

ITEMS TO DISCUSS
November 17, 2015 Telecom

RAI 7926

Reviewer: Hansing

Question 3.2.1-4

Not all of the changes requested in the question were made to Table 3.2-1.

Question 3.2.1-6

In Revision 0 of the DCD, Page 3.2-29 shows the letdown heat exchanger as Quality Group C, seismic Category I for the shell side. The piping that connects to this heat exchanger is classified as seismic Category II, Quality Group D (as discussed in the RAI question). Page 9.2-149 shows the flow diagram and includes both the heat exchanger and piping, but no class break. Rationale was provided for why the piping should be seismic Category II, Quality Group D, but no explanation was provided for the inconsistency with the heat exchanger or the lack of a class break.

RAI 7994

Reviewer: Scarbrough

Question 3.9.6-7

In item (2), the reference to alternatives is not necessary because this list of items applies to relief requests.

In item (3), a period should be added to the end of the sentence.

Question 3.9.6-9

In RAI 69-7994, Question 3.9.6-9, the NRC staff requested that the APR1400 design certification applicant modify APR1400 DCD Tier 2, Table 3.9-13, "Inservice Testing of Safety-Related Pumps and Valves," consistent with the NRC regulations in 10 CFR 50.55a, and guidance for inservice testing (IST) programs in NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

In its response dated September 10, 2015, KHNP stated that a review of Table 3.9-13 was performed to correct all discrepancies noted and to keep consistency with the requirements in the ASME *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code). KHNP stated that the COL applicant will provide the full description of the IST program in accordance with COL Item 3.9(4), and Table 3.9-13 will be finalized at that time. KHNP did not consider it necessary or meaningful to modify Table 3.9-13 at this time during the design certification stage to include all of the applicable OM Code requirements.

The following are comments on the planned markup of Table 3.9-13 provided by KHNP in its RAI response:

1. With respect to pumps, Table 3.9-13 should include the pump identification number, a description of the pump function, and the ASME OM Code Group (Group A or B pumps) for pumps within the scope of the IST program for the APR1400 reactor.

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2. With respect to valves, Table 3.9-13 should specify the safety position (open, closed, or open/closed) of each valve within the scope of the IST program for the APR1400 reactor.
3. With respect to relief valves and vacuum breakers, Table 3.9-13 should specify relief valves and vacuum breakers as active OM Category A/C valves with OM Code Appendix I testing (RVT) and valve leakage rate test (LT) where they have an allowable leakage requirement. Where relief valves and vacuum breakers do not have an allowable leakage requirement, Table 3.9-13 should specify them as active OM Category C valves with OM Code Appendix I testing (RVT). In addition, Table 3.9-13 should specify the valve position verification testing requirement (LPV) where the relief valve or vacuum breaker will have remote position indication capability. See, for example, RG-1421, SI-166, SI-169, SI-179, SI-187, SI-188, SI-189, SI-211, SI-221, SI-231, SI-241, SI-285, SI-286, SI-287, SI-289, SI-292, SI-469, SI-473, SI-474, CS-1005, CS-1021, CS-1022, CS-1023, CS-1024, IW-1003, CC-1031, CC-1032, CC-1033, CC-1034, CC-1035, CC-1036, CC-1111, CC-1112, CC-1515, CC-1547, CC-1575, CC-1215, CC-1569, CC-1107, CC-1269, CC-1516, CC-1548, CC-1247, CC-1248, CC-1270, CC-1576, CC-1216, CC-1570, CC-1108, SX-1041, SX-1042, SX-1043, SX-1044, SX-1045, SX-1046, FC-1013, FC-1014, MS-1315, MS-1316, MS-1317, MS-1318, MS-1319, and MS-1320.
4. With respect to manual valves, Table 3.9-13 should specify the valve position verification testing requirement (LPV) where the manual valve has remote position indication capability. See, for example, SD-1113, SD-1114, SI-293, CS-1013, FC-1143, and FC-1144.
5. With respect to check valves, Table 3.9-13 should clarify the following aspects:
 - a. The valve stroke exercise requirement (S) and reverse flow exercise requirement (RF) should be specified for each check valve. See, for example, CV-363, CV-747, CV-835, FW-1035, FW-1036, FW-1037, FW-1039, FW-1040, FW-1042, FW-1043, FW-1044, FW-1046, and FW-1047.
 - b. The OM Code category (Category A/C for check valves with an allowable leakage requirement and Category C for check valves without an allowable leakage requirement) should be clarified for AF-1007A/B, AF-1008A/B, FW-1039, FW-1040, FW-1046, and FW-1047. These valves are listed as Category C, but are specified as having a valve leakage rate test requirement (LT).
 - c. Table 3.9-13 should specify the valve position verification testing requirement (LPV) where a check valve will have remote position indication capability
6. With respect to power-operated valves (POVs), Table 3.9-13 should clarify the following aspects:
 - a. Note b on page 3.9-224 should clarify the motive power of a "piston actuator."
 - b. The valve stroke time test requirement (MT) should be included in the list of tests for SI-619, SI-622, SI-629, SI-632, SI-639, SI-642, SI-649, SI-661, and SI-670.
 - c. The fail-safe test requirement (FS) should be specified for SD-0006 (air diaphragm actuator); AF-0036, AF-0037, and AF-0038 (solenoid actuators); and SA-0001 (piston actuator), but does not need to be specified for SD-0007 (electric actuator).
 - d. The OM Code category (Category A for a POV with an allowable leakage requirement and Category B for a POV without an allowable leakage requirement) should be clarified for AF-0043,

