 11	From 60'-6" to 135'-3"	2'-0"	Yes
Column Line L wall	From shield building wall to 11	From 60'-6" to 153'-0"	2'-0"	Yes
Column Line M wall	From shield building wall to 11	From 66'-6" to 153'-0"	2'-0"	Yes
Column Line P wall	From shield building wall to 11	From 66'-6" to 153'-0"	2'-0"	Yes
Column Line Q wall	From shield building wall to 11	From 66'-6" to 100'-0"	3'-0"	No
Column Line Q wall	From shield building wall to 11	From 100'-0" to 153'-0"	2'-0"	Yes
Labyrinth Wall between Col. Line 3 and 4 and-J to J-2	Not Applicable	From 82'-6" to 100'-0"	2'-0"	Yes
N-S Shield Wall (low wall)	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 107'-2"	2'-6"	Yes
N-S Shield Wall	Between K-2 and L-2 extending from column line 1 north	From 100'-0" to 125'-0"	2'-3"	Yes
E-W Shield Wall	Between 1 and 2 extending from column line N east	From 100'-0" to 125'-0"	2'-9"	Yes
Column Line 9.2 wall	From I to J and K to L	From 117'-6" to 135'-3"	2'-0"	Yes
Labyrinth Wall between Column Line 7.3 and 9.2 and J to K	Corner wall	From 117'-6" to 135'-3"	2'-0"	Yes
Auxiliary Area Basemat	From 1-11 and I-Q, excluding shield building	From 60'-6" to 66'-6"	6'-0"	No
Nuclear Island Basemat	Below shield building	From 60'-6" to containment vessel or 82'-6"	6'-0" to 22'-0" (varies)	No
Floor	From 1 to 2 and I to N	82'-6"	2'-0"	Yes
Floor	From 2 to 5 and J-1 to J-2	82'-6"	0'-9"	Yes
Pipe Chase Floor	From 2 to 5 and J-1 to J-2	92'-6"	2'-0"	Yes
Floor	From 2 to 3 and J-2 to K-2	90'-3"	3'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	92'-6"	2'-0"	Yes
Floor	From 4 to 7.3 and I to J1	82'-6"	2'-0"	Yes

**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Floor	From 1 to 2 and I to N	100'-0"	3'-0"	Yes
Floor	From 2 to 4 and K-2 to L-2	92'-8"	3'-2"	Yes
Floor	From I to J-2 and 4 to intersecting vertical wall before column line 5	107'-2"	2'-0"	Yes
Floor	From I to shield building wall and from intersecting vertical wall before column line 5 to column line 5	107'-2"	0'-9"	Yes
Floor	From 5 to 7.3 and I to shield building wall	100'-0"	2'-0"	Yes
Floor	From K to L and shield building wall to column line 10	100'-0"	0'-9"	Yes
Floor	From 1 to 1.6 and L-2 to N	125'-0"	3'-0"	Yes
Floor	From 1.6 to 2 and L-2 to N	117'-6"	2'-0"	Yes
Main Control Room Floor	From 9.2 to 11 and I to L	117'-6"	2'-0"	Yes
Floor	Bounded by shield bldg, 7.3, J, 9.2 and L	117'-6"	2'-0"	Yes
Floor	From 9.2 to 11 and L to Q	117'-6"	2'-0"	Yes
Floor	From 3 to 4 and J-2 to K-2	117'-6"	2'-0"	Yes
Floor	From 2 to 4 and I to J-1	153'-0"	1'-3"	Yes
Floor	From 1 to 4 and I to N	180'-0"	1'-3"	Yes
Floor	From 4 to short of column line 5 and from I to intersection with shield building wall	135'-5"	0'-9"	Yes
Floor	From short of column line 5 to column line 5 and from I to intersection with shield building wall	133'-0"	0'-9"	Yes
Floor	From 5 to 7.3 and from I to intersection with shield building wall	135'-3"	0'-9"	Yes
<b>Annex Building</b>				
Column line 2 wall	From E to H	From 107'-2" to 135'-3"	19 3/4"	Yes
Column line 4 wall	From E to H	From 107'-2" to 162'-6" & 166'-0"	2'-0"	Yes
N-S Shield Wall between E and F	From 2 to 4	From 107'-2" to 135'-3"	1'-0"	Yes

