ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Friday, February 10, 2012 4:59 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (AREVA); CRIBB Arnie (EXTERNAL AREVA); DELANO Karen (AREVA); HATHCOCK Phillip (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); GUCWA Len (EXTERNAL AREVA); BALLARD Bob (AREVA); WILLIAMSON Rick (AREVA)
Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 500 (5944), FSAR Ch. 6, Questions 6.2.1.2-11 through 6.2.1.2-17
Attachments: RAI 500 Questions 06.02.01.02-11 through 06.02.01.02-17 Response US EPR DC - DRAFT.pdf

Getachew,

Attached is a draft response for RAI 500, Questions 6.2.1.2-11 through 6.2.1.2-17 in advance of the final response date of February 29, 2012 shown below.

Please let me know if the staff has questions or if these responses can be sent as final.

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Wednesday, September 28, 2011 5:05 PM
To: Getachew.Tesfaye@nrc.gov
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); GUCWA Len (External RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 500 (5944), FSAR Ch. 6

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 500 Response US EPR DC.pdf" provides a schedule since technically correct and complete responses to the 7 questions cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 500 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 500 — 06.02.01.02-11	2	2
RAI 500 — 06.02.01.02-12	3	3
RAI 500 — 06.02.01.02-13	4	4

RAI 500 — 06.02.01.02-14	5	5
RAI 500 — 06.02.01.02-15	6	6
RAI 500 — 06.02.01.02-16	7	7
RAI 500 — 06.02.01.02-17	8	8

A complete answer is not provided for the 7 questions. The schedule for technically correct and complete responses to these questions is provided below.

Question #	Response Date
RAI 500 — 06.02.01.02-11	February 29, 2012
RAI 500 — 06.02.01.02-12	February 29, 2012
RAI 500 — 06.02.01.02-13	February 29, 2012
RAI 500 — 06.02.01.02-14	February 29, 2012
RAI 500 — 06.02.01.02-15	February 29, 2012
RAI 500 — 06.02.01.02-16	February 29, 2012
RAI 500 — 06.02.01.02-17	February 29, 2012

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Wednesday, August 31, 2011 11:42 AM
To: ZZ-DL-A-USEPR-DL
Cc: Peng, Shie-Jeng; McKirgan, John; Carneal, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 500 (5944), FSAR Ch. 6

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on July 21, 2011, and discussed with your staff on July 27 and August 31, 2011. Draft RAI Questions 06.02.01.02-11, 06.02.01.02-12, 06.02.01.02-13, 06.02.01.02-14, and 6.02.01.02-15 have been modified as a result of those discussions. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 3738

Mail Envelope Properties (2FBE1051AEB2E748A0F98DF9EEE5A5D4AE8E27)

Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No. 500 (5944), FSAR Ch. 6, Questions 6.2.1.2-11 through 6.2.1.2-17
Sent Date: 2/10/2012 4:59:29 PM
Received Date: 2/10/2012 5:00:14 PM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

Recipients:
"BENNETT Kathy (AREVA)" <Kathy.Bennett@areva.com>
Tracking Status: None
"CRIBB Arnie (EXTERNAL AREVA)" <arnie.cribb.ext@areva.com>
Tracking Status: None
"DELANO Karen (AREVA)" <Karen.Delano@areva.com>
Tracking Status: None
"HATHCOCK Phillip (AREVA)" <Phillip.Hathcock@areva.com>
Tracking Status: None
"ROMINE Judy (AREVA)" <Judy.Romine@areva.com>
Tracking Status: None
"RYAN Tom (AREVA)" <Tom.Ryan@areva.com>
Tracking Status: None
"GUCWA Len (EXTERNAL AREVA)" <Len.Gucwa.ext@areva.com>
Tracking Status: None
"BALLARD Bob (AREVA)" <Robert.Ballard@areva.com>
Tracking Status: None
"WILLIAMSON Rick (AREVA)" <Rick.Williamson@areva.com>
Tracking Status: None
"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: auscharmx02.adom.ad.corp

Files	**Size**	**Date & Time**
MESSAGE	3766	2/10/2012 5:00:14 PM
RAI 500 Questions 06.02.01.02-11 through 06.02.01.02-17 Response US EPR DC - DRAFT.pdf	555047	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Response to

Request for Additional Information No. 500(5944), Revision 0,
Questions 06.02.01.02-11 through 06.02.01.02-17

8/31/2011

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 06.02.01.02 - Subcompartment Analysis
Application Section: 6.2.1.2

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects)
(SPCV)

Question 06.02.01.02-11:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011 regarding Calculation 32-9067227-003, "Bounding High Energy Lines in Reactor Building." In Sec. 2.2.5, it describes that the operating pressure and temperature used for the calculation of mass and energy release from Main Steam and emergency feedwater are based on hot zero power condition. Justify this hot zero power condition to be used to calculate the mass and energy release.

