

List of Audit Findings

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
Item No.	Document #	Comment	Individual and Org./ Date	*Yes or No	Resolution	
1	N0-GB00002	The list of design specifications in our audit plan indicates that Specification N0-GB00002 (Piping) includes valves while this design specification on page 16 indicates that valves are outside of its scope. What is the scope of N0-GB00002 regarding valves?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Certainly the list of design specifications in the audit plan indicates that Specification N0-GB00002 (Piping) includes valves, but the valves and orifice are out of scope regarding design specification as shown in the letter "Updated Design Completion Plan for US-APWR Piping Systems and Components" (UAP-HF-13220). MHI believes that it was agreed by NRC that the valves are out of scope of the design specification audit. Therefore, there is no item regarding valves in Specification N0-GB00002.	Resolved/ Closed
		The audit plan needs to be clarified. The scope of the audit does include valve design specifications and the NRC staff will review the valve procurement specifications.	NRC / Thomas Scarbrough 02/04/2014	No	N/A	
2	N0-AA32060	Specification N0-AA32060 (EQ Program) is not always clear on the scope of Equipment Qualification (for example, see the definition of Equipment Qualification on page 1). Does Equipment Qualification include environmental, seismic, and functional qualification?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: <u>Yes</u> , it does. Equipment Qualification of the US-APWR includes environmental qualification, seismic qualification and functional qualification. Section 2.0, "Scope," of N0-AA32060 also describes as follows: <i>The Equipment Qualification Program addresses:</i> - <i>Equipment important to safety within the scope described in DCD Section 3.11, Introduction, that is qualified by the <u>Environmental Qualification Program</u></i> - <i><u>Active mechanical components required to be functionally qualified</u></i> - <i>Mechanical and electrical equipment with special <u>seismic qualification</u> requirements such as seismic categories I and II</i>	Confirmatory
		2. The individual provisions in Specification N0-AA32060 on the Equipment Qualification Program	NRC 02/06/2014	Yes	MHI - 02/12/2014: The current US-APWR Equipment Qualification,	

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		should be verified to ensure that the scope of Equipment Qualification includes seismic, environmental, and functional qualification.			documented in N0-AA32060, already includes environmental qualification, seismic qualification and functional qualification. The scope will be clarified in the Definition section and Section 2.0. "Scope," in N0-AA32060. This modification will be made after the US-APWR project resumes normal activities. Complete by: future follow-up audit	
3	N0-AA32060	3. Specification N0-AA32060 on page 93 includes Section 10.3.5, "Active Valves." Is there a similar section on Pumps?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: There is no similar section on Pumps. However, Subsection 10.3.2, "Mechanical Equipment," of N0-AA32060 includes the descriptions for pumps as the mechanical equipment.	Resolved/ Closed
4	N0-AA32060	4. Specification N0-AA32060 on page 142 includes sample data packages in Attachment D that address only seismic and environmental qualification. Where is functional qualification addressed in the data packages?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: EQDP (data package in Attachment D) Part 1 of N0-AA32060 defines safety function of equipment to be equipment-qualified. This includes the function to be functionally qualified. In addition, EQDP Part 3 shows requirements of environmental qualification and seismic qualification. To be qualified by Part 3 means that the safety function described in Part1 is qualified. Therefore, the EQDP includes functional qualification. Table F-1, "Road Map for US-APWR Equipment Qualification Program (Sheet 6 of 7)" of N0-AA32060 also shows that Attachment D of EQDP includes Functional Qualification.	Confirmatory
		4. Attachment D in Specification N0-AA32060 should be clarified to include functional qualification in addition to seismic and environmental qualification.	NRC 02/06/2014	Yes	MHI - 02/12/2014: The current Attachment D, "Description of Equipment Qualification Data Package Template for MHI US-APWR Equipment Qualification Program", of US-APWR Equipment Qualification, documented in N0-AA32060, includes not only environmental qualification and seismic qualification but also functional	

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					qualification. The descriptions of the scope will be clarified in Attachment D1, D2, and D3 of N0-AA32060. The modification will be made after the US-APWR project resumes normal activities. Complete by: future follow-up audit	
5	N0-GC00103	5. Specification N0-GC00103 (Valve EQ) on page 8 references QME-1-2007 and RG 1.100 for qualification of valve assemblies. Does this also include the valve actuator?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: <u>Yes</u> . The valve actuator is included in valve assembly. The following definition is applied to valve assemblies in QME-1-2007, QV-4000. Valve assembly: a valve-actuator combination, including those functional accessories that are directly mounted thereon.	Resolved/ Closed
6	N0-GC00026	6. Specification N0-GC00026 (MOV) on page 13 references the EPRI MOV PPM and NRC safety evaluations. Does the specification indicate that the EPRI PPM only addresses valve operating requirements with the user responsible for actuator output?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: <u>Yes</u> . The EPRI PPM only addresses valve operating requirements with the user responsible for actuator output. The PPM to predict required thrust or torque for a valve can be used as a "test-based methodology" to satisfy the requirements of QME-1-2007.	Confirmatory
		6. Specification N0-GC00026 on MOVs should be clarified to indicate that the user is responsible for actuator output capability qualification where the EPRI MOV PPM is used in the qualification process.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will address the comment by revising the specification N0-GC00026 by the time a future follow-up audit is held. Complete by: future follow-up audit	
7	N0-GC00026 (MOV), N0-GC00015 (AOV), and N0-GC00065 (check valves)	7. Why are QME-1-2007 and RG 1.100 (Revision 3) not included in the list of references in N0-GC00026 (MOV), N0-GC00015 (AOV), and N0-GC00065 (check valves)?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: N0-GC00103, "Valve Equipment Qualification Specification," references QME-1-2007 and RG 1.100 (Revision 3), and N0-GC00026 (MOV), N0-GC00015 (AOV), and N0-GC00065 (Check Valves) refer N0-GC00103 as the requirements for the qualification of active mechanical equipment.	Resolved/ Closed
8	N0-GC00026 (MOV)	8. Does Specification N0-GC00026 (MOV) require valves to be within the scope of the Joint Owners'	NRC / Thomas Scarbrough	Yes	MHI - 02/04/2014: <u>Yes</u> . N0-GC00026 (MOV) requires valves to be within the	Confirmatory

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		Group Program on MOV Periodic Verification?	02/03/2014		scope of the Joint Owners' Group Program on MOV Periodic Verification. N0-GC00103 specifies requirements of equipment qualification and N0-GC00026 (MOV) refers to it.	
		In response to Question 8 in Main List of Audit Questions, it was stated that N0-GC00026 requires valves to be within the scope of the Joint Owners' Group Program on MOV Periodic Verification. Where is this requirement in N0-GC00026?	NRC / Thomas Scarbrough 02/05/2014	Yes	<p>MHI - 02/06/2014: Basis for JOG MOV Periodic Verification (PV) Program is NRC Generic Letter 96-05: Periodic Verification of the Design Basis Capability of Safety Related Motor-Operated Valves. It is referred in N0-GC00026, 2.5.2- B. JOG MOV Periodic Verification (PV) Program will be implemented by Licensees as follows:</p> <ul style="list-style-type: none"> •Licensees develop programs to address potential margin degradation/aging issues by periodically verifying the capability of safety-related MOVs to perform their safety functions. •Licensees should address potential degradation that can result in (1) the increase in thrust or torque requirements to operate the valves and (2) the decrease in the output capability of the motor actuator. <p>Therefore this specification is specified as design requirements in the following sections:</p> <p>3.2.6.6: Stems shall be instrumented to allow monitoring of stem thrust and torque; 3.2.6.8: The valve yoke shall have sufficient access,..., to be able to mount temporary thrust/torque sensors....; 3.2.6.9: Sensors that are permanently installed shall be supplied; 3.2.6.11: Stem strain gauges shall be located; 3.2.9.1:The valves shall operate reliably, and without excessive wear, degradation, or maintenance under the service conditions.....; 3.2.9.7: Valves shall have a</p>	

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					hooking mechanism.....; 7.8: Diagnostic Testing....; Attachment-3: Valves shall have an operating margin....;	
		8. Specification N0-GC00026 on MOVs should be clarified as to whether procured valves must be within the scope of the Joint Owners' Group Program on MOV Periodic Verification.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will address the comment by revising the specification N0-GC00026 by the time a future follow-up audit is held. Complete by: future follow-up audit	
9	N0-GC00026 (MOV)	9. Where are the MOV motor thermal overload provisions addressed?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Motor operator thermal overload protection is included in the power supply equipment. It is not supplied from MOV vender. Therefore, it is out of scope in valve procurement specification. Please see Section 1.4.1 (h) of N0-GC00026.	Resolved/ Closed
10	N0-GC00026 (MOV)	10. Specification N0-GC00026 (MOV) and other valve specifications address pressure locking. Where is thermal binding addressed?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Thermal binding requirement for valve suppliers is specified in section 7.8.3 as follows: The valves shall operate without binding and operating time shall comply with the time limits required in diagnostic testing.	Resolved/ Closed
11	N0-GC00015 (AOV)	11. Where in N0-GC00015 (AOV) is nonmetallic equipment qualification addressed?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Nonmetallic equipment qualification is addressed in General Equipment Qualification Specification, N0-EK10012, which is referenced in N0-GC00103 (Valve EQ).	Confirmatory
		11. Nonmetallic equipment qualification should be addressed in Specification N0-GC00015 on AOVs.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will address the comment by revising the specification N0-GC00015 by the time a future follow-up audit is held. Complete by: future follow-up audit	
12	N0-GC00065	12. Where in N0-GC00065 (check valves) is both forward and reverse flow required for qualification?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Sections 3.2.1.11 and 3.2.1.12 in this specification specify the qualification requirement for both forward and reverse flow as follows: Valves shall be designed such	Resolved/ Closed

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					that the disc is fully open under the flow conditions listed in Data Sheet B with no disc tapping or oscillations. Check valves shall be designed to close with a differential pressure of not more than 2 psi applied to the downstream side of the valve	
13	N0-GC00065	13. Where in N0-GC00065 (check valves) is QME-1-2007 Appendix QR-B specified for nonmetallic qualification?	NRC / Thomas Scarbrough 02/03/2014	Yes	MHI - 02/04/2014: Nonmetallic equipment qualification is addressed in General Equipment Qualification Specification, N0-EK10012, which is referenced in N0-GC00103 (Valve EQ).	Confirmatory
		13. Nonmetallic equipment qualification should be addressed in Specification N0-GC00065 on check valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will address the comment by revising specification N0-GC00065 by the time a future follow-up audit is held. Complete by: future follow-up audit	
14		Both General and Component Design Specifications are included in Table 1 (List of Risk Significant Components) for only some of the components of Reactor Coolant System. Are there any General Design Specifications for remaining components of Reactor Coolant System and for all components of remaining systems?	NRC / Sardar Ahmed, 02/03/2014	Yes	MHI - 02/04/2014 There is no General Design Specification for remaining components of Reactor Coolant System (RCS) and for all components of remaining systems. The General Design Specification describes general requirements for Class 1 Components. Class 1 Components include only some of the components of RCS, and do not include remaining components of RCS and all components of remaining systems.	Confirmatory
		It is not clear if MHI's response is always correct. For example, CRDM latch housing and rod travel housing are Class 1 components, but General Design Specification is not listed for those documents in Table 1 of the audit plan. On the other hand, Reactor coolant pump #2 seal housing is a Class 2 component, but the General Design Spec is listed. Review and correct Table 1.	NRC / Sardar Ahmed 02/04/2014	Yes	MHI - 02/05/2014: MHI provided a revised list of design specifications on 02/05/2014.	

