

Table of Changes for CR3MP SAR Revision 3

The CR3MP SAR has been updated to create Revision 3. Each change in the SAR document from Revision 2 to Revision 3 is marked by a revision bar on the right-hand side of the page. A summary of these changes and brief reason for change is included below.

<b>Section no. of change</b>	<b>Material changed</b>	<b>Reason for change</b>
Figure 1.1-1	Removed High Density Cellular Concrete (HDCC)	Per Customer request to remove HDCC
1.2.1	Removed High Density Cellular Concrete (HDCC) and finalized quantity of lift holes with one doubling as a through-hole for venting purposes.	Per Customer request to remove HDCC, and making vent port a required feature of package during welding and grout curing for RAI 3-5
1.2.1.1	Finalize quantity of lift holes with one doubling up as a through-hole for venting purposes.	See Section 1.2.1 change
1.2.1.2	Removed HDCC and admixtures and included a target LDCC density	Per Customer request to remove HDCC and admixtures, and for finalizing the LDCC mixture
1.2.2.2	Removed HDCC and admixtures and included a target LDCC density	Per Customer request to remove HDCC and admixtures, and for finalizing the LDCC mixture
Appendix 1.3.2	Updated SAR Drawing to Revision 3	Update because of making vent port a required feature and other fabrication accommodations
2.1.1	Finalize one of the lift holes as a through-hole for venting purposes, plugged flush.	See Section 1.2.1 change and in response to RAI 2-15
2.1.2	Table number cross-reference changed to Table 2.1-2	Renumbered Table per Section 2.1.3.1 added table
2.1.3	Clarified that the weights in Table 2.1-2 are “maximum bounding” weights	In response to RAI 3-5 clarifying the LDCC mass
2.1.3.1	Added section and new Table 2.1-1 to make an assessment about actual LDCC weights.	In response to RAI 3-5 clarifying the LDCC mass

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2.1.4	Updated Table numbering and caption and column title regarding Table 2.1-3 to reflect the maximum bounding nature of these weight totals. Figure 2.1-1 updated to remove HDCC.	Per Customer request to remove HDCC and in response to RAI 3-5 clarifying the LDCC mass
2.2.1	Removed HDCC	Per Customer request to remove HDCC
2.3.1	Removed HDCC	Per Customer request to remove HDCC
2.3.2	Removed HDCC	Per Customer request to remove HDCC
2.4.5	Finalize one of the lift holes as a through-hole for venting purposes	See Section 1.2.1 change
2.4.8	Finalize one of the lift holes as a through-hole for venting purposes	See Section 1.2.1 change
2.5.2	Revised and clarified load securement narrative	In response to RAI 2-2
2.6.1	Updated Table cross-reference	As a result of Section 2.1.4 updates
2.6.1.1	Slight increase in temperatures and removed HDCC and updated text regarding nature of pressure build-up from moisture	Mesh refinement per RAI 3-4 response and per Customer request to remove HDCC and response to RAI 3-5
2.6.1.3.1	Slight decrease in pressures	In response to RAI 3-5
2.6.1.3.2	Updated Table cross-reference	As a result of Section 2.1.4 updates
2.6.3	Slight decrease in pressures	In response to RAI 3-5
2.6.7	Revised to include drop orientation assessment and Table 2.6-1	Changes in response to RAI 2-3
2.6.7.1	Moved this Section from 2.7.1.1 and expanded to include material testing information and new acceptance criteria for NCT	Changes in response to RAI 2-4 and 2-6

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2.6.7.2, 2.6.7.3, 2.6.7.4, 2.6.7.5	Revised NCT drop test summaries to reflect new simulation runs and added corner drop follow-through case	Changes in response to drop test RAIs
2.7.1	Expanded to include new acceptance criteria for HAC and reference to Section 2.6.7.1 for material	Changes in response to drop test RAIs
2.7.1.1, 2.7.1.2, 2.7.1.3	Revised HAC drop test summaries to reflect new simulation runs	Changes in response to drop test RAIs
2.7.3.1	Updated cross-reference	Changes in response to drop test RAIs
2.7.3.2	Change to damage opening area	Changes in response to drop test RAIs
2.7.4.1	Temperatures and Pressures reduced slightly	Mesh refinement per RAI 3-4 response and response to RAI 3-5
2.7.4.2	Package shell and annular LDCC bulk temperatures updated	As a result of mesh refinement per RAI 3-4 response and assessment of the temperatures shown in Figure 3.4-3
2.7.4.3	Temperatures and Pressures reduced slightly, yielding slight increase in Stress allowables and margins	As a result of mesh refinement per RAI 3-4 response and response to RAI 3-5
2.7.8	Summary of containment boundary opening adjusted	Changes in response to drop test RAIs
Appendix 2.12.1	Changes to references to accommodate drop impact analysis updates	Changes in response to drop test RAIs
Appendix 2.12.2	Changes throughout appendix to accommodate drop impact analysis updates	Changes in response to drop test RAIs
3.1.1	Removed HDCC	Per Customer request to remove HDCC

