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November 7, 2008

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco,

Docket No. 52-021
MHI Ref: UAP-HF-08259

Subject: Transmittal of COL Information Update for US-APWR Design Control Document Revision 1

Reference: 1) CP-200801264 Log # TXNB-08024 from M. L. Lucas (Luminant) to U.S. NRC,"COMBINED LICENSE APPLICATION FOR COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4 PROJECT NO. 0754" dated on September 19, 2008
2) Letter MHI Ref: UAP-HF-08153 from Y. Ogata (MHI) to U.S. NRC, "Submittal of US-APWR Design Control Document Revision 1 in Support of Mitsubishi Heavy Industries, Ltd.'s Application for Design Certification of the US-APWR Standard Plant Design" dated on August 29, 2008.

During the acceptance review of the combined license application for Comanche Peak 3 and 4 (Reference 1, "R-COLA"), which incorporates by reference the Mitsubishi Heavy Industries, Ltd. (MHI) design certification application for the US-APWR Standard Plant Design (Reference 2, "DCD"), the U.S. Nuclear Regulatory Commission ("NRC") Staff has raised questions about COL holder items in the R-COLA. In response, MHI has performed a comprehensive review of those COL information items in the DCD that are identified as COL holder items in the R-COLA, which is summarized in Enclosure 1.

This review examined both the information required for the NRC's licensing review and whether the DCD already contained this information. The examination reached the following conclusions:

1. For some COL information items, the DCD should be supplemented to provide the additional information necessary for the NRC's licensing review .
2. For some COL information items, sufficient information for the NRC's licensing review is already provided in the DCD.
3. For other COL information items, the information specified by the COL item is not required for the NRC's licensing review.

Based on these conclusions, some of these COL information items can be deleted from the DCD. In addition, MHI's approach meant to minimize the changes to the DCD.

With this letter, MHI transmits to the NRC Staff the results of its comprehensive examination and the proposed updates to be made to the COL information items in the DCD based on these results. These updates will be incorporated into future DCD revisions. MHI believes that the proposed updates, including the supplemental information to be provided in the DCD, will facilitate the NRC's review of the DCD, the R-COLA, and subsequent COLAs.

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MHI is also working closely with the R-COL applicant, Luminant Generation Company LLC, to take further actions related to the NRC's acceptance review of the R-COLA.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this letter. His contact information is provided below.

Sincerely,

Y. Ogata

Yoshiki Ogata,
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. COL Information Update for the US-APWR DCD

CC: J. A. Ciocco
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Docket No.52-021
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Enclosure 1

UAP-HF-08259
Docket No. 52-021

COL Information Update for the US-APWR DCD

November 2008

1. General Description

During the acceptance review of the combined license application for Comanche Peak 3 and 4 (Reference 1, "R-COLA"), which incorporates by reference the Mitsubishi Heavy Industries, Ltd. (MHI) design certification application for the US-APWR Standard Plant Design (Reference 2, "DCD"), the U.S. Nuclear Regulatory Commission ("NRC") Staff has raised questions about COL holder items in the R-COLA. In response, MHI has performed a comprehensive review of the license information related to the associated COL Information items in the DCD. This enclosure summarizes the results of this examination.

2. Examination Results

MHI has undertaken a comprehensive examination of those COL information items in the DCD that are identified as COL holder items in the R-COLA. This examination reviewed available NRC licensing guidance to identify the information required for the NRC's licensing review associated with the COL information item and reviewed the DCD to determine whether the information was already made available in the DCD. This examination reached the following conclusions:

1. For some COL information items, the DCD should be supplemented to provide the additional information necessary for the NRC's licensing review.
2. For some COL information items, sufficient information for the NRC's licensing review is already provided in the DCD.
3. For other COL information items, the information specified by the COL item is not required for the NRC's licensing review.

In each of these instances, some of the related COL information items can be deleted in the DCD. In addition, MHI's approach meant to minimize the changes to the DCD.

Table 1 summarizes the examination results. The table lists the COL information items in the DCD that are identified as COL holder items in the R-COLA. For each COL information item, the table identifies the information required for the NRC's licensing review based on available regulatory guidance, such as Regulatory Guide 1.206 and NUREG-0800 Standard Review Plan. The table also identifies (i) updates to be made to the COL information items in the DCD based on the examination results and (ii) the basis for each update (i.e. the reasons related to the above three conclusions). In addition, if the description in the DCD needs to be updated, the preliminary drafts of the updates (including supplemental information as defined in #1 above) are also identified and attached. The proposed updates will be incorporated into future DCD revisions.

MHI believes that the proposed updates, including the supplemental information to be provided in the DCD, will facilitate the NRC's review of the DCD, the R-COLA, and subsequent COLAs.

References:

[1] CP-200801264 Log # TXNB-08024 from M. L. Lucas (Luminant) to U.S.

NRC,"COMBINED LICENSE APPLICATION FOR COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4 PROJECT NO. 0754" dated on September 19, 2008

[2] Letter MHI Ref: UAP-HF-08153 from Y. Ogata (MHI) to U.S. NRC, "Submittal of US-APWR Design Control Document Revision 1 in Support of Mitsubishi Heavy Industries, Ltd.'s Application for Design Certification of the US-APWR Standard Plant Design" dated on August 29, 2008.