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		14. The revised list of design specifications provided by MHI on 02/05/2014 did not list General Design Specification for all Class 1 Components and continues to have General Design Specification listed for other than Class 1 Components. For example, General Design Specification is not listed for "Letdown line piping upstream of and including the letdown line stop valves RCS-VLV-021," which is a Class 1 Component. General Design Specification is listed for "Steam generator shell side" which is a Class 2 Component.	NRC 02/06/2014	Yes	MHI - 02/14/2014: General Design Specification is applicable to components only, but not to Piping. As described in DCD, "Steam generator shell side" meets the requirements for ASME Class 1 Components, although the Code only requires that the Steam generator secondary side pressure boundary be classified as Class 2. Therefore, there is no problem of applying General Design Specification for the component. MNES/MHI would like to clarify this issue in a conference call.	
15	N0-EC40001	In the spec. N0-EC40001"Core Support Structure Design Specification", the spec did not reference RG 1.124 and 1.130, please provide a clarification of why these RG 1.124 and RG 1.130 have not been referenced in this spec.	NRC / Tuan Le, 02/03/2014	Yes	MHI - 02/04/2014: RG 1.124 and 1.130 are the guides for not CSS but Class-1 Support. In addition, both guides are not referred in SRP3.9.5 Reactor Internals. Therefore, MHI didn't reference these guides in this spec.	Resolved/ Closed
16	N0-EC40001	Section 3.8.8 of N0-EC40001"Core Support Structure Design Specification" referenced document number N0-EC40094, latest version "Comprehensive Vibration Assessment Program for US-APWR reactor Internals". Please provide (upload a copy into the electronic reading room) for the staff review.	NRC / Tuan Le, 02/03/2014	Yes	MHI - 02/04/2014: MHI uploaded the N0-EC40094 without the protection.	Resolved/ Closed
17	N0-EC50001	Codes and Standards: In the CRDM Specification, N0-EC50001, there did not appear to be any listed in section 2.1, with the exception of code case N-782. In the Reactor Internals Specification, 10 CFR Part 50 Appendix A GDC 10 is not included.	NRC / Jason Huang, 02/03/2014	Yes	MHI - 02/04/2014: To the first comment As described in the section 2.0, applicable references are specified in the reference document N0-FB10L01 "General Design Specification for class 1 component". The CRDM design specification shows only additional references to avoid overlap. In next revising, MHI will add 10 CFR Part 50 Appendix A GDC 10 to the US code lists in the Reactor Internals Specification.	Resolved/ Closed

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		<p>The following references were not included in 2.1.3 of the general design specifications for class 1 components, N0-FB10L01, and also were not found in N0-EC50001, so they should be added to the CRDM specification.</p> <p>10 CFR Part 50, Appendix A, General Design Criterion 26, "Reactivity Control System Redundancy and Capability."</p> <p>10 CFR Part 50, Appendix A, General Design Criterion 27, "Combined Reactivity Control Systems Capability."</p> <p>10 CFR Part 50, Appendix A, General Design Criterion 29, "Protection Against Anticipated Operational Occurrences."</p>	NRC / Jason Huang, 02/04/2014	Yes	MHI - 02/05/2014: In next revising, MHI will add 10 CFR Part 50 Appendix A GDC 26, 27, 29 to the US code lists in the CRDM Design Specification.	
		<p>10 CFR Part 50 Appendix A, GDCs 26, 27, and 29 should be included in the reference list in the next revision of the Control Rod Drive Mechanism Design Specification N0-EC50001.</p> <p>10 CFR Part 50 Appendix A, GDC 10 should be included in the reference list in the next revision of the Reactor Internals Function Requirements, Document No. N0-EC40002.</p>			<p>MHI - 02/14/2014: The following documents will be revised and 10CFR50 Appendix-A GDC will be included in these documents. N0-EC40002 : GDC10 N0-EC50001 : GDC26,27,29 Complete by: 2/21/2014</p>	Resolved/ Closed
18	N0-EC50001	Functional Requirements: In the FSAR, Section 3.9.4.2.1 the operating temperature is listed at 617F. In the design specification, the operating temperature is listed as 550.6F. What is the reason for this discrepancy?	NRC / Jason Huang, 02/03/2014	Yes	MHI - 02/04/2014: The functional requirement temperature is defined T-hot 617F, which is the higher operating temperature of plant conditions, as described in the FSAR. On the other hand, the design requirement temperature is defined T-cold 550.6F, which is the coolant temperature at RV head where the CRDM is located, as described in the design specification.	RAI Open Item
		From the view point of consistency, why is the value different between FSAR and design specifications?			MHI - 02/05/2014: For the CRDM design, CRDM function should be assured under coolant envelope temperature. Therefore, T-hot is described in the DCD as the	

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					functional requirement for the CRDM design. CRDM evaluation should be performed with the actual CRDM condition, therefore, RV upper head temperature T-cold is described in the design specification to use as the initial temperature. However, MHI intends to change the operating temperature to T-cold, 550.6F in next DCD revising from the view point of consistency with the design specification.	
		The operating temperature to T-cold, 550.6F should be revised in next DCD revision to be consistent with the Control Rod Drive Mechanism Design Specification N0-EC50001.	NRC 02/06/2014	Yes	MHI - 02/13/2014: DCD 3.9.4 will be revised when the next revision of DCD is submitted. A DCD markup will be provided in the RAI response.. Complete by: TBD	
19		Basis for load and displacement limits in FSAR Table 3.9-2, "Reactor Internals Interface Load and Displacement Limits": In the table notes, some loads and displacements are defined in the design specification. If these are defined elsewhere in a reference document, please upload it to the reading room.	NRC / Jason Huang, 02/03/2014	Yes	MHI - 02/04/2014: Please see N0-EC40045"Additional Design Requirements for Reactor Internals" in the reading room.	Resolved/ Closed
		N0-EC40045 states that the actual value of the core drop load is identified in Reference (2), N0-EC40002 "Reactor Internals Function Requirements Specifications." However, it appears that this reference does not contain the actual value.	NRC / Jason Huang, 02/05/2014	Yes	MHI - 02/06/2014: N0-EC40045 will be revised and the actual value of core drop load will be included in this document.	
		The actual value of core drop load should be included in the Additional Design Requirements for Reactor Internals, Document No. N0-EC40045.	NRC 02/06/2014	Yes	MHI - 02/14/2014: N0-EC40045 will be revised by 02/21/14 to include the actual value of core drop load. Complete by: 02/21/2014	

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20	N0-F600001	1) Staff is unable to find the Equipment Class, ASME Code Class, Quality Group Classification, Quality Assurance Requirement and Seismic Category for "Reactor Coolant Pump Pressure Retaining Bolting" listed in Component and Subassembly Classification Table 3-4 of Design Specification Document N0-F600001. Are these classifications listed elsewhere in the Design Specifications, Procurement Specifications, P&IDs or Q-List.	NRC / Ahmed Sardar, 02/04/2014	Yes	MHI - 02/05/2014: "Reactor Coolant Pump Pressure Retaining Bolting" consists of Casing Studs, No. 1 Seal Housing Studs and Cartridge Seal Bolts shown in Table 3-4 of the design specification.	Resolved/ Closed
		It appears that Table 3-4 is not consistent with Table 3.2-2 in DCD. Table 3.2-2 has a column that specifies "Codes and Standards", but Table 3-4 does not.	NRC / Ahmed Sardar, 02/05/2014	Yes	MHI - 02/06/2014: In the Design Specification, N0-F600001, "Principal Construction Code" column in Table 3-4 represents "Codes and Standards" column in Table 3.2-2 in the DCD. Other Design Specifications are in the same manner. Please read "Principal Construction Code" column as "Codes and Standards" column in the DCD.	
		20. In the resolution to this Question, MHI responded that the "Principal Construction Code" column in Table 3-4 represents "Codes and Standards" column in Table 3.2-2 in the DCD. The staff agrees with this explanation, but Note 3 (1) of Table 3.2-2 states this to be Class 1. As a follow up, the staff requests MHI to specify Class 1 in this column in order to be consistent with Table 3.2-2 and Table 3.2-3 of the DCD. This comment is applicable also to 58 through 66, 79, and 81(?)	NRC 02/06/2014	Yes	MHI - 02/14/2014: The specification N0-F600001 will be revised by February 21 and the expressions "NB", "NC" and "ND" in Table 3-4 will be changed to "Class 1", "Class 2" and "Class 3" respectively. "Principal Construction Code" will also be changed to "Codes and Standards". Complete by: 02/21/2014	
21	N0-F600001	2) Staff is unable to find Reactor Coolant Pump Pressure Retaining Bolting in Fig 3-1 or in any other figures of Design Specification Document N0-F600001. Are these bolting shown elsewhere in the Design or Procurement Specifications.	NRC / Ahmed Sardar, 02/04/2014	Yes	MHI - 02/05/2014: "Reactor Coolant Pump Pressure Retaining Bolting" consists of (f) Casing Stud, (f) No. 1 Seal Housing Stud and (f) Cartridge Seal Bolts shown in Figure 3-1 of the design specification.	Resolved/ Closed

