Tier 2 Chapter 14 Revision 3 to Revision 4 Change List

Item	Location	Description of Change
	Chapter 14	Made editorial changes in numerous locations to remove excessive spacing, correct punctuation, delete repeated words, correct misspelling, and correct grammar. Spelled out acronyms where appropriate. Changed GE to GEH where appropriate.
	Chapter 14	Changed IE to safety-related and Non IE to non-safety-related.
1	S14.2.1, 5th bullet. Global change throughout Section 14.2.	Made editorial change from "extent possible" to "extent practical.
2	S14.2.1.2, 4th bullet.	Editorial, removed the word "any" from the statement "… so that any design, manufacturing …" for clarity.
3	S14.2.1.2, last bullet.	Editorial, changed "safety equipment" to "safety-related equipment" per response to CAR 41942.
4	S14.2.1.4	Made name change from GE Energy Nuclear (GEEN) to GE-Hitachi Nuclear Energy (GEH) to reflect current naming of our organization. Made change from GEEN to GEH at all other occurrences in the document.
5	S14.2.1.4	Deleted the work "ad hoc" for clarity.
6	S14.2.2.	Make changes per the markup to move items in 14.2.9.1 into 14.2.2. Response to COL Item 14.2.9.1 and 14.2.2.
7	S14.2.2.1	Section added for additional technical clarification.
8	S14.2.2.1	Standardized wording as Startup Administration Manual and defined acronym SAM. Made changes throughout Section 14.2 using SAM for Startup Administration Manual and Startup Administrative Manual.
9	S14.2.2.1, last line.	At the end of the subsection, added a line with reference to Subsection 14.2.10 per project guidelines.
10	S14.2.2.2, last para, S14.2.6, and two in S14.2.7	Replaced "COL licensee" with "COL holder" in this subsection and where found in the document. Includes replacement of the wording "(COL) licensee's" with "(COL) holder's" on page 14.2-3.

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11	S14.2.2.2, last line. S14.2.7 and 14.2.9.	At the end of the subsection, added a line with reference to Subsection 14.2.10 per project guidelines.
12	S14.2.3 1st para.	Removed "(see compliance section 1.8)" because the list of applicable NRC references is included within this subsection.
13	S14.2.3 8th & 9th bullets	Delete bullets. Regulatory guides 1.95 and 1.108 have been withdrawn.
14	S14.2.3 10th bullet	Deleted phrase "in accordance with SRP Section 14.2." This phrase does not change the fact we use RG 1.128 for documentation preparation.
15	S14.2.3 11th bullet	Deleted bullet. Reg. Guide 1.139 was issued for comment in 1978 and is not available from NRC electronic reading room.
16	S14.2.6, 5th bullet. Made this change in many places within Section 14.2.	Editorial - Changed "shall be" to "is", "are" or "will be" as appropriate.
17	S14.2.7	Changed "should be" to "is" in two places. Deemed editorial.
18	S14.2.8.1, 2nd para. last line.	Revised sentence for clarity that test specifications will be used to verify test procedures are properly written.
19	S14.2.8.1	Deleted list of possible site-specific system that are not part of standard ESBWR design. This removes a redundancy with subsection 14.2.9. Also deleted mention of the Site Security Plan. This system is not mentioned in RG 1.68 and details are not to be released.
20	S14.2.8.1 last para.	Add bullet with "Station Water System" to list of site-specific systems. To maintain consistency with section 14.2.2. Note this now exists in 14.2.9.
21	S14.2.8.1.1 - 7th bullet	Added verification of position indication for DPV and SRV.
22	S14.2.8.1.4	Text of this subsection was erroneously changed in Rev 3 to be the same as 14.2.8.1.2. Returned Subsection 14.2.8.1.4 to Rev 2 text.
23	S14.2.8.1.5 – 1st bullet. Global change	Editorial - Changed "all combinations" to "appropriate design combinations".