Table 1 Examination Results of COL Holder Item (1 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 1.4(1)	The COL Applicant is to identify major agents, contractors, and participants for the COL application development, construction, and operation.	1.4.1 1.4.2.3 – 1.4.2.6		H	a	1.4.3	RG1.206 C.I.1.4 "In this section, the COL applicant should identify the primary agents or contractors for the design, construction, and operation of the nuclear power plant."	No change of this COL item.	NA	NA
COL 3.5(1)	The COL Applicant is to prepare plant procedures that specify equipment required for maintenance or undergoing maintenance is to be removed from containment prior to operation, moved to a location where it is not a potential hazard to SSCs important to safety, or seismically restrained to prevent it from becoming a missile.	3.5.1.1.2.1		H	b	3.5.1.1.2.1 3.5.4	SRP 3.5.1.2 III. Review Procedures "3. The reviewer determines whether controls ensure that unsecured maintenance equipment, including that required for maintenance and that undergoing maintenance, will be removed from containment prior to operation, moved to a location where it is not a potential hazard to SSCs important to safety, or seismically restrained to prevent it from becoming a missile."	No change of this COL item.	NA	NA
COL 3.5(2)	The COL Applicant is to commit to actions to maintain P1 within this acceptable limit as provided by turbine and rotor design features, material specifications and recommended inspections during preservice and inservice periods.	3.5.1.3.2		H	b	3.5.1.3.2 3.5.4	SRP 3.5.1.3 SRP Acceptance Criteria "3.3. The staff believes that maintaining an acceptably low missile generation probability, P1, by means of a suitable program of periodic testing and inspection is a reliable method for ensuring that the objective of precluding generation of turbine missiles (and hence the possibility of damage to safety-related structures, systems, and components by those missiles) can be met. The NRC safety objective for turbine missiles (i.e., P4 should be < 10-7 per year per plant) is best expressed in terms of either of two sets of criteria applied to missile generation probability, P1. All applicants are expected to commit to operating criteria (see Table 3.5.1.3-1) appropriate to the applicable turbine orientation. One set of criteria should be applied to favorably oriented turbines; the other should be applied to unfavorably oriented turbines.."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (2 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution: COL Applicant Item	COL Item Resolution: COL Holder Item	COL Item Resolution: Rationale	DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL 3.6(1)	The COL Applicant is to identify the site-specific systems or components that are safety-related or required for safe shutdown that are located near high-energy or moderate-energy piping systems, and are susceptible to the consequences of these piping failures. The COL Applicant is to provide a list of site-specific high-energy and moderate-energy piping systems, which includes a description of the layout of all piping systems where physical arrangement of the piping systems provides the required protection, the design basis of structures and compartments used to protect nearby essential systems or components, or the arrangements to ensure the operability of safety-related features where neither separation nor protective enclosures are practical. Additionally, the COL Applicant is to provide the failure modes and effect analyses that verifies the consequences of failures in site-specific high-energy and moderate-energy piping does not affect the ability to safely shut down the plant.	3.6.1.3		H	a	3.6.1.3 3.6.4	RG1.206 C.I.3.6.1 "(1) Identification of systems or components important to plant safety or shutdown that are located near to high- or moderate-energy piping systems and that are susceptible to the consequences of failures of these piping systems" "(2) Providing a list of high- and moderate-energy lines," "(3) Providing a failure mode and effects analysis to verify that the consequences of failures of high and moderate-energy lines do not affect the ability to safely shut down the plant,"	No change of this COL item.	NA	NA
COL 3.6(4)	The COL Applicant is to implement the criteria of the following subsections for defining break and crack locations and configurations, and the locations and configurations of design basis pipe break and crack locations and configurations for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to identify the postulated rupture orientation of each postulated break location for site-specific high-energy and moderate-energy piping systems. The COL Applicant is to implement the appropriate methods to assure that as-built configuration of site-specific high-energy and moderate-energy piping systems is consistent with the design intent and provide as-built drawings showing component locations and support locations and types that confirms this consistency.	3.6.2.1		H	a	3.6.2.1 3.6.4	RG1.206 C.I.3.6.2 "The applicant should describe the criteria for determining the location and configuration of postulated breaks and cracks in high- and moderate-energy piping inside and outside of containment;" RG1.206 C.I.3.6.2.1 "The applicant should provide the criteria used to determine the location and configuration of postulated breaks and cracks in those high- and moderate-energy piping systems for which separation or enclosure cannot be achieved."	No change of this COL item.	NA	NA
COL 3.6(6)	The COL Applicant is to discuss the implementation of criteria dealing with special features, if any.	3.6.2.5		H	a	3.6.2.5 3.6.4	RG1.206 C.I.3.6.2.5 "The applicant should discuss the implementation of criteria dealing with special features, such as an augmented ISI program or use of special protective devices (such as pipe whip restraints)."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (3 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution							
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale	DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL 3.7(9)	The COL Applicant is to assure that the design or location of any site-specific seismic category I SSCs, for example buried yard piping or duct banks, will not expose those SSCs to possible impact due to the failure or collapse of non-seismic category I structures, or with any other SSCs that could potentially impact, such as heavy haul route loads, transmission towers, non safety-related storage tanks, etc.	3.7.2.8		H	a	3.7.2.8 3.7.5	RG1.206 C.I.3.7.2.8 "The applicant should describe the seismic design of non-seismic Category I structures whose continued function is not required, but whose failure could adversely affect the safety function of SSCs or result in incapacitating injury to control room occupants. The description should include the design criteria that will be applied to ensure protection of seismic Category I structures from structural failure of non-Category I structures as a result of seismic effects."	No change of this COL item.	NA	NA
COL 3.7(11)	It is the responsibility of the COL Applicant to confirm the masses and frequencies of the PCCV polar crane and fuel handling crane and to determine if coupled site-specific analyses are required.	3.7.2.3.4		H	a	3.7.2.3.4 3.7.5	SRP 3.7.2 SRP Acceptance Criteria "3. B. Decoupling Criteria for Subsystems."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (4 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution: COL Applicant Item	COL Item Resolution: COL Holder Item	COL Item Resolution: Rationale	DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL 3.7(15)	The COL Applicant is to assure that a time-history analyzer/recorder is provided which has the capability to provide pre-event recording time of 3 seconds minimum and post-event recording time of 5 seconds minimum, and to record at least 25 minutes of sensed motion	3.7.4.2		H	a	3.7.4.2 3.7.5	RG1.206 C.I.3.7.4.1 "The applicant should discuss the proposed seismic instrumentation program and compare it with the seismic instrumentation guidelines of RG 1.12, "Instrumentation for Earthquakes." " RG 1.12 C. REGULATORY POSITION 4. INSTRUMENTATION CHARACTERISTICS 4.4 - 4.6 "4.4 The instrumentation should record, at a minimum, 3 seconds of low-amplitude motion prior to seismic trigger actuation, continue to record the motion during the period in which the earthquake motion exceeds the seismic trigger threshold, and continue to record low-amplitude motion for a minimum of 5 seconds beyond the last exceedance of the seismic trigger threshold. 4.5 The instrumentation should be capable of recording 25 minutes of sensed motion. 4.6 The battery should be of sufficient capacity to power the instrumentation to sense and record (see Regulatory Position 4.5) 25 minutes of motion over a period of not less than the channel check test interval (Regulatory Position 8.2). This can be accomplished by providing enough battery capacity for a minimum of 25 minutes of system operation at any time over a 24-hour period, without recharging, in combinati a battery charger whose line power is connected to an uninterruptable power or a line source with an alarm that is ch at least every 24 hours. Other combina of larger battery capacity and alarm inte may be used."	This COL item will be deleted. Supplemental information will be provided to the DCD. See the attachment.	Design information of a time-history analyzer/recorder has already been in the DCD Subsection 3.7.4.2. Therefore, this COL item will be deleted.	DCD #3.7(15)
COL 3.7(18)	It is the responsibility of the COL Applicant to develop a site-specific instrument surveillance program including calibration and testing that complements the US-APWR seismic instrumentation program, and to develop site-specific maintenance and repair procedures that maximize the number of instruments in service during plant operation and shutdown.	3.7.4.5		H	b	3.7.4.5 3.7.5	RG1.206 C.I.3.7.4.5 "The applicant should discuss requirements for instrument surveillance testing and calibration pertaining to instrument operability and reliability."	This COL item will be deleted. See the attachment.	The requirements for instrument surveillance testing and calibration has already been in the DCD (Section 3.7.4.5). Therefore, this COL item will be deleted.	DCD #3.7(18)
COL 3.7(19)	It is the responsibility of the COL Applicant to provide the site-specific details of the seismic instrumentation implementation plan based on the discussion in Subsections 3.7.4.1 through 3.7.4.5.	3.7.4.6		H	b	3.7.4.6 3.7.5	RG1.206 C.I.3.7.4.6 "the applicant should provide sufficient detail for the staff to be able to assess the adequacy of the program implementation."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (5 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 3.8(1)	It is the responsibility of the COL Applicant to perform reconciliation evaluations when the as-built properties become available.	3.8.1.4.1.3		H	a	3.8.1.4.1.3 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(1)
COL 3.8(2)	It is the responsibility of the COL Applicant to assure that wobble and curvature coefficients used in computing prestressing losses due to friction are consistent with the tendon system corrosion protection coatings present at the time of prestressing.	3.8.1.5.1.2 3.8.1.5.2.2		H	a	3.8.1.5.1.2 3.8.1.5.2.2 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(2)
COL 3.8(4)	It is the responsibility of the COL Applicant to select the site-specific concrete ingredients and to develop a concrete mix design that produces the concrete design strengths specified for the US-APWR PCCV and conform to all applicable material and quality control requirements.	3.8.1.6		H	a	3.8.1.6 3.8.6	RG1.206 C.I.3.8.1.6 "The applicant should identify materials used in the construction of the containment, with emphasis on the extent of compliance with Article CC-2000 of the ASME Code, Section III, Division 2, and/or to the specific edition, date, or addenda of design codes, standards, specifications, regulations, GDC, regulatory guides, and other industry standards."	This COL item will be deleted. See the attachment.	Design information of the concrete ingredients will be added to DCD (Subsection 3.8.1.6). Therefore, this COL item will be deleted.	DCD #3.8(4)
COL 3.8(5)	It is the responsibility of the COL Applicant to verify these concrete creep and shrinkage parameters by testing of the site-specific concrete mix, and the PCCV design analysis is revised if the final test results affect the conclusions of the PCCV calculation.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(5)
COL 3.8(6)	It is the responsibility of the COL Applicant to develop a site-specific specification that covers the concrete production and batch plant requirements.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(6)
COL 3.8(8)	It is the responsibility of the COL Applicant to produce a site-specific liner plate specification to define the material and welding requirements, testing, and quality requirements.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(8)
COL 3.8(9)	The COL Applicant is to produce another site-specific specification for the PCCV personnel airlocks and equipment hatch.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(9)
COL 3.8(12)	It is the responsibility of the COL Applicant to produce a site-specific specification that covers the material requirements for the Prestressing System.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(12)
COL 3.8(13)	It is the responsibility of the COL Applicant to produce a site-specific specification to define the material and special material testing requirements for the reinforcing steel system including bars and splices, and all material is to conform to Article CC-2300 of the ASME Code, Section III.	3.8.1.6		H	a	3.8.1.6 3.8.6	Following the related ASME	This COL item will be deleted. See the attachment.	The COL Applicant does not need to clarify requirements of ASME in DCD, because US-APWR generally conform to ASME requirements.	DCD #3.8(13)