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22		3) Staff believes that MHI is using RG 1.26 for Quality Group Classification and RG 1.29 for Seismic Classification. Staff do not see these Guides referenced in "Reactor Coolant Pump Pressure Retaining Bolting" Design Specification Document N0-F600001. These Reg. Guides should be referenced in all Design and Procurement specifications.	NRC / Ahmed Sardar, 02/04/2014	Yes	MHI - 02/05/2014: N0-F600001 Paragraph 2.1 references N0-FB10L01, "General Design Specification for Class 1 Components" which references the Reg. Guides in Para 2.1.4.	Resolved/ Closed
23		4) Are P&IDs of components developed for the staff to verify that seismic Category/Quality Group classification are transferred correctly to P&IDs from Design Documents (DCD Table 3.2-2). If so, please provide P&IDs in the electronic Reading Room. If not available, please provide the process for how the P&IDs and System Documentation will be transferred from Table 3.2-2 of the DCD and please indicate when will P&IDs be available.	NRC / Ahmed Sardar, 02/04/2014	Yes	MHI - 02/05/2014: The following P&IDs are provided in the electronic Reading Room. N0-EE10011R7 Reactor Coolant System (1) N0-EE10012R8 Reactor Coolant System (2) N0-EE10021R10 Chemical and Volume Control System (1) N0-EE10022R9 Chemical and Volume Control System (2) N0-EE10024R11 Chemical and Volume Control System (4) N0-EE10031R7 Safety Injection System (1) N0-EE10032R8 Safety Injection System (2) N0-EE10033R7 Safety Injection System (3) N0-EE10041R7 Residual Heat Removal System (1) N0-EE10042R7 Residual Heat Removal System (2) N0-EE10051R11 Emergency Feedwater System (1) N0-EE10071R10 Main Steam Supply System (1) N0-EE10101R10 Component Cooling Water System (1) N0-EE10102R10 Component Cooling Water System (2) N0-EE10103R8 Component Cooling Water System (3) N0-EE10104R8 Component Cooling Water System (4) N0-EE10111R10 Spent Fuel Pit Cooling and Purification System (1) N0-EE10121R9 Essential Service Water System (1) N0-EE10123R8 Essential	Resolved/ Closed

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					Service Water System (2) N0-EE10191R9 Refueling Water Storage System (1) N0-EE20511R8 Essential Chilled Water System (1)	
		<p>23. In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.</p> <p>This comment is applicable also to 58 through 66, 79, and 81</p>	NRC 02/06/2014	Yes	<p>MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID.</p> <p>MNES/MHI would like to clarify this issue in a call conference.</p> <p>MHI - 02/27/2014: The Equipment Class of each component corresponds exactly to its Quality Group and seismic Category as described in the Table 4-3 of "SSCs Classification Principles", N0-AA31000 R6.</p>	
24		5) Is there a Q-List prepared or will be prepared to itemize Equipment and their Seismic Category/Quality Group classification. What is the process that will be used to prepare Q-List and when would Q-List be available?	NRC / Ahmed Sardar, 02/04/2014	Yes	<p>MHI - 02/04/2014: MHI has developed a Q-List, but it has not been updated to be consistent with DCD Revision 4. Therefore, the Q-List is not available during this audit, to avoid potential confusion.</p> <p>The Q-List will have been updated by the time the procurement process begins. Equipment Classification, which is described in N0-AA31000 and determines the level of quality assurance applied to each component, has been or will be determined for each component when the design of each system or component was or is performed. The equipment classification is shown in each design specification. The classification for each component is summarized in Q-List along with risk significance, applicability of principal code/standards and other information that are necessary to</p>	Resolved/ Closed

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					determine the Equipment Classification.	
		Is it possible for MHI to show the current Q-List as a sample (template)?	NRC / Ahmed Sardar, 02/05/2014	Yes	MHI - 02/06/2014: The excerpt of the latest Q-List (N0-AA31001 Revision 1) was uploaded to the reading room as a sample.	
25		6) Check Valve Procurement Specification N0-GC00065 have blank Valve Data Sheets. Staff cannot verify the seismic Category/Quality Group classification of these valves until after these Data Sheets are filled in.	NRC / Ahmed Sardar, 02/04/2014	Yes	MHI - 02/05/2014: This question No.25 is the same as No.36. Refer to our response to No.36. Tracked under No.36	Confirmatory
		25. In the resolution to this Question, MHI will add the details to the data sheets and make them available in a future follow-up audit as sample data sheets. The details for the data sheets will be finalized during the site design and procurement stages.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will add the details to the data sheets and make them available in a future follow-up audit as sample data sheets. The details for the data sheets will be finalized during the site design and procurement stages. Complete by: future follow-up audit	

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26	N0-EF30022	1. Specification N0-FE30022 (Revision 0, August 11, 2011), Design Specification Class 1E MOV Actuators, does not appear to include the latest lessons learned from MOV operating experience and research programs specified in ASME QME-1-2007. For example, Section 2.1.4 does not address environmental qualification of nonmetallic parts provided in Appendix QR-B in ASME QME-1-2007. Section 2.1.5 for actuator qualification references an IEEE standard without addressing ASME QME-1-2007. Section 2.3.2 on shop testing does not reference the testing provisions of ASME QME-1-2007. The list of actuator data to be provided to the purchaser in Section 2.3.2 should also include torque at maximum torque switch setting and at minimum torque switch setting, and stall torque at elevated voltage, nominal voltage, and at reduced voltage. Section 2.1.1 in Item E references the EPRI MOV PPM for actuator sizing but does not specify that the user is responsible for demonstrating actuator output. Section 2.1.1 in Item F specifies qualification for the differential pressure (DP) but does not specify flow conditions. <u>Why does N0-FE30022 not address these and other lessons learned from MOV operating experience and research programs?</u>	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: This specification will be prepared and updated on procurement phase for site specific plant. The essential requirements will be incorporated and specified including other specification for procurement as follows: General Equipment Qualification Specification, N0-EK10012, Valve Equipment Qualification Specification, N0-GC00103 and General Motor Operated Valve Procurement Specification, N0-GC00026.	Confirmatory
		26. Specification N0-FE30022 on Class 1E MOV Actuators should be updated to address MOV lessons learned.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will update the specification N0-FE30022 or incorporate this comment into N0-GC00026 by the time a future follow-up audit is held. Complete by: future follow-up audit	
27	N0-	2. Specification N0-FB10L01,	NRC /	Yes	MHI - 02/05/2014:	Resolved/

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	FB10L01	General Design Specification for Class 1 Components, in Section 3.7.2 specifies design for the performance of ASME B&PV Code, Section XI, inservice inspections. Where are the provisions for design for the performance of ASME OM Code inservice testing?	Thomas Scarbrough 02/04/2014		General Design Specification describes common requirements among Class 1 Components except branch piping. Because of above, ASME OM Code, which provides inservice testing for pump, valve and dynamic restraint and so on, is not specified in General Design Specification.	Closed
28	N0-FB10L01	3. N0-FB10L01 provides a list of prohibited material in Section 5.4.1. Is Neolube prohibited for high temperature applications?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05-06/2014: Since substitution to Neolube will take time to find and accept, MHI will select appropriate lubricant by manufacturing of components including applicability of Neolube considering the adverse effects on the components due to its deterioration when used in high temperatures.	Resolved/ Closed
29	N0-GC00026	4. N0-GC00026, General MOV Procurement Specification, in Section 3.1.3.6 discusses the weak link analysis for the valve assembly. Where is the discussion of the use of a stem friction coefficient (for example, 0.1) that will result in the worst-case actuator output as part of the weak link analysis?	NRC / Thomas Scarbrough 02/04/2014 Modified on 02/05/2014	Yes	MHI - 02/05/2014 The weak link analysis will be performed by analytically examining all of the structurally loaded parts (both pressure retaining and non-pressure retaining) to determine the component that would be expected to fail at the lowest thrust/torque in both the opening and closing stroke directions. N0-GC00026 specifies that actuator thrust capability is calculated considering the effects of elevated temperature and degraded voltage (see Section 3.1.3.4 and definition of COF which is defined as Stem-to-stem nut coefficient of friction (0.2) in Attachment -3.) The maximum allowable thrust is set by the limit switch control to ensure that the maximum thrust applied to the MOV will not damage the valve or actuator. 3.1.3.4.4.1 Actuator capability at motor stall shall be the maximum expected actuator output, considering the maximum expected actuator efficiency and elevated voltage and using a stem-to-stem nut coefficient of	Confirmatory

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					friction (typically 0.1) which is provided by purchaser for weak link calculations.	
		29. The assumption for stem friction coefficient to determine the worst-case MOV actuator output in weak link calculations should be addressed in Specification N0-GC00026 on MOVs.	NRC 02/06/2014	Yes	<p>MHI - 02/14/2014: MHI will incorporate this comment into the specification N0-GC00026. MHI would like to discuss this item in a conference call, to clearly understand the NRC concern.</p> <p>Attachment-3 of N0-GC00026 R1 requires suppliers to calculate maximum allowable thrust (MATH) and torque (MATo) for each MOV. This calculation considers the valve and actuator structural (weak link) limits (see Paragraph 3.1.3.6 of N0-GC00026 R1) and appropriate uncertainties. These setup limits will be used by the Supplier and the plant licensee to ensure MOVs are set up such that valve and actuator structural limits are not exceeded. This approach is consistent with the industry approach currently used for in-plant MOVs and does not require a worst-case stem-to-stem nut coefficient of friction (COF).</p> <p>In addition, Paragraph 3.1.3.4.4 states that "actuator sizing shall avoid valve internal damage resulting from operating the valve during the most severe operating condition and over the entire operating range from fully closed to fully open and the reverse." The intent of this paragraph is to require that Suppliers evaluate MOVs for potential motor stall, which would only occur in the event of control switch failure (faulted condition). We consider that such an evaluation, based on reasonable assumptions for efficiency, elevated voltage and stem COF, is good design practice that will minimize the impact on the plant should such a condition occur; however, given the uncertainty with regard to minimum possible stem COF, we do not consider</p>	

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					<p>that designing an MOV to withstand motor stall, by itself, is sufficient to ensure structural margin. For clarification, paragraph 3.1.3.4.4 of N0-GC00026 R1 will be replaced with the following.</p> <p>3.1.3.4.4 Actuators shall be sized such that motor stall will not result in valve weak link limits for faulted conditions being exceeded.</p> <p>3.1.3.4.4.1 Actuator capability at motor stall shall be the maximum expected actuator output, considering the maximum expected actuator efficiency and elevated voltage and using a stem-to-stem nut coefficient of friction which is provided by purchaser.</p> <p>3.1.3.4.4.2 The weak link limit for faulted conditions, or the survivable load, shall be determined based on the load that may be applied on a one-time basis without causing a failure that would prevent MOV operation.</p> <p>Any feedback on the proposed modifications above would be appreciated.</p>	
30		5. Are safety and relief valves addressed in the design and procurement specifications in the electronic reading room?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: The three valve procurement specifications (MOV, AOV, Check Valve) are prepared as samples for the audit. The procurement specifications for safety and relief valves will be prepared at the later stage.	Resolved/ Closed
31		6. Are all MOVs in the US-APWR powered by ac sources? If not, where are dc-powered MOVs addressed?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: <u>Yes.</u> All MOVs use AC power drive motor as specified in section 3.3.2.1 of N0-GC00026.	Resolved/ Closed
32	N0-EJ10102	7. N0-EJ10102, Electrical Specification of Motor Operated Valves, provides electrical power requirements for MOV motors.	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: N0-EJ10102, Electrical Specification of Motor Operated Valves is attached to N0-	Resolved/ Closed