Response to Question 06.02.01.02-11:

The mass and energy release for the main steam and emergency feedwater systems are based on hot zero power because the operating conditions yield a higher break energy discharge than that with full power. High steam pressure at lower power is the main reason for the higher break energy discharge.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-12:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011 regarding Calculation 32-9067227-003, “Bounding High Energy Lines in Reactor Building." In Sec. 2.3.1, it states that the critical flow is calculated based on the GOTHIC technical manual Appendix A. The pressure considered in Appendix A is in the range of 1 and 3000 psia. However, the stagnation pressure listed in the high energy lines can be higher than 3000 psia. Explain how the critical flow is calculated for the case with pressure higher than 3000 psia. Justify the calculation method applied for the case being beyond range to be conservative.

Response to Question 06.02.01.02-12:

The data in the critical flow tables used for this analysis consist of a discrete set of points. Extrapolation is needed to determine the mass flux at intermediate points or outside the range of data. This is done using a cubic spline extrapolation method, which provides a smooth fit to a discrete set of data. This method is described in detail in Appendix B of Calculation 32-9067227-003, which has been made available for the NRC Staff to audit.

There are several high energy lines which have a listed pressure above 3000 psia. These high pressures were all based on design conditions of the pipes and not based on operating conditions. Using the design conditions to calculate the critical break flow adds considerable conservatism to the mass and energy release values. The lines listed above 3000 psia are only 2 inches in nominal size, and, in each of the rooms containing these lines, there is a larger high energy line yielding significantly more break energy discharge used for the room pressurization analysis.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-13:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011. As described in Calc 32-7004322-000, “Subcompartment Pressurization of Steam Generator Rooms,” the mass and energy release from line LAB90BR005 break in room UJA23008 termed as Modified Feedwater Line Break Mass and Energy, is based on the CRAFT2 computer model calculation. In that calculation, it models the pressure loss in pump and long pipe on the steam generator side of the break realistically since the frictional effects imposed by this section of pipe play important roles on the mass and energy release (see Calc 32-7004322-000). In the Area of Review subsection of SRP Section 6.2.1.2, it also specifies (3rd bullet) that the analytical procedure used to determine the loss coefficients should be reviewed. Provide the total loss coefficient from steam generator through pump and long pipe to the break. Since the total loss will affect the critical flow significantly, it should be determined and provided as a basis for the demonstration of any further application (see below) of the calculated mass release to be conservative.

The same Modified Feedwater Line Break Mass and Energy has been applied to a few pressurization calculations for compartments, e.g. UJA23013, UJA23014, UJA23015 and UJA23016 (Calc 32-7003808-002) as based on the consideration of boundedness of the operating condition. However, it is not clear if the total loss coefficient used in the CRAFT2 calculation as provided in the above question will bound the total loss coefficient for each compartment case as identified. Provide the total loss coefficient for each above mentioned compartment’s pressurization and demonstrate the appropriateness for the application of Modified Feedwater Line Break Mass and Energy to these compartments in terms of the total loss coefficient.

Response to Question 06.02.01.02-13:

A sensitivity study of a break in the main feed line was performed using the RELAP5/MOD2/B&W computer code in order to assess the effect of pipe form losses and frictional losses on break flow rate and subcompartment pressure. The study consisted of two scenarios. In one scenario, pipe form losses and the frictional losses were modeled. In the second scenario both the pipe form losses and the frictional losses were zero. The RELAP5/MOD2/B&W model used as the base for this sensitivity study is the main steam line break (MSLB) model, which was previously reviewed by the NRC.

A comparison of the integrated break flow for both scenarios was performed at a transient time of one second. This time was chosen for the comparison because the subcompartment analyses using the main feedwater CRAFT2 data was analyzed for one second. The comparison demonstrated that the maximum effect of piping form losses and frictional losses is a 2.9 percent higher integrated break flow.