**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
Column line 4.1 wall	From E to H	From 107'-2" to 135'-3"	2'-0"	Yes
E-W Labyrinth Wall between column line 7.1 and 7.8 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	
N-S Labyrinth Wall between column line 7.8 and 9 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	
E-W Labyrinth Wall between column line 7.1 and 7.8 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	Yes
N-S Labyrinth Wall between column line 7.8 and 9 and G to H	Not Applicable	From 100'-0" to 112'-0"	2'-0"	Yes
N-S Shield Wall on Column line. F	From 4.1 North	From 100'-0" to 117'-6"	1'-0"	Yes
Column Line 9 wall	From E to connecting wall between G and H	From 107'-2" to 117'-6"	2'-0"	Yes
Column Line E wall	From 9 to 13	From 100'-0" to 135'-3"	2'-0"	Yes
Column Line 13 wall	From E to I.1	From 100'-0" to 135'-3"	2'-0"	Yes
Column Line I.1 wall	From 11.09 to 13	From 100'-0" to 135'-3"	2'-0"	Yes
Corridor Wall between G and H	From 9 to 13	From 100'-0" to 135'-3"	1'-6"	Yes
Column Line 9 wall	From I to H	From 117'-6" to 158'-0"	2'-0"	Yes
Floor	2 to 4 from shield wall between E and F to column line H	135'-3"	0'-6"	Yes
Floor	From 4 to 4.1 and E to H	135'-3"	1'-0"	Yes
Floor	From 9 to 13 and E to I.1	117'-6"	0'-6"	Yes
Floor	From 9 to 13 and E to I.1	135'-3"	0'-8"	Yes
Containment Filtration RmA (North Wall)	Between column line E to H	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration RmA (East wall)	Between column line E to F	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration RmA (West wall)	Between column line G to H	From 135'-3" to 158'-0"	1'-0"	Yes
Containment Filtration RmA (Floor)	Between column line E to H	135'-3"	1'-0"	Yes
Containment Filtration RmB (Floor)	Between column line E to H	146'-3"	0'-6"	Yes
Containment Filtration RmB (West wall)	Between column line G to H	From 146'-3" to 158'-0"	1'-0"	Yes
North wall (Room 50351)	N/A	100'-0" to top of wall	1'-4"	Yes
East Wall (Room 50351)	DR from 2R past 3R	100'-0" to top of wall	1'-4"	Yes

**Table 3.3-1 (cont.)**  
**Definition of Wall Thicknesses for Nuclear Island Buildings and Annex Building<sup>(1)</sup>**

Wall or Section Description	Column Lines	Floor Elevation or Elevation Range	Concrete Thickness <sup>(2)(3)</sup>	Applicable Radiation Shielding Wall (Yes/No)
West wall (Room 50351)	DR from 2R past 3R	100'-0" to top of wall	1'-4"	Yes
East wall (Room 50352)	FR from 1R to 2R	100'-0" to top of wall	2'-0"	Yes
South wall (Room 50352)	1R from FR to DR	100'-0" to top of wall	2'-0"	Yes
West Wall (Room 50352)	DR from 1R to 2R	100'-0" to top of wall	2'-0"	Yes

**Table 3.3-7  
Nuclear Island Critical Structural Sections**

**Containment Internal Structures**

South west wall of the refueling cavity  
 South wall of the west steam generator cavity  
 North east wall of the in-containment refueling water storage tank  
 In-containment refueling water storage tank steel wall  
 Column supporting the operating floor

**Auxiliary and Shield Building**

South wall of auxiliary building (column line 1), elevation 66'-6" to elevation 180'-0"  
 Interior wall of auxiliary building (column line 7.3), elevation 66'-6" to elevation 160'-6"  
 West wall of main control room in auxiliary building (column line L), elevation 117'-6" to elevation 153'-0"  
 North wall of MSIV east compartment (column line 11 between lines P and Q), elevation 117'-6" to elevation 153'-0"  
 Shield building cylinder, elevation 160'-6" to elevation 200'-0"  
 Roof slab at elevation 180'-0" adjacent to shield building cylinder  
 Floor slab on metal decking at elevation 135'-3"  
 2'-0" slab in auxiliary building (tagging room ceiling) at elevation 135'-3"  
 Finned floor in the main control room at elevation 135'-3"  
 Shield building roof, exterior wall of the PCS water storage tank  
 Shield building roof, tension ring and columns between air inlets elevation 265'-0" to elevation 275'-10"  
 Divider wall between the spent fuel pool and the fuel transfer canal

**Nuclear Island Basement Below Auxiliary Building**

Bay between reference column lines 9.1 and 11, and K and L  
 Bay between reference column lines 1 and 2 and K-2 and N