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		How is the degraded voltage requirement in this design specification relayed into the MOV procurement specification?			GC00026, General Motor Operated Valve Procurement Specification at procurement phase of specific plant as described in section 2.2.2 of N0-GC00026. Voltage drop is defined in Definitions of Key Data Sheet Fields of VALVE SPECIFICATION DATA SHEETS, DATA SHEET B as follows: Voltage drop: The degraded voltage effect, for which the valve shall be designed, represented as a percentage reduction of the Normal Voltage.	
33		8. Where are requirements for grouping of valves to be consistent with ASME QME-1-2007 included in the design and procurement specifications?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: The requirements for grouping of valves to be consistent with ASME QME-1-2007 are specified in section 5.0 of General Equipment Qualification Specification, N0-EK10012 as follows: The applicable requirements for a specific piece or group of equipment are based upon considerations such as equipment type, environment, seismic requirements, and safety function.	Resolved/ Closed
34		9. Where are the requirements for addressing MOV motor output under elevated temperature conditions included in the MOV motor specifications?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: Environmental conditions are specified in General Equipment Qualification Specification, N0-EK10012 which is referenced by Valve Equipment Qualification Specification, N0-GC00103. N0-GC00103 is applied to "voltage drop" in Definitions of Key Data Sheet Fields of VALVE SPECIFICATION DATA SHEETS, DATA SHEET B of General Motor Operated Valve Procurement Specification, N0-GC00026.	Resolved/ Closed
		The response does not answer the question regarding "elevated temperature conditions." The staff will review the documents specified	NRC / Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: N0-GC00026 specifies that actuator thrust capability is calculated considering the	Resolved/ Closed

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		in MHI's response.			effects of elevated temperature and degraded voltage. The requirements for an actuator capability are specified in section 3.1.3.4, 3.1.3.5 and Attachment-3 of N0-GC00026.	
35	N0-AA32060 (EQ Program)	10. N0-AA32060 (EQ Program) in Section 10.3 address ITAAC in general terms. How will the specific ITAAC for individual components be identified for the user during the procurement process?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: The procurement process is included in project-specific phase as described in Figure 2-1 (Project Equipment Qualification Program Implementation Framework) of N0-AA32060. During the site design and project engineering phase prior to procurement phase, site specific equipment qualification requirements will be prepared by Project Equipment Qualification Organization (PEQO) from or within the Project Organization as described in Section 9.4 of N0-AA32060. Therefore, specific equipment qualification requirements to be verified by ITAAC will be identified prior to procurement phase.	Resolved/ Closed
36		11. What are the plans to provide the details for the data sheets attached to the component-specific procurement specifications (for example, N0-GC00065 for check valves)?	NRC / Thomas Scarbrough 02/04/2014	Yes	MHI - 02/05/2014: MHI will add the details to the data sheets and make them available in a future follow-up audit as sample data sheets. The details for the data sheets will be finalized during the site design and procurement stages.	Confirmatory
		36. The data sheets in the specifications for individual components should be updated during the procurement phase.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will add the required details to the data sheets in the specification and make them available in a future follow-up audit as sample data sheets. The details for the data sheets will be finalized during the site design and procurement stages. Complete by: future follow-up audit	
37		1. Specification N0-FB34001, Section 4.1 states that qualification shall be in accordance with NUREG-08000, SRP Section 3.10. Why is the qualification in accordance with a SRP section?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Although it is required to meet the criteria described in SRP Section 3.10, they are not requirements but criteria. And it is required in Reg. Guides,	Confirmatory

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					ASME QME-1 and IEEE Standards to meet the criteria in SRP Section 3.10. The sentence "Qualification shall be in accordance with NUREG 0800, SRP Section 3.10" will be deleted in the next revision.	
		37. Specification N0-FB34001, Section 4.1 should be revised to delete the sentence, "Qualification shall be in accordance with NUREG-08000, SRP Section 3.10."	NRC 02/06/2014	Yes	MHI - 02/14/2014: The specification will be revised after the US-APWR project resumes normal activities, and then the sentence "Qualification shall be in accordance with NUREG-08000, SRP Section 3.10." will be deleted. Complete by: future follow-up audit	
38		2. Specification N0-FB34001, Section 4.5.3 states that accelerated thermal aging according to the Arrhenius Model is acceptable. Explain the intent of this statement and describe how the Arrhenius Model is used to determine accelerated thermal aging.	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: It is required in Paragraph 4.5 to be in accordance with Appendix QR-B of ASME QME-1. For qualification simulating the condition at the end of life, accelerated thermal aging according to QR-B6200 and QR-B6310 is acceptable.	Resolved/ Closed
39		3. MUAP-08013 Section 3.4 and SER Section 6.2.2.4.13 describe the methodology for design and qualification of SI pumps for post-LOCA debris operation. Where is this design and qualification information described in Specification N0-FB34001?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: The design requirement is described in Paragraph 3.4.7. Debris entrained condition in Data Sheet 1.0 will be determined considering LOCA condition. It is required in QME-1 to consider all design basis events and LOCA is specified as a design basis event in Table A1-2 in Specification N0-FB34001. So the required qualification includes post-LOCA debris operation.	Resolved/ Closed
40		4. Specification N0-FB34001, Data Sheet 1, Note 10 for post-LOCA debris does not appear consistent with the debris listed in MUAP-08013, Table 3.2-3, "Debris Source Term," and Table 3.2-4, "Debris Concentration Components." Explain this inconsistency.	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/06/2014: Debris information in Specification N0-FB34001, Data Sheet 1, Note 10 will be revised to consistent with that described in MUAP-08013, Table 3.2-3, "Debris Source Term," and Table 3.2-4, "Debris Concentration Components".	Confirmatory
		40. Debris information in Specification N0-FB34001, Data	NRC	Yes	MHI - 02/14/2014: The specification will be revised	

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		Sheet 1, Note 10 should be revised to be consistent with the post-LOCA debris described in MUAP-08013, Table 3.2-3, "Debris Source Term," and Table 3.2-4, "Debris Concentration Components."	02/06/2014		after the US-APWR project resumes normal activities and then the debris condition will be changed to that shown in MUAP-08013. Complete by: future follow-up audit	
41		5. MUAP-08013, Section 3.7 contains a list of confirmatory items. Specification N0-FB34001 does not appear to describe Confirmatory Items 3.7.1, 3.7.2 and 3.7.5 which are applicable to the design and qualification of the SI pumps. Are Confirmatory Items 3.7.1, 3.7.2 and 3.7.5 discussed in the specification?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: The maximum flow rate is 1540 gpm as shown in Table D1-1 in Specification N0-FB34001, which is smaller than 2000 gpm of Confirmatory Item 3.7.1. Confirmatory Item 3.7.2 is applied to CS/RHR Pump, not to SI Pump. As for Confirmatory Item 3.7.5, the operability under LOCA condition for a minimum of 30 days are required in Paragraph 3.4.7, material and material hardness will be supplied in CoC or CMTR required in Table 8.2-1, and design and maximum running clearances will be supplied in Functional Qualification Report required in Paragraph 4.2.1.	Resolved/ Closed
42		6. The confirmation item numbers and descriptions in MUAP-08013 (R5) Sections 3.4.1.1, "ECCS Pumps," 3.1.4.2, "CSS Pumps," and 3.7, "Confirmation Items" do not appear consistent. Discuss this inconsistency.	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/06/2014: Although the same statements are not described, the requirements in Sections 3.4.1.1 and 3.7 are included in Specification N0-FB34001. The requirements in Section 3.4.1.2 are applied to CS/RHR Pumps, not to SI Pumps. <Section 3.4.1.1> A) For the intent of API 610, refer to the response to Comment No. 43. B) For the mission time, the operability for at least 30 days is required in Paragraph 3.4.7. C) For the application of ASME QME-1-2007, it is required in Paragraphs 3.4.2 and 4.2. D) For the wet materials and running clearances, refer to the response to	Resolved/ Closed

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					<p>Comment No. 41.</p> <p>E) For the filtering components, refer to the response to Comment No. 47.</p> <p>F) For the statement "The pump purchase specification will state there will be no changes in system or equipment operation", refer to the response to Comment No. 48.</p> <p>G) Rotor dynamic analysis is necessary for the evaluation of the rotor critical speed required in Paragraph 3.5.4.</p> <p>H) Bearing load models are necessary to evaluate operability required in Paragraph 3.7.4.</p> <p>I) The Suppliers confirmation results on bypass flow increase will be described in Functional Qualification Report required in Paragraph 4.2.1.</p> <p><Section 3.7></p> <p>J) For the Sections 3.7.1, 3.7.2 and 3.7.5, refer to the response to Comment No. 41.</p> <p>K) The Section 3.7.3 is applied to valves.</p> <p>L) For the Section 3.7.4, refer to A) in this response.</p> <p>For the Section 3.7.6, the seal leak requirements are described in Data Sheet 1.0, Note-8.</p>	
43		7. Specification N0-FB34001 Section 3.2.2 states that pumps and seals are designed in accordance with API 610. However, MUAP-08013, Section 3.4.1.1 states that pumps will meet the intent of API 610. Will the pumps and seals be designed "in	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: MHI's request to Suppliers is to be in accordance with API 610. If any Supplier propose deviations concerning the requirements in API 610, they may be acceptable in case they meet the intent of API 610 in the context of rotor	Resolved/ Closed

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		accordance with" or "to meet the intent" in accordance with API 610? Please discuss.			dynamic analysis.	
44		8. Specification N0-FB34001, Data Sheet 2, Note 6 states, "expected operating conditions are shown in 5. The supplier shall ensure no cavitation under described conditions." In RAI 881-6203, Question 6.3-104 response dated March 30, 2012 states, "Pump qualification testing simulates operating plant as-built installation" when testing SI pump under low flow recirculation conditions. Will pump testing under low flow recirculation conditions simulate as-built installation? Also, will functional qualification testing for low flow recirculation condition (i.e., recirculation cavitation) be performed and meet the criteria described in RAI 867-6174, Question 6.3-103, dated January 6, 2012, RAI 881-6203, Question 6.3-104 dated March 30, 2012, and RAI 1014-7047, Question 6.3-114, dated April 10, 2013?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/06/2014: Yes. Dominant parameters on recirculation cavitation are inlet pressure and flow rate, and tests simulating these parameters will be conducted for the first pump in the factory tests. As described in Paragraph 4.2.6, pump and motor performance tests described in Paragraph 7.5 can be part of the functional qualification tests. In the pump and motor tests, the required test range for the first pump is entire operating range from shutoff through run-out which includes minimum flow condition stated in the RAI responses.	Resolved/ Closed
45		9. Specification N0-FB34001 Section 3.2.5 states, "Pump performance shall be evaluated with regard to air ingestion in accordance with RG 1.82." Will the air ingestion testing be performed in accordance with the methodology and acceptance criteria in RG 1.82?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Yes. The air-ingested test will be performed as stated in Paragraph 7.7 and the conditions will be determined in accordance with RG 1.82.	Resolved/ Closed
46		10. Specification N0-FB34001, Sections 7.7 and 4.2.7 describe Transient Air Injection Testing and Section 7.7 states, "the precise are volumes and detailed procedure for air injection and establishment of required flow regime shall be determined by the Supplier and provided to the Purchaser for review." Will the air ingestion testing be performed in accordance with the methodology and acceptance criteria in RG 1.82?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Refer to Resolution to Comment No. 45.	Resolved/ Closed
47		11. MUAP-08013, Section 3.4.1.1 states that MHI does not intend to specify strainers, cyclone	NRC/ James Strnisha,	Yes	MHI - 02/05/2014: No. The statement is not contained in Specification N0-	Resolved/ Closed