The effect of the increase in flow on peak pressure was calculated with the GOTHIC computer code. The maximum subcompartment pressure for a room analyzed with a MFW break was 25.95 psia in Elevation +64ft Room 6 (formerly referred to as UJA29008). The 2.9 percent break flow increase was applied to the CRAFT2 break mass flow data for this room, and the peak pressure was calculated using GOTHIC. It should be noted that applying the 2.9 percent increase to the entire break flow is very conservative, as the original CRAFT2 data represented a double-ended break, and the loss coefficients and frictional losses should only be applied to one side of the break.

The 2.9 percent greater flow resulted in a peak pressure in Elevation +64ft Room 16 of 26.33 psia, which is a 0.38 psi increase over the original case. From the results, it is demonstrated that even the most conservative pipe loss coefficients and frictional losses of zero, yield an insignificant change in room pressure. It is therefore appropriate to apply the same mass and energy release for a main feedwater line break in several different subcompartments.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-14:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011. In Appendix G of Calc 32-7003667-002, "Subcompartment Analysis at +5 ft Elevation for CVCS and FPPS Rooms," the mass and energy release from lines KBA10BR002, KBA10BR004, and KBA34BR012, are calculated by a detailed modeling of CVCS piping and heat exchanger with RELAP. In the Area of Review subsection of SRP Section 6.2.1.2, it specifies (3rd bullet) that the analytical procedure used to determine the loss coefficients should be reviewed. Provide the total loss coefficient from water source through elbows and pipe or heat exchanger to the break. Since the total loss will affect the critical flow significantly, it should be determined and provided as a basis for the demonstration of any further application (see below) of the calculated mass release to be conservative.

The calculated line beak mass and energy for these lines have been applied to a few pressurization calculations for compartments, e.g. UJA11002, UJA11022, UJA11023, UJA11024 and UJA07029 (Calc 32-7003200-002 and 32-7003667-002). However, it is not clear if the total loss coefficients used in these RELAP calculations have bounded the total loss coefficient for each compartment case as identified. Specifically, the compartment UJA11022 does not actually contain the line KBA34BR012 but the RELAP-calculated line break mass and energy for KBA34BR012 is applied to the pressurization calculation of compartment UJA11022. Similarly, the compartment UJA11024 does not actually contain the line KBA10BR002 but the RELAP-calculated line break mass and energy for KBA10BR002 is applied to the pressurization calculation of compartment UJA11024. The pressurization calculation of compartment UJA11023 applies the RELAP-calculated line break mass and energy for KBA10BR002 and KBA10BR004 without knowing if the total loss coefficient to the UJA11023's break is bounded by those of KBA10BR002 and KBA10BR004 as modeled with RELAP. Provide the total loss coefficient for each above mentioned compartment's pressurization and demonstrate the appropriateness for the application of RELAP-calculated line break mass and energy in terms of the total loss coefficient.

Response to Question 06.02.01.02-14:

The mass and energy release from lines in the Chemical and Volume Controls System (CVCS) were represented by three break locations. KBA10BR002 is a letdown line upstream of the regenerative heat exchanger, KBA10BR004 is a letdown line downstream of the regenerative heat exchanger, and KBA34BR012 is a charging line downstream of the heat exchanger. A steady state verification of the model was performed to ensure that both the letdown and charging system performed as designed.

The primary source of high energy fluid for the letdown lines is from the upstream Reactor Coolant System (RCS) side. A value of 1.76 was used as the total loss coefficient from the RCS to the break locations. A value of 3.6 was used as the total loss coefficient of the downstream side of the regenerative heat exchanger, which consists of the high pressure coolers and associated piping.

The RCS side of the charging system only briefly allows flow as the isolation check valves close. A value of 0.912 was used for the total loss coefficient between the RCS and the break location for line KBA34BR012. All losses upstream of KBA34BR012 combine to a total loss coefficient of 255.67. This loss coefficient value was chosen so the flow through the heat exchanger matched the target value during the steady state verification.

For Elevation +5ft Room 20 (formerly UJA11022) the most limiting high energy line break (HELB) was line KBA10BR002; however line KBA34BR012 was also analyzed. Elevation +5ft Room 20 does not contain line KBA34BR012, but it does contain lines KBA34BR008, KBA34BR011, KBA35BR001 and KBA35BR002. Line KBA34BR012 was chosen as the representative charging line break because of its proximity to the regenerative heat exchanger. The heat exchanger side of the break is the primary source of break mass since the check valves quickly isolate the RCS side of the break. Thus, the break mass and energy for line KBA34BR012 is bounding over any line upstream because the additional loss coefficients are not applied to the primary source of break effluent.