Table 1 Examination Results of COL Holder Item (6 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 3.8(14)	It is the responsibility of the COL Applicant to establish a site-specific program for testing and ISI of the PCCV, including periodic inservice surveillance and inspection of the PCCV liner and prestressing tendons in accordance with ASME Code Section XI, Subsection IWL	3.8.1.7		H	b	3.8.1.7 3.8.6	RG1.206 C.I.3.8.1.7 "The applicant should describe the testing and ISI, including milestones, for the containment,"	No change of this COL item.	NA	NA
COL 3.8(22)	The COL Applicant is to address monitoring of seismic category I structures in accordance with the requirements of NUMARC 93-01 (Reference 3.8-28) and 10 CFR 50.65 (Reference 3.8-29) as detailed in RG 1.160 (Reference 3.8-30).	3.8.4.7		H	b	3.8.4.7 3.8.6	RG1.206 C.I.3.8.4.7 "This section should specify any testing and ISI requirements." SRP 3.8.4 SRP Acceptance Criteria "7. Testing and Inservice Surveillance Requirements. For Seismic Category I structures outside containment, structures monitoring and maintenance requirements are acceptable if program is in accordance with 10 CFR 50.65 and RG 1.160." RG1.160 C. REGULATORY POSITION "1.5 Monitoring Structures An acceptable structural monitoring program for the purposes of the maintenance rule should have the following attributes. - Consistent with the NUMARC 93-01 approach for systems and components, most structures would be monitored in accordance with Paragraph (a)(2), provided there is not significant degradation of the structure. - The condition of all structures within the scope of the rule would be assessed periodically. The appropriate frequency of the assessments would be commensurate with the safety significance of the structure and its condition. - Licensees would evaluate the results of the assessments to determine the extent and rate of any degradation of the structures. Deficiencies would be corrected in a timely manner commensurate with their safety significance, their complexity, and other regulatory requirements."	This COL item will be revised in the DCD to specify testing and ISI requirements. See the attachment.	To follow the regulatory requirements clearly.	DCD #3.8(22)