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		separators or filters... [for the SI pumps], and if used, the vendor must confirm these will not clog. Is this statement contained in Specification N0-FB34001? Does MHI plan to restrict the use of these devices for the SI pumps?	02/04/2014		FB34001. MHI does not restrict the use of any filtering components. If the Supplier proposes the use of any filtering components, the active safety-related functions of the components have to be identified according to Paragraph 4.1.1. The components have to be qualified if they have any active safety-related functions.	
48		12. MUAP-08013, Section 3.4.1.1 states, "The pump purchase specification will state there will be no changes in system or equipment operation (i.e. pump vibration and rotor dynamics) such that the pump will not be able to perform as specified. Confirmation Item 3.7.5." Is this statement contained in Specification N0-FB34001? Please describe the intent of this statement.	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: No. The statement is not contained in Specification N0-FB34001. The intent of the statement is that the purchase specification requires the specified pump performance not to be affected by changes in system or equipment due to the wear by debris. The pump operability for at least 30 days under debris entrained condition is required in Paragraph 3.4.7, and this requirement meets the statement.	Resolved/ Closed
49		13. MUAP-08013, Section 3.14 for ITAAC Requirements does not list the specific ITAAC the Supplier is required to meet. Are there ITAAC the Supplier will need to meet? If so, does MHI plan to identify applicable ITAAC during the procurement process?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Yes. Results of some factory tests will be used for ITAAC. Such factory tests are required in Specification N0-FB34001 although the ITAAC number is not specified since it is not a matter of Suppliers.	Resolved/ Closed
50		14. Specification N0-FB34001, Section 4.1 specifies pumps but does not specifically include "mechanical seals". For clarification should the first sentence state, 'pumps including mechanical seals'?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: No. Paragraph 3.2 of the reference document N0-FB00100, "Pump Equipment Qualification Specification" specifies the qualification boundaries and a shaft-seal system is included.	Resolved/ Closed
51		15. Specification N0-FB34001, Section 4.2.5 states, "the qualification report shall include, as a minimum," a list of 5 items for inclusion in the qualification report. Also, Section 4.2.1 states that the report shall document compliance with ASME QME-1, Articles QR-8000 and QP-8000. Is the intent of	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: No. The listed 5 items are in Article QP-8000.	Resolved/ Closed

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		Section 4.2.5 to specify that the qualification report will contain the information in Section 4.2.5 in addition to the information specified in ASME QME-1, Articles QR-8000 and QP-8000?				
52		16. Specification N0-FB34001, Section 4.5, "Qualification of Non-Metallic Parts" states that Non-metallic parts and materials such as gaskets, sealants, seals, and lubricants shall be qualified in accordance with Nonmandatory Appendix QR-B of ASME QME-1." RG 1.100 Revision 3, Section 1.2 states that, "if a licensee commits the use of non-mandatory appendices in ASME QME-1-2007 for its qualification of active mechanical equipment in NPPs, then the criteria and procedures delineated in those non-mandatory appendices become part of the basis for its qualification program, unless specific deviations are requested and justified." Is this statement contained in the procurement specification to clarify to the Supplier that Appendix QR-B is actually required and becomes part of the basis for its qualification program? Also, are all SI pump non-metallic components required to be qualified in accordance with Appendix QR-B?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: No. The statement is not included in Specification N0-FB34001. Application of all nonmandatory Appendices of QME-1 is stated in Paragraph 2.4.1 and the application of the nonmandatory Appendix QR-B is required in Paragraph 4.5. Active safety-related functions of each part are required to be identified in Paragraph 4.1.1. Parts that are not involved in the active pump function may be excluded from the qualification process as described in Article QR-7200 of ASME QME-1.	Resolved/ Closed
53		17. Specification N0-FB34001, Section 4.5.5, "Qualification Documentation," provides a list of attributes specific to non-metallic components that should be contained in the Qualification Report. Are these attributes intended to be in addition to the documentation provisions contained in ASME QME-1-2007, Appendix QR-B, Section QR-B7000? Should Section 4.5.5 reference the documentation provisions Appendix QR-B, Section QR-B7000?	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Paragraph 4.5.5 is the requirements specified in Article QR-B5500. The application of Appendix QR-B is required in Paragraph 4.5 and the application of Section QR-B7000 is a part of the requirement.	Resolved/ Closed
54		18. Specification N0-EK10012, Section 5.4, "Mechanical Equipment Qualification," states	NRC/ James Strnisha,	Yes	MHI - 02/05/2014: No deviations from QR-B of QME-1-2007 is requested and	Resolved/ Closed

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		that "non-metallic components of mechanical equipment located in harsh environments are qualified in accordance with ASME QME-1-2007, Appendix QR-B as endorsed by RG 1.100, Rev. 3." RG 1.100 Revision 3, Section 1.2 states that, "if a licensee commits the use of non-mandatory appendices in ASME QME-1-2007 for its qualification of active mechanical equipment in NPPs, then the criteria and procedures delineated in those non-mandatory appendices become part of the basis for its qualification program, unless specific deviations are requested and justified." Is this statement contained in the procurement specification to clarify to the Supplier that Appendix QR-B is actually required and becomes part of the basis for its qualification program for the qualification non-metallic components of mechanical equipment located in harsh environments?	02/04/2014		justified in the US-APWR. Therefore, there is no statement to request and justify the deviations in N0-EK10012.	
55		19. Specification N0-EK10012, Section 6.1.2, "Harsh Environment Documentation," does not reference ASME QME-1-2007, Appendix QR-B, Section QR-B7000, "Documentation," for the documentation of non-metallic components of mechanical equipment located in harsh environments. Discuss why Section 6.1 does not reference ASME QME-1-2007, Appendix QR-B, Section QR-B7000.	NRC/ James Strnisha, 02/04/2014	Yes	MHI - 02/05/2014: Although Section 6.1 does not refer ASME QME-1-2007, QR-B, QR-B7000, Equipment Qualification Data Package will be documented in accordance with ASME QME-1-2007 as described in Section 6.2. Therefore, the QR-B7000 of QME-1-2007 will be considered during the documentation.	Resolved/ Closed
56		1. In spec. N0-F100L01, the seal ledge is safety related component, QG A, seismic Category 1, 10 CFR Part 50 Appendix B. The seal ledge is a part of permanent cavity seal (PCS). The code and standard of the seal ledge is specified to be "applicable industry standards". Typically, the design of seal ledge should be identified what the codes and standards.	NRC/ Tuan Le, 02/04/2014	Yes	MHI - 02/05/2014: As described in DCD 9.1.4.2.1.13, although, PCS is considered as non-ASME Code Section III component and ASME Code certification is not required, the stress limits of ASME Code Section III, Subsection ND, are used for design of the PCS. In addition, material selection, fabrication, and examination of the PCS are in accordance with requirements of ASME Code	Confirmatory

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					Section II, Section IX, and Section V. Also, as described in RAI 976-6934, the weld connecting Seal Ledge to Reactor Vessel is considered part of the attachment (Seal Ledge) and the weld will conform to ASME NB-4430. In the next revision, MHI will address the above requirements for Seal Ledge in the specification.	
		In Specification N0-F100L01, the design of seal ledge does not specify the codes and standards, but indicated "applicable industry standards." In the next revision, MHI will address the above requirements for Seal Ledge in the specification.	NRC/ 02/06/2014	Yes	MHI - 02/14/2014: MHI will address the above requirements for Seal Ledge in the specification after the US-APWR project resumes normal activities. Complete by: future follow-up audit	
57		2. In Spec. N0-F100L01, Section 3.7.1 stated that "The loads from the PCS acting on the RV Shell flange and the load from the lower reactor internal acting on outlet nozzles and DVI nozzle are considered as negligible." The staff found this statement is not clear and is not correctly address what type of loads are and are not applied. Revise this paragraph and clarify what loads are not applied to PCS, RV shell flange, outlet nozzles and DVI nozzle.	NRC/ Tuan Le, 02/04/2014	Yes	MHI - 02/05/2014: 1) Loads from the PCS acting on the RV Shell flange This load is a reaction load of PCS against RV shell flange expansion and deformation due to the RCS temperature and pressure increase. 2) Load from the lower reactor internal acting on outlet nozzles and DVI nozzle This load is seismic load from the reactor internal's Outlet Nozzle and the Safety Injection Pad to the interior extruded portion of RV Outlet nozzle and DVI nozzle during their contact.	Confirmatory
		Item 57 Follow-up question: Provide detail drawings (or figures) and loading boundary condition of model to show the loading from the reactor internals due to the seismic event. The model or drawings should show the gap dimensions between the reactor internals and related RV outlet nozzles, safety injection pad and the interior extrusion of DVI nozzle.	NRC/ Tuan Le, 02/05/2014	Yes	MHI - 02/06/2014: The figure which represented following two mating surfaces is shown in Appendix. 1. · Between RV and CB outlet nozzle · Between interior extrusion of DVI nozzle and safety injection pad In room temperature, both gaps	

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					are 2mm. In normal operating condition, these gaps become 0 mm because the thermal expansions of the core barrel with SUS are larger than those of RV with low alloy steel.	
		In Specification N0-F100L01, Section 3.7.1 stated that "The loads from the PCS acting on the RV Shell flange and the load from the lower reactor internal acting on outlet nozzles and DVI nozzle are considered as negligible." This statement should be revised to clarify the type of load that is negligible and add figures to show the load is negligible. The staff could not locate the figures in Appendix 1 to show the gap dimension to demonstrate that the seismic load is negligible.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will revise Section 3.7.1 in the design specification, N0-F100L01, to clarify the type of load that is negligible and add figures which describe the gap dimension after the US-APWR project resumes normal activities. Complete by: future follow-up audit	
58		1) For system "Pressurizer piping upstream of and including the pressurizer safety valves RCS-SRV-120,121,122,123, safety depressurization valves RCSMOV-17A,B, and depressurization valves RCSMOV-119", Design Specification Doc. No. N0-GB00002, Table 3-1 Section 3.4, tabulates the classifications of Class 1 piping as specified in Table 3.2-2 of the DCD. Staff could not find any tabulation for the classification of pressurizer safety valves RCS-SRV-120,121,122,123, safety depressurization valves RCSMOV-17A, B, and depressurization valves RCSMOV-119. Section 3.3 "Jurisdictional Boundaries & Interface" indicates that the jurisdictional boundaries of this specification exclude valves. If so, where the staff can verify valves classifications.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: RCS-SRV-120,121,122,123, RCS-MOV-117A, B and RCS-MOV-119 are marked up on the P&ID, which indicates that these valves are in the extent of Equipment Class 1. Please see the following pdf file. Valve markup_N0-EE10012_R8.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow	NRC 02/06/2014	Yes	MHI - 02/12/2014 & 02/13/2014: P&ID can't express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact.	