Item	Location	Description of Change
	throughout Section 14.2.	
24	S14.2.8.1.6, 1st bullet., global change throughout Section 14.2	Editorial change, deleted "all" from "… reporting of all detected …" as being superfluous wording.
25	S14.2.8.1.14	Deleted "and acceptable transfer time" from 17th bullet as there is no basis for this measurement.
26	S14.2.8.1.15, last bullet	Revised the last bullet, as the Preop is not a test of the chemistry department. Revised for clarity.
27	S14.2.8.1.17, last bullet	Revised to correct fragmented sentence.
28	S14.2.8.1.19	Revised to reflect common air compressors per approved engineering design change.
29	S14.2.8.1.19, 5th bullet, also in S14.2.8.1.20.	Replaced "individual loads" with "system loads" as you cannot measure temperature and pressure at individual loads, restrict test to air delivery.
30	S14.2.8.1.23	Removed this subsection as an approved engineering design change is removing the HWS.
31	S14.2.8.1.24, 6th bullet	Revised the bullet to state only verify proper operation of the chiller and added a paragraph at end of the bullets that heat removal capacity was to be confirmed in the startup phase when normal heat loads were present.
32	S14.2.8.1.32.	In response to RAI 14.2-63. Revise description of the Bypass Leakage Rate Test to be consistent with the description contained in Chapter 6.
33	S14.2.8.1.32, 3rd bullet.	Deleted the 3rd bullet which read "Proper functioning of vacuum breaker open, and" as this verification is covered by the 1st bullet. There are now only three bullets.
34	S14.2.8.1.35, new last bullet.	Technical addition to discuss verification of ventilation systems ability to maintain hydrogen level within acceptable level. Per RG 1.128.
35	S14.2.8.1.37, 11th bullet.	Changed "Nonsafety-related" to "nonsafety-related" for conformity.
36	S14.2.8.1.39, 5th bullet	Fire Protection testing should not include sprinkler deluge testing where equipment damage would result. Added

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		"Where practical" to bullet.
37	S14.2.8.1.42, 4th para.	Made editorial change to paragraph for clarity.
38	S14.2.8.1.45, last bullet	Removed last bullet because a regulatory or technical basis for the requested measurements could not be located.
39	S14.2.8.1.47	May not be possible for vacuum pumps to establish vacuum within design time frame during preop phase. Added qualifier "if condenser integrity and auxiliary systems permit" to the subsection.
40	S14.2.8.1.50 and S14.2.8.1.51	Circulating Water System test abstract discusses NPSH, which is not appropriate for submerged pumps. Changed "NPSH" to "acceptable pump suction".
41	S14.2.8.1.53, 1st para and S14.2.8.1.53.	To be consistent with Chapter 10 wording removed "Combined Intercept Valves or CIV" and replaced with "intermediate stop and intercept valves".
42	S14.2.8.1.53	Added new first bullet for a statement to verify proper functioning of instrumentation and alarms. .
43	S14.2.8.1.58	Cannot verify operation of MSR drain pathways in preop. Changed "operation" to "sloping" which can be verified in preop phase.
44	S14.2.8.1.59	Response to RAI 14.2-53 S01. ESBWR turbine does not have mechanical overspeed trip device.
45	S14.2.8.1.63	Deleted the 7th bullet as this is a valve lineup to be run as a prerequisite.
46	S14.2.8.2.10, 1st para.	Editorial – Changed "anticipated operational occurrences (AOOs)" to "Anticipated Operational Occurrence (AOO)" to be consistent with the acronym list.
47	S14.2.8.2.10, 4th and 5th para.	Editorial - Removed the two occurrences where anticipated operational occurrence(s) was spelled out and (AOO) was present, replaced with just the acronym AOO.
48	S14.2.8.2.17, 1st para.	Editorial changed "all modes of operation" to "all designed modes of operation" for clarity. Similar to change No. 22.
49	S14.2.9	Delete original paragraph 14.2.9.1 and moved contents to 14.2.2.
50	S14.2.9	Change title of this section from "COL Information" to

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		"Site-Specific Preoperational and Startup Tests" and add in two subsections for Site-specific Preoperational Tests and Site-specific Startup Tests.
51	S14.2.9	Added a line "The COL applicant will define any required site specific preoperational and startup testing" and a reference to Subsection 14.2.10 for COL information.
52	S14.2.10	Change title to "COL Information" and added in the four COL responsibilities per the Writer's Guide.
53	S14.2.11	New section for "References" caused by addition of new 14.2.9 for site-specific systems.
54	T14.2-1,	Technical change in response to RAI 4.4-7, 8 and 9. Removed all mention of the Loose Parts Monitoring System (LPMS) from this table. Note: Table will not show a change bar for a complete row deletion.
55	T14.2-1	Editorial, changed spelling of "Liquid RadWaste" to Liquid Radwaste".
56	S14.3, title 7 & 1st para	Changed the title to "Inspections, Tests, Analyses And Acceptance Criteria," for consistency with NRC documents. (No technical change.)
57	S14.3, 2nd para, 1st sent	Deleted "directly" to clarify the intent of the sentence. (No technical change.)
58	S14.3, last bullet	Clarification; replaced "Appendices listing" with "A list of." (No technical change.)
59	S14.3.1, last para	Deleted, because not all the listed examples are used in Tier 1.
60	S14.3.2, 1st para, 4th sent	Deleted "(i.e., are not important to safety)," because important to safety is no longer defined in Tier 1.
61	S14.3.2, 1st para, last sent	Simplified for clarity. (No technical change.)
62	S14.3.2.1, Item (2)b	Replaced "important to safety (as defined in Tier 1 Subsection 1.2.1)" with "classified as safety-related," because important to safety is no longer defined in Tier 1.
63	S14.3.2.1, Item (3), 1st line	Clarified by replacing "only the import to safety" with "Mostly safety-related." (No technical change.)
64	S14.3.2.1, Item (7), last two sent.	Deleted, to be consistent with the fuel-related changes to Tier 1.