Table 1 Examination Results of COL Holder Item (7 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 3.9(2)	The first COL Applicant, at the time of application, is to provide results of the vibration assessment program consistent with guidance of RG 1.20. Subsequent COL Applicant need only provide information in accordance with the applicable portion of position C.3 of RG 1.20 for Non-Prototype internals.	3.9.2.4.1		H	b	3.9.2.4.1 3.9.9	RG1.206 C.I.3.9.2.4 "The applicant should describe the preoperational and startup test program for FIV testing of reactor internals and demonstrate that FIV experienced during normal operation will not cause structural failure or degradation. For a prototype reactor, the applicant should describe flow modes, vibration monitoring sensor types and locations, procedures and methods to be used to process and interpret the measured data, planned visual inspections, planned comparisons of test results with analytical predictions, and possible supplementary tests (e.g., component vibration tests, flow tests, scaled model tests). For a nonprototype reactor, the applicant should provide references to the reactor that is prototypical of the reactor (design included in the application), along with a brief summary of test and analysis results."	No change of this COL item.	NA	NA
COL 3.9(6)	The COL Applicant is to provide the program plan for IST of dynamic restraints in accordance with ASME OM Code.	3.9.6.4		H	b	3.9.6.4 3.9.9	RG1.206 C.I.3.9.6.4 "(2) describe the IST program (including test frequency and duration and examination methods) related to visual inspections (e.g., checking for degradation, cracked fluid reservoirs, missing parts, and leakage) and functional testing of dynamic restraints; describe and state the basis for dynamic restraint testing"	This COL item will be revised in the DCD to identify the implementation milestone of the program. Supplemental information will be provided to DCD Subsections 3.9.6.4. See the attachment.	Description of the operational program will be added to the DCD Subsection 3.9.6.4 to fortify the information. This COL item will be revised in the DCD to identify the implementation milestone of the program.	DCD #3.9(6)
COL 3.9(7)	The COL Applicant is to provide alternate method of valve position indicator operation and justification for valves in the IST program plan.	3.9.6.3		H	b	3.9.6.3 3.9.9	RG1.206 C.I.3.9.6.3 "(2) proposed methods for measuring the reference values and IST values for power-operated valves (POVs), including motor-operated valves (MOVs), air-operated valves, hydraulic-operated valves, and solenoid-operated valves"	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (8 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale					
COL 3.9(8)	The COL Applicant is to administratively control the edition and addenda to be used for the IST program plan for pumps, valves, and dynamic restraints.	3.9.6		H	b	3.9.6 3.9.9	RG1.206 C.I.3.9.6 "This section should describe the functional design and qualification provisions and inservice testing (IST) programs for certain safety-related pumps, valves, and dynamic restraints (snubbers) (i.e., those safety-related pumps, valves, and snubbers typically designated as Class 1, 2, or 3 under Section III of the ASME Code, plus those pumps, valves, and snubbers not categorized as Class 1, 2, or 3 but considered to be safety-related) to ensure that they will be in a state of operational readiness to perform their safety functions throughout the life of the plant."	No change of this COL item.	NA	NA
COL 3.10(1)	The COL Applicant is to document and implement an equipment qualification program for seismic category I equipment and provide milestones and completion dates.	3.10.4.1		H	b	3.10.4.1 3.10.5	RG1.206 C.I.3.10.4 "the applicant should include an implementation program, including implementation program, including milestones and completion dates with appropriate information submitted for staff review and approval prior to installation and equipment."	No change of this COL item.	NA	NA
COL 3.10(3)	The COL Applicant is to develop and maintain an equipment qualification file that contains a list of systems, equipment, and equipment support structures, as defined above, and summary data sheets referred to as an equipment qualification summary data sheet (EQSDS) of the seismic qualification for each piece of safety-related seismic category I equipment (i.e., each mechanical and electrical component of each system), which summarize the component's qualification.	3.10		H	b	3.10 3.10.5	SRP 3.10 SRP Acceptance Criteria "4. GDC 1 and 10 CFR Part 50, Appendix B, Criteria XVII establish requirements for records concerning the qualification of equipment. To satisfy these requirements, complete and auditable records must be available, and the applicant must maintain them, for the life of the plant, at a central location. These files should describe the qualification method used for all equipment in sufficient detail to document the degree of compliance with the criteria of this SRP section. These records should be updated and kept current as equipment is replaced, further tested, or otherwise further qualified."	No change of this COL item.	NA	NA
COL 3.10(5)	Components that have been previously tested to IEEE Std 344-1971 prior to submittal of the DCD are reevaluated to justify the appropriateness of the input motion and requalify the equipment, if necessary. The COL Applicant is to requalify the component using biaxial test input motion unless the applicant provides justification for using a single-axis test input motion.	3.10.2		H	b	3.10.2 3.10.5	SRP 3.10 SRP Acceptance Criteria "1. A. v. Components that have been previously tested to IEEE Std 344-1971 should be reevaluated to justify the appropriateness of the input motion used and requalified if necessary. vi. Components that have been previously tested to IEEE Std 344-1971 should be requalified using biaxial test input motions unless the applicant provides justification for using a single-axis test input motion."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (9 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 3.10(10)	The COL Applicant is to establish an equipment seismic qualification program which addresses all requisite aspects of seismic and dynamic qualification of mechanical and electrical equipment.	3.10		H	b	3.10 3.10.5	RG1.206 C.I.3.10.4 "the applicant should include an implementation program, including implementation program, including milestones and completion dates with appropriate information submitted for staff review and approval prior to installation and equipment."	This COL item will be deleted. See the attachment.	The present COL Item can be combined with COL 3.10(1).	DCD #3.10(10)
COL 3.13(1)	The COL Applicant is to provide information on procedures for effective corrosion protection for the stud bolting following head removal and allow the ISI to be performed on the removed RV stud bolting.	3.13.1.2.3		H	b	3.13.2.3 3.13.3	Nothing in particular	This COL item will be deleted. See the attachment.	No regulatory requirement regarding the procedures for effective corrosion protection for the stud bolting. Therefore, this COL item will be deleted.	DCD #3.13(1)
COL 3.13(2)	The COL Applicant is to provide information on procedures for the final selection of lubricants, sealants, and cleaning fluids.	3.13.1.2.5		H	b	3.13.1.2.5 3.13.3	RG1.206 C.I.3.13.1.2 "The applicant should discuss the use of lubricants and/or surface treatments in mechanical connections secured by threaded fasteners."	This COL item will be deleted. See the attachment.	The discussion of lubricants and sealants is in the DCD subsection 3.13.1.2.5. Therefore, this COL item will be deleted.	DCD #3.13(2)
COL 3.13(4)	The COL Applicant is to address compliance with ISI requirements as summarized in Subsection 3.13.2.	3.13.2		H	b	3.13.2 3.13.3	RG1.206 C.I.3.13.2 "The applicant should demonstrate compliance with the ISI requirements of 10 CFR 50.55a and Section XI of the ASME Code, Division 1."	No change of this COL item.	NA	NA
COL 4.4(1)	The Combined License applicant is to confirm whether the design limits of Min. DNBR described in Section 4.4 are valid based on the relevant plant-specific instrumentation uncertainties, or the safety analysis limit of Min. DNBR value covers the new design limits of Min. DNBR and other DNBR penalties such as rod bow penalty, transition core geometry and/or reserving more core operational flexibilities.	4.4.1.1.2		H	a	4.4.7	RG1.206 C.I.4.4.1 "This section should provide the design bases for the thermal-hydraulic design of the reactor." SRP 4.4 SRP Acceptance Criteria 1 "The assessment of thermal margin should also consider the uncertainties in instrumentation."	No change of this COL item.	NA	NA
COL 5.2(2)	ASME Code Cases that are approved in Regulatory Guide 1.147; The COL applicant addresses Code Cases invoked in connection with the inservice inspection program that are in compliance with Regulatory Guide 1.147.	5.2.1.2		H	b	5.2.1.2 5.2.6	RG1.206 C.I.5.2.1.2 "Applicants should provide a list of ASME Code cases that will be applied to components within the RCPB."	No change of this COL item.	NA	NA