Similarly, the bounding HELB for Elevation +5ft Room 22 (formerly UJA11024) was line KBA10BR002, even though the room does not contain the line. However, Elevation +5ft Room 22 does contain line KBA10BR003, which is located downstream of line KBA10BR002. Using the mass and energy release from line KBA10BR002 bounds line KBA10BR003 because it is located closer to the RCS, which is the primary source of break mass in this case.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-15:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011. Provide the information for choked flow model including discharge coefficient that is used in CRAFT2 and RELAP for the break mass release rate calculations.

Response to Question 06.02.01.02-15:

The RELAP5/MOD2/B&W models use Extended Henry-Fauske critical flow model for subcooled flow, and Moody critical flow model for two-phase flow. A discharge coefficient of 1.0 is applied to both types of flow.

The CRAFT2 model uses the Modified Zaloudek-Moody correlation critical flow model. A discharge coefficient of 1.0 was applied.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-16:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011. The portion of “Valve Data” in GOTHIC run output shows that all valves (or doors) are valve type 4 while the input data file shows that it should have 17 valve types. There exists inconsistency. In addition, the “Valve Performance Curve” portion seems having the data under wrong titles of “Travel” and “Loss Coefficient”. These two titles should be switched. Evaluate if the required or intended input data were used correctively and ensure the calculated results still comply with the NRC regulations.

Response to Question 06.02.01.02-16:

The valve type listed in the GOTHIC run output (SOT files) valve data does not correspond to the specific valve type number assigned in the GTH file. It instead corresponds to whether it is a valve such as a QUICK OPEN or TIME CLOSE valve. For the subcompartment analyses, all of the valves and doors are TIME OPEN valves, which is why the SOT files read type 4 for all valves and doors. The valve types assigned in the GTH file correspond to the valve area and closing times found in the SOT files, but the type numbers are not specifically written in the SOT file.

The titles for the “Valve Performance Curve” in the GOTHIC run output are incorrectly labeled. The “Travel” and “Loss Coefficient” titles should be switched. The code vendor has been made aware of this error which will be fixed in the next code release. It has been confirmed that the code is correctly reading the inputs as expected, which can be seen by comparing the valve travel data in the GOTHIC run output.

FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

Question 06.02.01.02-17:

The following question is a follow-up to the subcompartment analysis calculation audit held in Twinbrook, MD between May 25 and July 7, 2011. The opening time for the following doors as shown in Table 6.2.1-13 of Rev. 3-Interium FSAR markup (See Response to RAI No. 457 Supplement 4 on 12/21/2010) is not the same as the data specified in GOTHIC input, "Summary of Subcompartment Analysis in the Reactor Building"):

FSAR Markup GOTHIC Input

Opening Time (sec) Opening Time (sec)

+5 ft Door 4 0.75 0.50

+5 ft Door 14 0.75 0.50

+45 ft Door 2 0.75 0.50

Since the opening times as described in FSAR are not conservative as compared with those applied in the GOTHIC calculation, justify these differences to assure that the NRC regulations are complied.

In addition, the door full opening area should also be provided in the same FSAR table to reflect a complete set of door characteristics data. Otherwise, an annotation should be provided in this table to link the availability of full opening area with some other FSAR sections. A complete and consistent set of data should be maintained to assure the integrity of safety grade doors and to further assure the compliance of NRC regulations.

Response to Question 06.02.01.02-17:

The GOTHIC Service Area model included doors that used the incorrect valve stem travel curve to model the door opening time. Some of the doors included travel times that were either greater or less than the specified or calculated opening time. The affected doors are identified below in Table 06.02.01.02-17-1. Elevation +5ft Door 4 is modeled correctly with an opening time of 0.75 seconds.