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		up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.			<p>All the information associated with each element can't be drawn on P&ID.</p> <p>MNES/MHI would like to clarify this issue in a call conference.</p> <p>MHI - 02/27/2014: The valve list in the system design package shows that RCS-SRV-120,121,122,123, RCS-MOV-117A, B and RCS-MOV-119 are Equipment Class 1 which corresponds exactly to Quality Group A and Seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file.</p> <p>N0-EE11010_R6.pdf</p>	
59		<p>2) Table 1 "List of Risk Significant Components" attached with the Audit Plan lists Equipment class 3 for system "Reactor coolant pump seal water injection piping and valves downstream of including valves CVS-VLV-180A, B, C, D". Whereas, Table 3.2-2 indicates Equipment Class 1 for this system. This discrepancy needs to be corrected.</p> <p>Flow Diagram, Figures 3-19, 3-20, 3-21 & 3-22 of Design Specification Doc. No. N0-GB00002 for system for this system shows the class 1 boundary of piping and shows that the valves CVS-VLV-180A, B, C, D are class 1 valves. Table 3-1 of the Design Specification tabulates the remaining classifications of class 1 piping per Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves CVS-VLV-180A, B, C, D.?</p> <p>Also, Design Specification Doc. No. N0-GB00002, Table 3-1 tabulates the classifications of class 1 piping reflecting Table 3.2-2 of DCD. Where can staff verify the classification of valves CVS-VLV-180A, B, C, D.</p>	NRC/ Sardar Ahmed, 02/05/2014	Yes	<p>MHI - 02/06/2014: MHI has provided the Table 1 in which the Equipment Class was corrected from "3" to "1".</p> <p>CVS-VLV-180A, B, C, D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf files.</p> <p>Valve markup_N0-EE10021_R10.pdf Valve markup_N0-EE10022_R9.pdf</p>	Resolved/ Closed

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		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that CVS-VLV-180A, B, C, D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11020_R11.pdf	
60		3) Flow Diagram, Figure 3-16 of Design Specification Doc. No. N0-GB00002 for system "Charging lines from and including valves CVS-VLV-158 and CVS-AOV-159 to their penetration into the reactor coolant system" shows the class 1 boundary of piping and shows that the valves CVS-VLV-158 and CVS-AOV-159 are class 1 valves. Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves CVS-VLV-158 and CVS-AOV-159?	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: CVS-VLV-158 and AVS-AOV-159 are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf files. Valve markup_N0-EE10021_R10.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping	

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		from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.			<p>elements in fact. All the information associated with each element can't be drawn on P&ID.</p> <p>MNES/MHI would like to clarify this issue in a call conference.</p> <p>MHI - 02/27/2014: The valve list in the system design package shows that CVS-VLV-158 and CVS-AOV-159 are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11020_R11.pdf</p>	
61		4) Flow Diagram, Figure 3-2 of Design Specification Doc. No. N0-GB00002 for system "Auxiliary spray line from and including valves CVS-AOV-155 to the penetration into the RCS" shows the class 1 boundary of piping and shows that the valve CVS-AOV-155 is class 1 valve. Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valve CVS-AOV-155?	NRC/ Sardar Ahmed, 02/05/2014	Yes	<p>MHI - 02/06/2014: CVS-VLV-155 is marked up on the P&ID, which indicates that the valve is in the extent of Equipment class 1. Please see the following pdf files. Valve markup_N0-EE10021_R10.pdf</p>	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	<p>MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID.</p> <p>MNES/MHI would like to clarify this issue at the call conference.</p> <p>MHI - 02/27/2014: The valve list in the system</p>	

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					design package shows that CVS-VLV-155 is Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11020_R11.pdf	
62		5) Flow Diagram, Figure 3-14 & 3-15 of Design Specification Doc. No. N0-GB00002 for system "Safety injection piping and valves between the System penetration and including the second check valve SIS-VLV-012A, B, C, D upstream of the direct Vessel Injection penetration" shows the class 1 boundary of piping and shows that valves SIS-VLV-012A, B are class 1 valves. Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves SIS-VLV-012A, B, C, D.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: SIS-VLV-012A, B, C, D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf files. Valve markup_N0-EE10031_R7.pdf Valve markup_N0-EE10032_R8.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that SIS-VLV-012A, B, C, D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file.	

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					N0-EE11030_R9.pdf	
63		1) Flow Diagram, Figure 3-8 & 3-9 of Design Specification Doc. No. N0-GB00002 for system "Hot leg injection piping downstream of and including the motor operated valves SIS-MOV-014A, B, C,D", shows the class 1 boundary of piping and shows that valves SIS-MOV-014A & B are class 1 valves. Flow Diagram is not given in the Design Specification for piping that includes valves SIS-MOV-014 C & D. Also, Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves SIS-VLV-012A, B, C & D. Staff finds that class 1 boundaries are provided in Figures of Appendix-1, but these figures do not provide any of the classifications of Table 3.2-2 of the DCD.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: The design specification shows the flow diagram of A and B loops. These represent all four loops because A and D lines (B and C) are symmetrical as stated in Section 3.3 of the design specification, which states: "The symmetry of the various piping systems, such as the accumulator loop A and D lines, may be taken into account for piping analysis." SIS-MOV-014A, B, C, D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf files. Valve markup_N0-EE10031_R7.pdf Valve markup_N0-EE10032_R8.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that SIS-MOV-014A, B, C, D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file.	

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					N0-EE11030_R9.pdf	
64		2) Flow Diagram, Figure 3-12 & 3-13 of Design Specification Doc. No. N0-GB00002 for system "Accumulator piping and valves on the reactor coolant system side of and including the second check valves SIS-VLV-102A, B, C, D", shows the class 1 boundary of piping and shows that valves SIS-VLV-102A & B are class 1 valves. Flow Diagram is not given for piping that includes valves SIS-VLV-102C & D in the Design Specification. Also, Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves SIS-VLV-102A, B, C, D.? Staff finds that class 1 boundaries are provided in Figures of Appendix-1, but these figures do not provide any of the classifications of Table 3.2-2 of the DCD.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: The design specification shows the flow diagram of A and B loops. These represent all four loops because A and D lines (B and C) are symmetrical as stated in Section 3.3 of the design specification, which states: "The symmetry of the various piping systems, such as the accumulator loop A and D lines, may be taken into account for piping analysis." SIS-VLV-102A, B, C, D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf file. Valve markup_N0-EE10033_R7.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/11/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that SIS-VLV-102A, B, C, D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file.	

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					N0-EE11030_R9.pdf	
65		3) For system "Emergency letdown isolation valves SIS-MOV-031A, 031D, 032A, 032D and piping between valves", Design Specification Doc. No. N0-GB00002 only has Flow Diagram Figure 3-8 for class 1 piping that includes Valve SIS-MOV-032A. Are there Flow Diagram given for piping that includes valves SIS-MOV-031A, 031D & 032D. Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves SIS-MOV-031A, 031D, 032A, 032D? Staff finds that class 1 boundaries are provided in Figures of Appendix-1, but these figures do not provide any of the classifications of Table 3.2-2 of the DCD.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: The design specification shows the flow diagram of the piping that includes Valve SIS-MOV-032A. This represents all four pipings that include 31A, 31D, and 32D because they are symmetrical as stated in Section 3.3 of the design specification, which states: "The symmetry of the various piping systems, such as the accumulator loop A and D lines, may be taken into account for piping analysis." SIS-MOV-031A, 031D, 032A, 032D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment class 1. Please see the following pdf files. Valve markup_N0-EE10031_R7.pdf Valve markup_N0-EE10032_R8.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that SIS-MOV-031A, 031D, 032A, 032D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-	

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
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					AA31000 R6. Please see the following pdf file. N0-EE11030_R9.pdf	
66		4) Flow Diagram, Figure 3-10 & 3-11 of Design Specification Doc. No. N0-GB00002 for system "Residual heat removal discharge piping and valves on the reactor coolant system side between the cold legs, up to and including the second check valves RHS-VLV-027A,B,C,D", provides class 1 boundary of piping and shows that valves RHS-VLV- 027A & B are class 1 valves. Flow Diagram are not given for piping that includes valves RHS-VLV- 027 C & D in the Design Specification. Also, Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valves RHS-VLV- 027A, B, C, D. Staff finds that class 1 boundaries are provided in Figures of Appendix-1, but these figures do not provide any of the classifications of Table 3.2-2 of the DCD.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: The design specification shows the flow diagram of A and B loops. These represent all four loops because A and D lines (B and C) are symmetrical as stated in Section 3.3 of the design specification, which states: "The symmetry of the various piping systems, such as the accumulator loop A and D lines, may be taken into account for piping analysis." RHS-VLV- 027A, B, C, D are marked up on the P&ID, which indicates that these valves are in the extent of Equipment Class 1. Please see the following pdf files. Valve markup_N0-EE10041_R7.pdf Valve markup_N0-EE10042_R7.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that RHS-VLV- 027A, B, C, D are Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I,	

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					as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11040_R8.pdf	
67		1. N0-FB00100, Pump Equipment Qualification Specification, provides overall requirements for pump qualification. On page 13, Section 3.5.4.2 allows static equivalent loads for seismic qualification to be applied at the center of gravity. Is there a requirement for this load to be applied along the least rigid axis? Individual pump specifications, such as N0-FB34001 on SI pumps, should also be checked for this provision.	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: Yes. In N0-FB00100, Section 3.5.4.2.2, it is required that the horizontal loads are assumed to act in any direction. "Any direction" includes parallel and vertical directions to the pump shaft, one of which is generally the least rigid axis. SI pump Specification refers N0-FB00100 and the above requirement is applied to SI pumps. For the Specifications of the other pumps, refer to the response to Comment No. 69.	Resolved/ Closed
		67. Specification N0-FB00100 on pump equipment qualification should be clarified that static equivalent loads for seismic qualification are applied along the least rigid axis.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The specification will be revised by February 21 and the expression "including the least rigid axis" will be inserted in 3.5.4.2.2. Complete by: 02/21/2014	
68		2. N0-FB34001 on SI pumps, and other individual pump specifications, does not address NPSH uncertainties. Where are NPSH uncertainties addressed?	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: NPSH3% (15.7 ft) in Data Sheet 1.0, 7.8 is required NPSHr to Suppliers. On the other hand, Design-basis NPSH3% (18.8 ft) in Data Sheet 1.0, 7.9 is used for system design. Uncertainties are considered in the difference.	Resolved/ Closed
69		3. Some individual pump specifications, such as N0-FB54001 on motor-driven EFW pumps, N0-FB54002 on turbine-driven EFW pumps, and N0-FB44001 on Containment Spray and RHR pumps, do not appear to include qualification details such as provided in N0-FB34001 on SI pumps. For example, these specifications do not appear to discuss ASME QME-1-2007 Section QP on pump qualification, Appendix QR-A on seismic	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: Procurement requirements were supplemented only to SI Pump specification for the Procurement Specification Audit, and not supplemented to the specifications of the other pumps at this time. Those specifications were prepared for the Design Specification Audit. The procurement requirements incorporating NRC comments for SI Pump specification will be reflected to the specifications of	Confirmatory