COL 5.2(3)	ASME Code Cases that are approved in Regulatory Guide 1.192; The COL applicant addresses Code cases invoked in connection with the operation and maintenance that are in compliance with Regulatory Guide 1.192.	5.2.1.2		H	b	5.2.1.2 5.2.6	RG1.206 C.I.5.2.1.2 "Applicants should provide a list of ASME Code cases that will be applied to components within the RCPB."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (10 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 5.2(4)	Inservice inspection and testing program for the RCPB; The COL applicant addresses and develops the inservice inspection and testing program for the RCPB, in accordance with Section XI of the ASME Code and 10 CFR 50.55a.	5.2.4.1 Table 13.4-201		H	b	5.2.4.1 5.2.6	RG1.206 C.I.5.2.4.1 "This section should discuss the ISI and testing program for the NRC Quality Group A components of the RCPB (ASME Code, Section III, Code Class 1 components) that complies with the guidelines of 10 CFR 50.55a. It should provide sufficient detail to show that the ISI program meets the requirements of Section XI of the ASME Code. Because the ISI program is an operational program, applicants should describe the program and its implementation with sufficient scope and level of detail to enable the staff to make a reasonable assurance finding regarding its acceptability."	This COL item will be revised to identify the implementation milestone of the program. See the attachment.	Full description of the ISI program is in the DCD (Subsection 5.2.4.1). The remaining COL item is related to the implementation milestone of the program. Therefore, this COL item should be updated accordingly	DCD #5.2(4)
COL 5.2(5)	Preservice inspection and testing program for the RCPB; The COL applicant addresses and develops the preservice inspection and testing program for the RCPB in accordance with Article NB-5280 of Section III, Division I of the ASME Code.	5.2.4.2		H	b	5.2.4.2 5.2.6	RG1.206 C.I.5.2.4.2 "This section should describe the preservice examination program that meets the guidelines of Article NB-5280 of Section III, Division I, of the ASME Code. Because the preservice inspection and preservice testing programs are operational programs, the programs and their implementation milestones"	This COL item will be revised to identify the implementation milestone of the program. See the attachment.	Full description of the PIT program is in the DCD (Subsection 5.2.4.2). The remaining COL item is related to the implementation milestone of the program. Therefore, this COL item should be updated accordingly	DCD #5.2(5)
COL 5.2(10)	Safety and relief valve information; The COL applicant addresses the actual throat area of the pressurizer safety valves and the CS/RHR pump suction relief valves.	5.2.2.4		H	a	5.2.2.4, 5.2.6	RG1.206 C.I.5.2.2.4 "This section should describe the equipment and components of the overpressure protection system, including schematic drawings of the safety and relief valves and a discussion of how the valves operate. It should identify the significant design parameters for each component, including the design, throat area, capacity, and set points of the valves and the diameter, length, and routing of piping."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (11 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale					
COL 5.3(1)	Pressure-Temperature Limit Curves; The COL applicant addresses the use of plant-specific reactor vessel P-T limit curves. Generic P-T limit curves for the US-APWR reactor vessel are shown in Figures 5.3-2 and 5.3-3, which are based on the conditions described in Subsection 5.3.2. However, for a specific US-APWR plant, these limit curves are plotted based on actual material composition requirements and the COL applicant addresses the use of these plant-specific curves.	5.3.2.1 5.3.2.2		H	b	5.3.2.1 5.3.2.2 5.3.4	RG1.206 C.I.5.3.2.1 "This section should describe how the applicant will develop pressure-temperature limit curves for (1) preservice system hydrostatic tests, (2) inservice leak and hydrostatic tests, (3) normal operation, including heatup and cooldown, and (4) reactor core operation." RG1.206 C.I.5.3.2.2 "This section should describe how the applicant will develop operating procedures, that will ensure that the pressure-temperature limits in Section 5.3.2.1 of the FSAR will not be exceeded during any condition of normal operation, including AOO, and system hydrostatic tests. The FSAR should include a commitment that plant operating procedures will ensure that the pressure-temperature limits identified in Section 5.3.2.1 of the FSAR will not be exceeded during any foreseeable upset condition."	No change of this COL item.	NA	NA
COL 5.3(2)	Reactor Vessel Material Surveillance Program; The COL applicant provides a reactor vessel material surveillance program based on information in Subsection 5.3.1.6.	5.3.1.6		H	b	5.3.1.6 5.3.4	RG1.206 C.I.5.3.1.6 "This section should describe the material surveillance program in sufficient detail to provide assurance that the program meets the requirements of Appendix H, "Reactor Vessel Material Surveillance Program Requirements," to 10 CFR Part 50. It should describe the method for calculating neutron fluence for the reactor vessel beltline and the surveillance capsules. Because the material surveillance program is an operational program, as discussed in SECY-05-0197, the program and its implementation milestones should be fully described and reference any applicable standards."	No change of this COL item.	NA	NA
COL 5.3(5)	Preservice and Inservice Inspection; The COL applicant provides the information for preservice and inservice inspection described in Subsection 5.2.4.	5.3.3.7		H	b	5.3.3.7 5.3.4	RG1.206 C.I.5.3.3.7 "This section should summarize the ISI and material surveillance programs and explain their adequacy relative to the guidelines of Appendix H to 10 CFR Part 50 and Section XI of the ASME Code."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (12 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale					
COL 6.1(1)	The COL Applicant complies with the provisions and recommendations provided by ASME NQA-1-1994, Part II when developing programs that support the cleaning of materials and components, cleanness control, and pre-operational flushing for systems that contain austenitic stainless steel components as recommended by RG 1.37. This program includes documentation to verify the compatibility of materials used in manufacturing ESF components with ESF fluids.	6.1.1.2.2		H	b	6.1.1.2.2 6.1.3	RG1.206 C.I.6.1.1.2 (4) "Describe the process used to verify that ESF components and systems are cleaned in accordance with RG 1.37."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	The process description required by RG 1.206 is in the DCD (Subsection 6.1.1.2.2). Therefore, this COL item will be deleted.	DCD #6.1(1)
COL 6.1(2)	The COL Applicant is responsible to develop an augmented ISI program to ensure the structural integrity of pressure-retaining cold-worked austenitic stainless steel components.	6.1.1.1		H	b	6.1.1.1 6.1.3	RG1.206 C.I.6.1.1.1 (3) (c) "Augmented ISI should be proposed to ensure the structural integrity of such components during service."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Augmented ISI is described in the DCD (Subsection 6.6.8). Therefore, this COL item will be deleted.	DCD #6.1(2)
COL 6.1(3)	The COL Applicant is responsible to develop a program to maintain an inventory of all acids and bases within the containment to aid in control of pH within a post-LOCA environment.	6.1.1.2.1		H	b	6.1.1.2.1 6.1.3	RG1.206 C.I.6.1.1.2 (1) "All soluble acids and bases within the containment should be identified and quantified."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Design information of acids and bases in the containment is in the DCD (Subsections 6.3.1.3 and 6.3.2.2.5, and Table 6.3-5. Therefore, this COL item will be deleted.	DCD #6.1(3)
COL 6.1(4)	The COL Applicant is responsible to identify materials within the containment that would yield hydrogen gas by corrosion from the emergency cooling or containment spray solutions, and their use should be limited as much as practicable.	6.1.1.2.1		H	a	6.1.1.2.1 6.1.3	RG1.206 C.I.6.1.1.2 (9) (d) "adequate and sufficient information to determine the adequacy of post-LOCA hydrogen control, including control of the volume of hydrogen gas expected to be generated by metal-water reaction involving the fuel cladding and radiolytic decomposition of the reactor coolant, and corrosion of metals by ECC and CSS" SRP 6.1.1 Technical rationale (6) "Appropriate selection of ESF materials and fluids enhances the ability to reliably perform containment atmosphere cleanup functions, including hydrogen control. ESF materials and fluids, as well as other materials used in containment, are also selected to limit the quantity of hydrogen gas generated following postulated accidents."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Design information of materials that would yield hydrogen gas will be added to the DCD (Subsection 6.1.1.2.1). Therefore, this COL item will be deleted.	DCD #6.1(4)
COL 6.1(5)	The COL Applicant is responsible to identify and quantify all organic materials that exist in significant amounts in the containment (e.g., wood, plastics, lubricants, paint or coatings, electrical cable insulation, and asphalt). Coatings not intended for 60-year service without overcoating should include total overcoating thicknesses expected to be accumulated over the service life of the substrate surface.	6.1.2		H	a	6.1.2 6.1.3	RG1.206 C.I.6.1.2 "The applicant should identify and quantify all organic materials that exist in significant amounts within the containment building."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Design information of all organic materials that exists in significant amounts in the containment is in the DCD (Subsection 6.2.2.3). Therefore, this COL item will be deleted.	DCD#6.1(5)