Table 06.02.01.02-17-1: Service Area Model Door Changes

US EPR Door Name	GOTHIC Door/Valve #	Previously Modeled Valve Stem Travel Curve	Correct Valve Stem Travel Curve
-8ft Door 8	18D	5T (0.75s)	4T (0.5s)
+5ft Door 14	22D	4T (0.5s)	5T (0.75s)
+5ft Door 6	24D	6T (1.0s)	4T (0.5s)
+5ft Door 7	27D	6T (1.0s)	4T (0.5s)
+17ft Door 4	51D	5T (0.75s)	4T (0.5s)
+29ft Door 5	61D	6T (1.0s)	5T (0.75s)
+45ft Door 3	76D	5T (0.75s)	4T (0.5s)
+45ft Door 2	79D	4T (0.5s)	5T (0.75s)
+45ft Door 5	80D	4T (0.5s)	5T (0.75s)
+79ft Door 6	94D	4T (0.5s)	5T (0.75s)
+79ft Door 5	98D	4T (0.5s)	5T (0.75s)

The GOTHIC Service Area was updated with the correct opening times. Several rooms were reanalyzed as they credited one of the corrected doors. A list of the reanalyzed rooms can be found in Table 06.02.01.02-17-2. Only one room was found to have an increase in room pressure. The maximum value in +5ft Room 16 increased from 26.92 psia to 27.69 psia.

Table 06.02.01.02-17-2: Reanalyzed Rooms

Room Name	Original Pressure (psia)	Impact of Door Opening Times
-8ft Room 7	22.15	No change in pressure
+5ft Room 16	26.92	New pressure of 27.69 psia
+17ft Room 18	19.26	No change in pressure
+17ft Room 19	18.53	No change in pressure
+45ft Room 18	18.54	No change in pressure
+64ft Room 14	22.62	No change in pressure
+79ft Room 12	23.57	No change in pressure

U.S. EPR FSAR Tier 2, Table 6.2.1-18 will be revised to reflect the change in peak subcompartment pressure for Elevation +5ft Room 16, and will also be revised to update the subcompartment pressure for Elevation -8ft Room 2, which is a result of a prior analysis not associated with this RAI question.

FSAR Impact:

U.S. EPR FSAR, Tier 2, Table 6.2.1-18 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

Table 6.2.1-18—Subcompartment Peak HELB Pressures

06.02.01.02-17

Room Name	Room Description	HELB Pipe Name	Single-node Peak Pressure (psia)	Single-node Peak Pressure Time (s)	Subdivided node Peak Pressure (psia)
-8 ft Room 2	Access Area	LCA90BR006	27.48~~25.30~~	6.5~~2.01~~	27.46~~24.91~~
-8 ft Room 7	LCQ (SGBS) HX Room	LCQ51BR001	22.15	32.70	22.19
-8 ft Room 14	KBA12 (CVCS) HX Room	KBA12BR001	32.2	7.11	31.97
-8 ft Room 15	KBA11 (CVCS) HX Room	KBA11BR001	32.2	6.66	31.99
-8 ft Room 16	KBA (CVCS) Valve Room	KBA11BR001	32.2	9.25	32.11
-8 ft Room 17	KBA (CVCS) Valve Room	KBA10BR004	39.39	10.0	39.45
+5 ft Room 16	LCQ50 (SGBS) Tank room	LCQ40BR905	27.69~~6.92~~	0.36~~2~~	26.81~~22~~
+5 ft Room 20	KBA (CVCS) Valve Room	KBA10BR002	23.09	0.72	23.02
+5 ft Room 21	KBA (CVCS) Valve Room	KBA10BR003	21.71	0.64	21.51
+5 ft Room 22	KBA10 (CVCS) HX Room	KBA10BR003	25.49	0.82	25.55
+45 ft Room 2	JEA10 (SG) Room	LAB60BR005	22.40	0.48	22.50
+45 ft Room 3	JEA20 (SG) Room	LAB70BR005	22.30	0.52	22.55
+45 ft Room 6	JEA30 (SG) Room	LAB80BR005	22.30	0.52	22.55
+45 ft Room 7	JEA40 (SG) Room	LAB90BR005	22.60	0.48	22.08
+64 ft Room 1	JEA10 (SG) Room	LAB60BR005	25.39	0.02	23.88
+64 ft Room 2	JEA20 (SG) Room	LAB70BR005	25.23	0.02	24.32
+64 ft Room 5	JEA30 (SG) Room	LAB80BR005	25.23	0.02	+64 ft Room 2
+64 ft Room 6	JEA40 (SG) Room	LAB90BR005	25.95	0.16	25.95
+64 ft Room 14	JEF10 (RCS) Pressurizer Room	JEF10BR004	22.62	1.25	22.62
+79 ft Room 12	Pressurizer Head & Safety Relief Valves Room	JEF10BR006	23.57	1.30	23.63