

Chapter 21 From Revision 1 to Revision 2 Change List

Item	Location	Description of Change
1.	General Document	Editorial changes are not marked.
2.	S21.0, 1 st para	Deleted 1 st four and ½ lines and revised remaining sentence for clarity.
3.	S21.0, 2 nd para	Technical clarification: design of the BiMAC.
4.	S21.0, 3 rd para	Rewritten for clarity with information deleted.
5.	S21.1, 6 th para	Deleted reference to GE-NE, 2005a, ESBWR PRA has been updated.
6.	F21.1-1	Revised figure to show PCC heat exchanges as integral parts of containment boundary. Noted MCOPS not shown in updated figure.
7.	S21.2, 4 th para	Added Rev 2 PRA results for Level 1 PRA with footnote 1 explaining use of [] numbers.
8.	S21.2, 5 th para	Added Rev 2 PRA results for Level 1 and Level 2 PRA. Also, noted drywell sprays are not included in Rev 2 Level 2 PRA.
9.	S21.2, 8 th para	Corrected references to Sections 21.3-21.5 and Section 21.6. Deleted reference to GE-NE, 2005a, ESBWR PRA has been updated.
10	S21.2, 13 th para	Technical clarification: passive deluge system has been deleted with implementation of squib-actuated valves in deluge system.
11	S21.2, 20 th para	Revised reference to ROAAM review to reflect the SAT report which is listed as a Reference instead of Addendum.
12	S21.2, after F21.2-1	Added note referencing Addendum at the end of the Section.
13	S21.2, References	Added Reference 21.2.1-18 “Severe Accident Management in Support of the ESBWR Design Certification Document.
14	S21.2, end of Section	Added Addendum showing F21.2-1 with Rev 2 PRA Results compared Original PRA Results.
15	S21.3.1, 1 st para	Added Rev 2 PRA results for Level 1 PRA results for HP accidents
16	S21.3.2, 2 nd para	Corrected reference to Section 21.3.4.1
17	S21.3.4.1, 6 th para	Deleted “e.” as this paragraph was meant to be included in numbering with “d” above.
18	S21.3.4.1, 6 th para	Corrected reference to Section 21.3.4.3
19	S21.3.4.1, 8 th para	Deleted “g.” as this paragraph was meant to be included in

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		numbering with above paragraph.
20	S21.3.4.1, 8 th para	Added updated frequency and CDF percentage for SBLOCA scenario described in paragraph.
21	S21.3.4.2, 3 rd para	Corrected reference to Section 21.3.4.4
22	S21.3.4.3, end of Section	Added note referencing Addendum at the end of the Section.
23	S21.3.4.4, 1 st para	Technical clarification to refer to Section 8 of NEDO-33201 Revision 1
24	S21.3.4.4, 1 st para	Corrected reference to Figure 21.3.4.4-1
25	S21.3.4.4, 1 st para	Added discussion of updated analysis for containment pressure fragility located in DCD Appendix 19C.
26	F21.3.4.4-1	Clarified reference to Section 8 of NEDO-33201 Revision 1 as source of figure.
27	S21.3.4.5, 1 st para	Added Rev 2 PRA results for Level 1 PRA results for Class III accidents
28	S21.3.5, 7 th para	Corrected reference to Section 21.6
29	R21.3.6-22 and R21.3.6-23	New references per ROAAM review.
30	S21.3, end of section	Added Addendum 21.3.4.3 on Quantification of DCH Loads (dated July 31, 2006) – additional analysis per ROAAM review.
31	S21.4.1, 6 th para	Added Rev 2 PRA results for Level 1 PRA results for Class I sequences with low water level in lower drywell.
32	S21.4.4.2, 2 nd para	Added Rev 2 PRA results for Level 1 PRA results for Class I sequences.
33	S21.4.4.3, 4 th para	Corrected reference to Figure 21.4.4.3-2a
34	S21.4.4.4, after 3 rd para	Added note referencing Addendum at the end of the Section.
35	S21.4.4.5, 1 st para, 2 nd para and 3 rd para	Added Rev 2 PRA results for Level 1 PRA results for Class I sequences with low water level in lower drywell
36	S21.4.5, 1 st para	Added Rev 2 PRA results for Level 1 PRA results for low pressure sequences with high water level in lower drywell
37	S21.4.6, References	Added Reference 21.4.6-30 “DYNA3D Finite Element

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		Analysis of Steam Explosion Loads on a Pedestal Wall Design.
38	S21.4, end of section	Added Addendum 21.4.4.4 on Quantification of Fragility (dated December 19, 2006) – additional analysis per ROAAM review.
39	S21.5.2, 8 th para	Deleted last sentence on confirmatory testing performed by COL Applicant – BiMAC test report referenced in addendum to Section 21.5.5.
40	S21.5.2, after 8 th para	Added Addendum on ESBWR Design including Figure 21.5.2.1aa (dated May 7, 2007) – additional analysis per ROAAM review.
41	F21.5.2-1c, after figure	Added Figure 21.5.2.1ca per ROAAM review.
42	S21.5.4.3, after 13 th para	Added Addendum on Quantification of thermal loads (dated July 31, 2006) – additional analysis per ROAAM review.
43	S21.5.4.4, after figure 21.5.4.4-2	Added Addendum on Quantification of Fragility (dated July 31, 2006) – additional analysis per ROAAM review.
44	S21.5.5, after 6 th para	Added Addendum on Summary and Conclusions for BMP (dated July 31, 2006) – additional analysis per ROAAM review. Added “Further comments on mechanical loads” (dated May 7, 2007)
45	S21.5.5, after 6 th para	Added Addendum on BiMAC Testing (dated September 25, 2007) – BiMAC test report will be listed as a reference.
46	S21.5.6	Deleted Section COL Action Summary – not required with completion of BiMAC test.
47	Section 21.5 References	Added reference to NEDE-33392P: The MAC Experiments: Fine-tuning of the BiMAC Design, Proprietary Report by T. G. Theofanous
48	S21.6, 1 st para	Added discussion of CPETs and CSETs in Revision 2 Level 2 PRA.
49	S21 end of Chapter	Deleted Addendum as ROAAM Review is listed as Reference 21.2.1-18.