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
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		qualification, and Appendix QR-B on nonmetallic environmental qualification.			the other pumps prior to the procurement stage.	
		69. The individual pump specifications should be updated to include qualification details (such as references to ASME QME-1-2007, Section QP, Appendix QR-A, and Appendix QR-B) during the procurement phase.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The individual pump specifications, N0-FB24001, N0-FB44001, N0-FB54001, N0-FB54002, N0-FC04001, N0-FC14U01 and N0-FC24U01, will be revised after the US-APWR project resumes normal activities. Then, the qualification details will be added. Complete by: future follow-up audit	
70		4. Individual pump specifications reference the ASME OM Code in Attachment 4. The reference to Subsection ISTB will need to be updated to Subsection ISTF for pumps in new reactors when the new ASME OM Code is incorporated into the NRC regulations.	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: In ASME OM Code 2004 Edition through 2006 Addenda, which is currently endorsed by NRC, Subsection ISTB is applied to pumps in any plant. So the pump specifications refer Subsection ISTB. After OM Code 2012 Edition is endorsed by NRC, the references will be changed to Subsection ISTF.	Confirmatory
		70. The individual component specifications should be updated to the most recent ASME OM Code subsection (such as Subsection ISTF for pumps in new reactors) during the procurement phase.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The individual pump specifications, N0-FB24001, N0-FB34001, N0-FB44001, N0-FB54001, N0-FB54002, N0-FC04001, N0-FC14U01 and N0-FC24U01, will be revised after the US-APWR project resumes normal activities. Then, the edition of OM Code and the applicable subsection will be changed or added in accordance with the latest requirements at that time. Complete by: future follow-up audit	
71		5. Section 3.1.1 in N0-FB44001 on Containment Spray and RHR pumps references ASME Code, Section XI, for periodic testing. This section should reference the ASME OM Code for periodic testing.	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: Although ASME OM Code is listed in Paragraph 2.3.1, it should be referred in Section 3.1.1 as you pointed out. This will be modified in the revised specification.	Confirmatory
		71. Specification N0-FB44001 on	NRC	Yes	MHI - 02/14/2014:	

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		Containment Spray and RHR pumps should be revised to reference the ASME OM Code for periodic testing (rather than ASME B&PV Code, Section XI).	02/06/2014		The specification will be revised after the US-APWR project resumes normal activities. Then, the reference document for IST in 3.1.1 will be changed to ASME OM Code. Complete by: future follow-up audit	
72		6. Individual pump specifications reference 10 CFR 50.69 that relates to risk-informed programs. Will a risk-informed program be used for pump qualification?	NRC/ Thomas Scarbrough 02/05/2014	Yes	MHI - 02/06/2014: No. Risk-informed programs are not used for the pump qualification. Although the statements in 10 CFR 50.69 are not directly required to Suppliers, Suppliers may be requested to submit some documents for Licensees.	Resolved/ Closed
73		1. Specification N0-F600001 identifies the Principal Construction Code for Seal Housing #1 and #2 as ASME Section III NB and Seal Housing #3 as ASME Section III ND. Briefly discuss the basis for categorizing Seal Housing #1 and #2 as ASME Section III NB and Seal Housing #3 as ASME Section III ND.	NRC/ James Strnisha, 02/05/2014	Yes	MHI - 02/06/2014: During normal operation, No. 1 & No. 2 seals prevent the leakage of injection water, and No. 3 seal is provided as a back-up of the No. 1 & No. 2 seals. Therefore, the No. 1 & No. 2 seal housings are internally-pressurized and the No. 3 seal housing is little internally-pressurized during normal operation. ASME Section III NB and ND are identified from this difference.	Resolved/ Closed
74		2. Specification N0-FB44001 contains design requirements for the CS/RHR pumps. RAI 998-7025, Question 5.4.7-16 discussed the susceptibility of the RHR system to potential vortex induced air ingestion and the impact to RHR pump performance and reliability. In response dated March 27, 2013, MHI provided a detailed testing methodology and acceptance criteria for CS/RHR Pump Mid-Loop Performance and Reliability Confirmation that requires both vendor and pre-operational testing. Does Specification N0-FB44001 describe this testing? Will any specific testing and data be required by the pump vendor during qualification testing of the pumps? If so, is this information contained in Specification N0-FB44001?	NRC/ James Strnisha, 02/05/2014	Yes	MHI - 02/06/2014: Since the most recent response to RAI 998-7025, Question 5.4.7-16 was submitted on February 3, 2013, the contents of the response are not fully reflected in Specification N0-FB44001. Although air-ingested factory test is required for the first pump in Paragraph 6.5, detail requirements are not yet included. The detail contents on factory tests in the response will be reflected in the next revision. However, the requirements on preoperational tests will not be reflected since they are not matters of Suppliers.	Confirmatory

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		74. Specification N0-FB44001 should be revised to address vendor/factory testing provisions to confirm acceptable CS/RHR pump mid-loop performance.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The specification will be revised after the US-APWR project resumes normal activities. Then, vendor/factory testing provisions to confirm acceptable CS/RHR pump mid-loop performance will be added. Complete by: future follow-up audit	
75		In Spec. N0-F60001, locked rotor load has not been specified in the Appendix-2 "Reactor Coolant Pump Input loads" (page 77), Table A2-1, A2-2.	NRC/ Tuan Le, 02/05/2014	Yes	MHI - 02/06/2014: As described in the load Tables (such as Table A2-1, A2-2), N0-EF10014 is used as the input of the accident loads. As indicated in N0-EF10014, Section 3.2, RCP locked rotor is considered to analyze the accident loads. Therefore, the accident loads in Specification N0-F600001 include the locked rotor load.	Resolved/ Closed
76		Spec. N0-F60001 referenced spec. N0-EF10014 Revision 6, "Accident Load". Please upload spec. N0-EF10014 Revision 6 "Accident Load" for the follow-up audit.	NRC/ Tuan Le, 02/05/2014	Yes	MHI - 02/06/2014: MHI has remade and re-uploaded the PDF file, and believes that NRC staff can see the document.	Resolved/ Closed
77		In Spec. N0-F60001, RCP design conditions specified Casing Hydro Test Pressure to be 3397 psig = 1.25 x 2485 psig + 290 psig. Provide the base of using 1.25 factor and 290 psig in lieu of 1.5 factor of hydro static test of ASME pressure retaining component.	NRC/ Tuan Le, 02/05/2014	Yes	MHI - 02/06/2014: Since ASME BPVC Section. III, Div. 1, NB-6221 requires "Components shall be hydrostatically tested at not less than 1.25 times their Design Pressure", 1.25 factor is used. Hydrostatic tests of the casing and heat exchanger are simultaneously conducted. As described in note-1 of Paragraph 3.7.1 in Specification N0-F600001, the heat exchanger internal pressure is required to be 290 psig for leak rate measurement accuracy. The heat exchanger external pressure, which is the same as the casing internal pressure, must be 3107+290 psig to acquire the differential pressure of 3107 psig.	Resolved/ Closed
78		In Spec. N0-FB500L01, the spec did not reference the RG 1.207 for the environment assisted fatigue. Do the fatigue evaluations of	NRC/ Tuan Le, 02/05/2014	Yes	MHI - 02/06/2014: N0-F500L01 refers to General Design Specification for class 1 Component, N0-FB10L01.	Resolved/ Closed

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		pressurizer surge nozzle, surge line connects to the RCS hot leg piping in Spec. N0-FB500L01 use RG 1.207?			In General Design Specification, RG 1.207 is specified and applied for environmental fatigue evaluation.	
79		1. Flow Diagram, Figure 3-17 of Design Specification Doc. No. N0-GB00002 for system "Letdown line piping upstream of and including the letdown line stop valves RCS-VLV-021", provides class 1 boundary of piping and shows that valve RCS-VLV-021 is a class 1 valve. Also, Table 3-1 Section 3.4 of the Design Specification tabulates the remaining classifications of class 1 piping as specified in Table 3.2-2 of DCD. Where can staff verify the remaining classifications for valve RCS-VLV-021? Staff finds that class 1 boundaries are provided in Figures of Appendix-1, but these figures do not provide any of the classifications of Table 3.2-2 of the DCD.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: RCS-VLV-021 is marked up on the P&ID, which indicates that the valve is in the extent of Equipment class 1. Please see the following pdf file. Valve markup_N0-EE10011_R7.pdf	Resolved/ Closed
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/07/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that RCS-VLV-021 is Equipment class 1 which corresponds exactly to Quality Group A and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11010_R6.pdf	

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80		2. Table 3-2 of Design Specification Doc. No. N0-F700L01 for system "Reactor coolant piping" does not show the applicable "Codes and Standards" column as in Table 3.2-2 of the DCD. Are applicable Codes and Standards for reactor coolant piping specified anywhere else in the Design Specification?	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: In the Design Specification, N0-F700L01, "Principal Construction Code" column in Table 3-2 represents "Codes and Standards" column in Table 3.2-2 in the DCD. Other Design Specifications are in the same manner. Please read "Principal Construction Code" column as "Codes and Standards" column in the DCD.	Resolved/ Closed
		In the resolution to this Question, MHI responded that the "Principal Construction Code" column in Table 3-4 represents "Codes and Standards" column in Table 3.2-2 in the DCD. The staff agrees with this explanation, but Note 3 (1) of Table 3.2-2 states this to be class 1. As a follow up, the staff requests MHI to specify class 1 in this column in order to be consistent with Table 3.2-2 and Table 3.2-3 of the DCD.	NRC 02/06/2014	Yes	MHI - 02/12/2014: MHI will modify Table 3-2 of N0-F700L01 in accordance with the NRC comment. Complete by: 02/21/2014	
81		3. Table 3-1 of Design Specification Doc. No. N0-GB00004 for Main Steam Supply System (MSS) does not list ASME Code Class as in Table 3.2-2 of the DCD. Please provide column for ASME Code Class in this table or elsewhere in the Design Specs. Also, staff could not find the classifications of all the valves listed for this system in the design specification.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: In the Design Specification, N0-GB00004, "Principal Construction Code" column in Table 3-2 represents "Codes and Standards" column in Table 3.2-2 in the DCD. Other Design Specifications are in the same manner. Please read "Principal Construction Code" column as "Codes and Standards" column in the DCD. The scope of design specification Doc No. N0-GB00004 is Main steam piping inside CV. Therefore, there is no description about valves in this design specification. MSS-VLV-531A,B,C,D, MSS-SMV-515A,B,C,D, MSS-HCV-565,575,585,595, MSS-PCV-515,525,535, 545, MSS-MOV-508A,B,C,D, MSS-SRV-509A,B,C,D, 510A,B,C,D, 511A,B,C,D, 512A,B,C,D, 513A,B,C,D and 514A,B,C,D are marked up on the P&ID, which indicates that these valves are in	Resolved/ Closed