Table 1 Examination Results of COL Holder Item (13 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 6.2(1)	The COL applicant is responsible to provide best estimates of these heatsinks in the COL application, update the FSAR based on as-built information and confirm the values are bounded by the values in containment analyses.	6.2.1.1.3.4 6.2.1.5.7		H	a	6.2.1.1.3.4 6.2.1.5.7 6.2.8	RG1.206 C.I.6.2.1.1 Tabulate the structural heat sinks within the containment in accordance with Tables 6-4A through 6-4D of this guide. With respect to modeling heat sinks for heat transfer calculations, the applicant should provide and justify the computer mesh spacing used for concrete, steel, and steel-lined concrete heat sinks. It should justify the steel-concrete interface resistance used for steel-lined concrete heat sinks, as well as the heat transfer correlations used in heat transfer calculations. The condensing heat transfer coefficient as a function of time for the most severe hot leg, cold leg (pump suction), cold leg (pump discharge), and steam or feedwater line pipe breaks should be graphically illustrated.	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	The required information related to the heat sinks for containment analysis is in DCD Subsection 6.2.1. DCD Table 6.2.1-9 and 6.2.1-30 describe the maximum and minimum values for containment analysis.	DCD#6.2(1)
COL 6.2(5)	Preparation of a cleanliness, housekeeping and foreign materials exclusion program is the responsibility of the COL applicant. This program addresses other debris sources such as latent debris inside containment. This program minimizes foreign materials in the containment.	6.2.2.3 Table 6.2.2-2R		H	b	6.2.2.3 6.2.8	RG1.206 C.I.6.2.2.2 (3) "compare the design of the recirculation intake structures; and to the positions in RG 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant-Accident." RG1.82 C.1.1.2.1 "Cleanliness programs should be established to clean the containment on a regular basis, and plant procedures should be established for control and removal of foreign materials from the containment."	No change of this COL item.	NA	NA
COL 6.2(6)	As-built pipe run distances from outer containment isolation valve to the containment penetration are provided by the COL applicant.	6.2.4.2		H	a	6.2.4.2 6.2.8	RG1.206 C.I.6.2.4.2 (12) "This table should include the following information: (12) length of pipe from containment to outermost isolation valve (or the maximum length that will not be exceeded)"	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	The pipe length required by RG 1.206 is in the DCD (Subsection 6.2.4.2). Therefore, the list of the as-built pipe length should not have been identified as a COL item.	DCD #6.2(6)
COL 6.2(7)	The operating principle and accuracy of the hydrogen monitor (combustible gas analyzers) are provided by the COL applicant.	6.2.5.2		H	a	6.2.5.2 6.2.8	RG1.206 C.I.6.2.5.2 (1) "the applicant should provide the following information: (1)operating principle and accuracy of the combustible gas analyzers"	This COL item will be deleted. Supplemental information will be provided to the DCD. See the attachment.	Design information of hydrogen monitor will be added to the DCD (Subsections 6.2.5.2 and 6.2.5.3). Therefore, this COL item will be deleted.	DCD #6.2(7)