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AF-0044, AF-0045, AF-0046, FW-0113, FW-0134, MS-011, MS-012, MS-106, MS-107, and MS-108. These valves are listed as Category B, but are specified as having a valve leakage rate test requirement (LT).

7. The RAI response does not appear to address the RAI request that the Note at the end of paragraph (h) on page 3.9-227 justify pump curve testing to assess pump degradation with clarification of its reference to the provisions in Subsection 3.9.6.1.
8. The RAI response does not appear to address the RAI request that Paragraph (i) on page 3.9-227, which references Figure 3.9-15, "Typical Inservice Testing Connections," indicate the full set of IST program tests for pumps (such as Group A, Group B, and Comprehensive Tests) and valves (such as flow tests to periodically verify design-basis capability).
9. The modification to Note (23) on page 3.9-234 should be clarified regarding the position of the valves CV-362 and CV-363 during normal operation. For example, the word "close" could be replaced with "in the closed position" in the second sentence of the new text.
10. Table 3.9-13 should be updated for all pumps and valves within the scope of the APR1400 IST program consistent with the above comments.

RAI 8020

Reviewer: Hansing

Question 03.02.02.02-3

1. The response to RAI 72-8020 03.02.02-3 is still not consistent with RG 1.26. Points of clarification are below:

- a) Water-, Steam-, and Radioactive-Waste-Containing Components should be used (consistent with the title of RG 1.26) instead of "pressure-retaining components"
- b) The wording for Quality Group A is incorrect. The wording used (specifically the exclusions) actually applies to Quality Group B. Consider viewing the draft of Revision 5 ([ML14356A249](#)) which, though not yet final, provides additional clarification on the definition of Quality Group A.
- c) The wording for Quality Group C has a missing footnote in the quotation of RG 1.26 as well as missing specific constraints for subpoint d, which specifies how the 0.5 rem is conservatively calculated.

Question 03.02.02-5

1. The response to RAI 72-8020 03.02.02-5 removed references to "motors" in the context of AFW (3.2-17), Diesel Fuel Oil Transfer pumps (3.2-45), and Feedwater (3.2-54). What was the rationale for this removal from Table 3.2-1? Is the presumption that all subcomponents of a pump are designed to the same seismic Category?

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2. The response to RAI 72-8020 03.02.02-5 introduced additional typographical errors, some of which are listed below:

- Page 2 of table: AFW-V2102 A/B could not be located. Perhaps V2012A/B was intended?
- Page 5 of table: It is understood that the change from V2642 to V2641 was because of a typo (2 instances of V2642). Please clarify where this new V2641 is.
- Page 9 of table: "S" for Feedwater Heaters Appendix B applicability – this is not defined.
- Page 19 of table: B31.1 2007 listed instead of 2010.
- Page 55 of table: POSRV upstream/downstream may be reversed, please confirm. Also, where is this class break shown in the P&IDs?
- Page 59 of table: Is the "connecting point" intended to be V541 and V543? The wording is unclear.
- Page 82 of table: Note 4 is not referenced for items j, m, and n under number 109 for the Appendix B and Seismic Category columns.

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RAI 8021

Reviewer: Hansing

Question 14.03.03

The response to RAI 78-8021 14.03.03 failed to address the point of confusion. The revised statement is: "Tier 1 item numbers are not part of the Tier 1 material." This sentence refers to these item numbers as part of Tier 1, and they are contained within a collection of material called "Tier 1," therefore, they are part of Tier 1. Stating otherwise is not clear. The staff's focus is on traceability of components throughout the document, which has been achieved in the current numbering system.