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3.1.3	Slight revision in temperatures in Tables 3.1-1 and 3.1-2 and summary cross-reference statement added to end of section	As a result of mesh refinement per RAI 3-4 response and per RAI 3-2 response
3.1.4	Table 3.1-3 identifying the CR3MP maximum pressures included	As a result of RAI 3-5 changes
3.2.1	Terminology updates and removed HDCC	Consistency and per Customer request to remove HDCC
3.2.2	Terminology updates and updated text regarding nature of pressure build-up from moisture	Consistency and because of RAI 3-5 changes
3.3	Terminology updates, removed HDCC and thermal model mesh updates to text and Figure 3.3-1	Consistency and because of mesh refinement per RAI 3-4 response
3.3.1	Added reference temperature for NCT Hot case	Because of RAI 3-5 changes
3.3.2	Slight decrease in pressures and updated text regarding nature of pressure build-up from moisture. Slight package temperature refinement in Table 3.3-2 and Figure 3.3-2	As a result of mesh refinement per RAI 3-4 response and because of RAI 3-5 changes
3.4.1, 3.4.2	Terminology updates	Consistency and clarity
3.4.2	Fire Test Conditions updated including adding Figure 3.4-2	In response to RAI 3-2
3.4.3	Figure 3.4-5 has been added and reference to new Appendix 3.5.4.2 has been added. Slight change in pressures and temperatures.	In response to RAI 3-3, 3-4 and 3-5
Appendix 3.5.1	References 12 through 16 updated	In response to thermal RAIs
Appendix 3.5.2	Changes throughout appendix to accommodate revised evaluation of pressure in the CR3MP	In response to RAI 3-1 and 3-5

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Appendix 3.5.3	Revised for detail and clarity regarding the origin and basis of the convection heat transfer correlations and any associated equations.	In response to RAI 3-6
Appendix 3.5.4	Added Mesh Sensitivity and Time Step Sensitivity evaluations	In response to RAI 3-4
Appendix 3.5.5	Inclusion of a summary of the boundary conditions for each of the analyzed thermal cases	In response to RAI 3-2
4.1.3	Finalize one of the lift holes as a through-hole for venting purposes	See Section 1.2.1 change
4.2.1	Slight increase in the number of days to 5% hydrogen concentration	In response to RAI 4-2 and removal of HDCC
4.3	Terminology updates and clarification on LDCC volume and updates per drop impact evaluation	Consistency and clarity and per Appendix 2.12.2 updates
5.1.1	Removed HDCC	Per Customer request to remove HDCC
5.1.2	Updated Dose Rates in Tables 5.1-1 and 5.1-2	Correction to a minor error in the payload modeling process resulted in slightly revised dose rates and resultant energy absorption fraction for Section 5.4.4
5.3.2	Removed HDCC	Per Customer request to remove HDCC
5.4.3	Updated Tally Maximum Dose Rates in Table 5.4-2 and summary statement	See Section 5.1.2 change
5.4.4	Removed HDCC and all admixtures from LDCC. Terminology updates and included reference to Appendix 5.5.4. Updates to Figures 5.4-1, 5.4-2 and Table 5.4-3	In response to RAI 4-2 and for consistency and clarity and per customer request to remove admixtures from LDCC and entirely remove HDCC
Appendix Section 5.5.2.2	Removed HDCC	Per Customer request to remove HDCC

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Appendix 5.5.3	Removed HDCC and all admixtures from LDCC and corrected an error in determination of Foam Concentrate mass fraction	Per customer updates regarding foam concentrate mass fraction and request to remove HDCC and admixture
Appendix 5.5.4	A detailed step-by-step calculation of all values related to the radiolytic gas generation evaluation has been added	In response to RAI 4-1
7.1.1	Revised and clarified load securement narrative	In response to customer comments
7.1.2	Finalize one of the lift holes as a through-hole for venting purposes and clarification to painted surfaces	See Section 1.2.1 change and based on customer comments
7.1.3	Revised and clarified load securement narrative	In response to customer comments
7.2.1	Revised and clarified load securement narrative	In response to customer comments
8.1.1	Removed HDCC	Per Customer request to remove HDCC
8.1.3.2	MNOP reduced slightly	As a result of RAI 3-5 incorporations
8.1.5.3	Section removed	Per Customer request to remove HDCC