Table 1 Examination Results of COL Holder Item (14 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 6.2(8)	The COL applicant is responsible for the containment leakage rate testing program including, but not limited to, its preparation, exemptions, equipment, methods, procedures, conduct, limits, acceptance criteria, schedule, and reports.	6.2.6.1		H	b	6.2.6.1 6.2.8	RG1.206 C.I.6.2.6 "this section of the FSAR should fully describe the proposed testing program that complies with the requirements of the GDC and Appendix J to 10 CFR Part 50 and its implementation. Any exemptions from the explicit requirements of the GDC and Appendix J should be identified and justified."	This COL item will be revised in the DCD to identify the implementation milestone of the program. Supplemental information will be provided to DCD Subsections 6.2.6.1-6.2.6.4 to describe the program. See the attachment.	Full description of the operational program will be added to the DCD (Subsection 6.2.6). The remaining COL item is related to the implementation milestone of the program. Therefore, this COL item should be updated accordingly.	DCD #6.2(8)
COL 6.2(9)	Selection, purchase, and installation of specific insulation products are controlled by administrative programs developed by the COL applicant.	6.2.2.3 Table 6.2.2-2R		H	b	6.2.2.3 6.2.8	RG1.206 C.I.6.2.2.2 "compare the design of the recirculation intake structures; and to the positions in RG 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant-Accident." RG1.82 C.1.1.2.2 "Insulation types (e.g., fibrous and calcium silicate) that can be sources of debris that is known to more readily transport to the sump screen and cause higher head losses may be replaced with insulations (e.g., reflective metallic insulation) that transport less readily and cause less severe head losses once deposited onto the sump screen. If insulation is replaced or otherwise removed during maintenance, abatement procedures should be established to avoid generating latent debris in the containment."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Insulation types used and restricted in the US-APWR according to debris formation, are described in DCD Table 6.2.2-2, No.1.1.2.2 and a DCD reference, "US-APWR Sump Strainer Performance" (Ref. 6.2-34). DCD description will be updated accordingly.	DCD #6.2(9)
COL 6.3(3)	The COL Applicant prepares normal, abnormal and emergency operating procedures for the ECCS, to include Safety Injection Pumps, Accumulators, and Emergency Letdown, including emergency operating instruction for feed-and-bleed operation.	6.3.2.8		H	b	6.3.2.8 6.3.6	RG1.206 C.I.6.3.2.8 "The applicant should identify all manual actions that an operator is required to take in order for the ECCS to operate properly."	This COL item will be deleted. See the attachment.	No regulatory requirement to address operating procedures for the ECCS in this section. The manual actions that an operator is required are identified in DCD subsection 6.3.2.8. Therefore, this COL item will be deleted.	DCD #6.3(3)
COL 6.3(4)	The COL Applicant is responsible for developing a program to maintain RWSP water chemistry including surveillance test procedures.	6.3.2.2.4		H	b	6.3.2.2.4 6.3.6	Nothing in particular	This COL item will be deleted. See the attachment.	No regulatory requirement regarding the control of RWSP water chemistry during normal plant operation. Therefore, this COL item will be deleted.	DCD #6.3(4)