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65	S14.3.2.1, Item (8), next to last 2 sent.	Combined and clarified to read "For example, if Tier 1 specifies that the safety valves are of the direct-acting type, then this precludes the use of reverse acting valves controlled by pilot valves as safety valves." This is consistent with valve description changes in Section 5.2. (No technical change.)
66	S14.3.2.1, Selection Methodology, 9th bullet	Editorial change to delete "important".
67	S14.3.2.1, Selection Methodology, 10th bullet	Deleted the bullet, because EQ is addressed separately within Tier 1.
68	S14.3.2.1, Selection Methodology, next to last bullet	Changed "Motor-operated valves" to "Valves" for completeness
69	S14.3.2.2, Item (1), 2nd para	Simplified to just read "Each system that has a design description, which addresses some design aspect required for plant safety, has an ITAAC table." (No technical change.)
70	S14.3.2.2, Item (4), last two sent.	Deleted, to be consistent with the fuel-related changes to Tier 1.
71	S14.3.3.2, 1st & 3rd para's	Edited for clarity. (No technical change.)
72	S14.3.3.3, 1st para	Included "Technical Support Center (TSC), Emergency Operations Facility (EOF), and Local Control Stations (LCSs) with safety-related functions or as defined by HFE task analysis"
73	S14.3.3.4, last line	Changed to address the site-specific radiation zones and their supporting calculations, consistent with Tier 1 Section 3.4 changes associated with RAIs 14.3-134 and -137.
74	New S14.3.3.6	New subsection added to address the topic (Design Reliability Assurance Program) in Tier 1 Section 3.6.
75	New S14.3.3.7	New subsection added to address the topic (post accident monitoring instrumentation) in Tier 1 Section 3.7.
76	New S14.3.3.8	New subsection added to address the topic (Environmental Qualification of Mechanical and

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		Electrical Equipment) in Tier 1 Section 3.8.
77	S14.3.4, 1st para, 4th sent	Changed the "(e.g, ...)" statement to read "(e.g., the long-term source of water for the PCCS pools)" because offsite power is not needed for safety, and thus, a better example is provided.
78	S14.3.4, last para	Deleted the last two sentences and clarified the 1st sentence, because is no longer valid.
79	S14.3.6, 1st bullet	Editorial change: deleted ", important"
80	S14.3.7.2, multiple locations	Editorial change: deleted "essential" from before values
81	S14.3.7.2, last bullet	Changed the statement to be in present tense. (No technical change.)
82	S14.3.7.3, Item (1) b, last para	Clarified by changing the last sentence to read "However, some ITAAC are included for functions/values specifically modeled in the AOO safety analyses, specific fuel protection and cooling functional criteria, and/or active/automatic offsite release prevention functions."
83	S14.3.7.3, Item (2)n	Deleted, because post accident monitoring is addressed in new Subsection 14.3.3.7.
84	S14.3.7.3, Item (3)	Made various editorial changes to simplify and clarify. (No technical change.)
85	S14.3.7.3, Item (3)b	Clarified by adding specific references to NTNSS and the NRC regulations.
86	New S14.3.8	Added a new subsection to address "14.3.8 Overall ITAAC Content For Combined License Applications" (COL item)
87	New S14.3.9	Added a new subsection to address "Site-Specific ITAAC" for COLAs
88	New S14.3.10	Added a new subsection to address "COL Information"
89	New S14.3.11	Added a "Reference" subsection to provide a reference to a NEI document, referenced in S14.3.8.
90	T14.3-1	For completeness and consistency with the text, "Nonsafety-related systems that have safety-related components" and "Nonsafety-related systems used to mitigate AOOs" have been added