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
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					the extent of Equipment Class 2. Please see the following pdf file. Valve markup_N0-EE10071_R10.pdf	
		In the resolution to this Question, MHI provided P&IDs and a legend. The legend to the P&IDs only provides "Piping Class" and "Equipment Class." Neither the P&ID nor the legend provides remaining classification information from DCD Table 3.2-2. As a follow up, MHI is requested to provide this information on P&IDs or elsewhere in the Design Specification for components such as piping and valves.	NRC 02/06/2014	Yes	MHI - 02/14/2014: P&ID cannot express all the information described in DCD Table 3.2-2. For example, although it is one line on the P&ID, the line is composed of several piping elements in fact. All the information associated with each element can't be drawn on P&ID. MNES/MHI would like to clarify this issue in a call conference. MHI - 02/27/2014: The valve list in the system design package shows that MSS-VLV-531A,B,C,D, MSS-SMV-515A,B,C,D, MSS-HCV-565,575,585,595, MSS-PCV-515,525,535, 545, MSS-MOV-508A,B,C,D, MSS-SRV-509A,B,C,D, 510A,B,C,D, 511A,B,C,D, 512A,B,C,D, 513A,B,C,D and 514A,B,C,D are Equipment class 2 which corresponds exactly to Quality Group B and seismic Category I, as described in the "SSCs Classification Principles", N0-AA31000 R6. Please see the following pdf file. N0-EE11070_R7.pdf	
82		4. Data sheet 1.0 of Design Specification Doc. No. N0-FC02501 for Spent fuel pit heat exchangers only lists seismic category for this heat exchanger. Staff is unable to locate other classification as listed in Table 3.2-2 of the DCD in this Design Specification.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: "Equipment Class" and "Quality Group" listed in Table 3.2-2 of the DCD correspond to the applicable codes and classifications. In this case, Equipment Class 3 and quality group C correspond to ASME Code, Section III, Class 3 as the applicable code. "Quality Assurance Classification" corresponds to the applicable quality assurance	Resolved/ Closed

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					requirement level for suppliers. In this case, Quality Assurance Classification Q, correspond to the QA requirements of "nuclear safety related" to suppliers. The applicable code and QA requirements are provided in Data sheet 1.0 Design Requirements/conditions (a) code and (c) safety of this specification. "Equipment Class", "Quality Group" and "Quality Assurance Classification" are not shown in the design specification, because these are not applicable directly to suppliers.	
83		5. Table 1 attached to audit Plan, Lists "CC" as ASME Code Class for Containment vessel in Containment System. Whereas, DCD Table 3.2-2 lists ASME Code Class as MC. This needs to be checked/corrected.	NRC/ Sardar Ahmed, 02/05/2014	Yes	MHI - 02/06/2014: In DCD Table3.2-2, "MC" is just one of applicable codes for Containment vessel. All the applicable codes are described in N0-FH00001 Revision 4 "PCCV Design Spec" Table 3.1. The applicable codes and standards for Containment System in Table3.2-2 of DCD will be reviewed and corrected, if necessary.	RAI Open Item
		83. As a follow up to this Question, MHI will consider changing the ASME Code Class CC listed in Table 1 to match Table 3.2-2 of the DCD.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The staff and MHI agreed that the applicable codes and standards for the Containment System in DCD Tier 2, Table 3.2-2 should be corrected. The staff will issue a follow-up RAI to address the issue. In addition, MHI will update N0-FH00001 and make it available for staff review in a future follow-up audit. Complete by: future follow-up audit	
84		1. Section 3.2.2 "ASME Code and Plant Classifications" of Design Specification Doc. No. N0-FH00001 for Containment Vessel, listed Equipment class 2, seismic Category 1 and Quality Group B. This agrees with DCD Table 3.2-2 except that DCD Table 3.2-2 lists Quality Group N/A for Containment Vessel. Please check/correct this discrepancy. Also staff could not	NRC/ Sardar Ahmed, 02/06/2014	Yes	In DCD, Quality Group was changed to N/A from B to reflect the RAI 914-3665 response (Question No.03.02.02-22). The design specification will be updated to be consistent with DCD. ASME Code Class for PCCV is shown in Table 3.1. Quality Assurance Classification for	Confirmatory

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		locate ASME Code Class and Quality Assurance Classification for this component. Please provide information as to where these classification data is transferred from DCD Table 3.2-2 to Design Specification.			PCCV is shown in Section 1.3 "Quality Assurance" B.	
		84. In response to this Question, MHI indicated that the design specification will be updated to be consistent with DCD. The staff will confirm this during the follow up audit.	NRC 02/07/2014	Yes	MHI - 02/14/2014: The design specification will be updated to be consistent with DCD by the follow up audit. Complete by: future follow-up audit	
85		2. Section 1.3.4 Design Specification Doc. No. N0-FH00202 for Equipment hatch listed Equipment Class MC, Section 9.1 listed Quality Group B and Section 3.2.1 (i) list seismic Category 1 for this component. This agrees with DCD Table 3.2-2 except that DCD Table 3.2-2 lists Quality Group NA for Equipment hatch. Please check/correct this discrepancy. Also staff could not locate ASME Code Class and Quality Assurance Classification for this component. Please provide information as to where these classification data is transferred from DCD Table 3.2-2 to Design Specification.	NRC/ Sardar Ahmed, 02/06/2014	Yes	In DCD, Quality Group was changed to N/A from B to reflect the RAI 914-3665 response (Question No.03.02.02-22). The design specification will be updated to be consistent with DCD. In Design Specification Doc. N0-FH00201, ASME Code Class is identified in Subsection 1.3.3. On the other hand, "Quality Assurance Classification" corresponds to the applicable quality assurance requirement level for suppliers. In this case, Quality Assurance Classification Q, correspond to the QA requirements of "nuclear safety related" to suppliers. Quality Assurance Classification is not shown in the design specification, because it is not applicable directly to suppliers.	Resolved/ Closed
		In response to this Question, MHI indicated that the design specification will be updated to be consistent with DCD. The staff will confirm this during the follow up audit.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will update this design specification by February 21. Complete by: 02/21/2014	
86		3. Section 1.3.3 Design Specification Doc. No. N0-FH00201 for Personnel Airlock listed Equipment Class MC, Section 9.1 listed Quality Group B and section 3.2.1 (i) list seismic category 1 for this component. This agrees with DCD Table 3.2-2 except that DCD	NRC/ Sardar Ahmed, 02/06/2014	Yes	In DCD, Quality Group was changed to N/A from B to reflect the RAI 914-3665 response (Question No.03.02.02-22). The design specification will be updated to be consistent with DCD. In Design Specification Doc. N0-	Resolved/ Closed

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
Item No.	Document #	Comment	Individual and Org./ Date	*Yes or No	Resolution	
		Table 3.2-2 lists Quality Group NA for Equipment hatch. Please check/correct this discrepancy. Also staff could not locate ASME Code Class and Quality Assurance Classification for this component. Please provide information as to where these classification data is transferred from DCD Table 3.2-2 to Design Specification.			FH00202, ASME Code Class is identified in Subsection 1.3.4. On the other hand, "Quality Assurance Classification" corresponds to the applicable quality assurance requirement level for suppliers. In this case, Quality Assurance Classification Q, correspond to the QA requirements of "nuclear safety related" to suppliers. Quality Assurance Classification is not shown in the design specification, because it is not applicable directly to suppliers.	
		In response to this Question, MHI indicated that the design specification will be updated to be consistent with DCD. The staff will confirm this during the follow up audit.	NRC 02/06/2014	Yes	MHI - 02/14/2014: MHI will update this design specification by February 21. Complete by: 02/21/2014	
87		4. Data sheets included in Design Specification Doc. No. N0-FC01501 for "Essential chilled water compression tanks" is mostly blank. Staff is unable to locate any of the Seismic or Quality Group Classifications tabulated in Table 3.2-2 of the DCD in these Data sheets or anywhere in the Design Specifications. Please provide information as to where these classification data is transferred from DCD Table 3.2-2 to Design Specification.	NRC/ Sardar Ahmed, 02/06/2014	Yes	Seismic classification is shown in Data sheet 1.0 Vessel Design Requirements (d) Seismic Classification of this specification. "Quality Group" listed in Table 3.2-2 of the DCD corresponds to the applicable codes and classifications. In this case, quality group C corresponds to ASME Code, Section III, Class 3 as the applicable code. "Quality Assurance Classification" corresponds to the applicable quality assurance requirement level for suppliers. In this case, Quality Assurance Classification Q corresponds to the QA requirements of "nuclear safety related" to suppliers. The applicable code and QA requirements are provided in Data sheet 1.0 Design Requirements/conditions (a) Code and (c) Safety Classification of this specification. "Equipment Class", "Quality Group" and "Quality Assurance Classification" are not shown in the design specification, because	Resolved/ Closed

DCD RAI Number and Related DCD Chapter, Section, Table and/or Figure: DESIGN AND PROCUREMENT SPECIFICATIONS					Organization: NRC Consolidated By: NRC Date Comments Submitted: 02/03/2014	Item Status
Item No.	Document #	Comment	Individual and Org./ Date	*Yes or No	Resolution	
					these are not applicable directly to suppliers.	
		In response to this Question, MHI indicated that Quality Assurance Classification is not shown in the design specification as it is not applicable directly to suppliers. The staff considers it necessary for the suppliers to know whether quality assurance requirements of 10 CFR Part 50, Appendix B must be applied.	NRC 02/06/2014	Yes	MHI - 02/14/2014: The quality assurance requirements for suppliers are shown in Data sheet 1.0 (c) Safety Classification as "Safety Related" of this specification. "Safety Related" means the application of the quality assurance requirements of 10 CFR Part 50 Appendix B.	

Yes indicates that MHI's response is required

No indicates that MHI's immediate response is not required but feedback needs to be considered and tracked