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Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale					
COL 6.3(6)	The COL Applicant is responsible to prepare an as-built list of material used in or on the ECCS by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.	6.3.2.4		H	a	6.3.2.4 6.3.6	RG1.206 C.I.6.3.2.4 "The applicant should identify the material specifications for the ECCS, and discuss material compatibility and chemical effects of all expected conditions. The applicant should list the materials used in or on the ECCS by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF."	This COL item will be deleted. Supplemental information will be provided to the DCD. See the attachment.	The material information for the ECCS will be added to the DCD (Subsection 6.3.2.4). Therefore, this COL item will be deleted.	DCD #6.3(6)
COL 6.4(2)	The COL Applicant is responsible to prepare and implement normal, abnormal, and emergency operating procedures for the MCR HVAC system, to include the main control room emergency filtration system.	6.4.3		H	b	6.4.3 6.4.7	RG1.206 C.I.6.4.3 "The applicant should discuss the method of operation during normal and emergency conditions. It should discuss the automatic actions and manual procedures required to ensure effective operation of the system."	This COL item will be revised in the DCD to only discuss the automatic actions and manual procedures for the MCR HVAC system in the event of postulated toxic gas release. See the attachment.	The automatic actions and manual procedures required by RG 1.206 have already been in the DCD (Subsection 6.4.2), except for the emergency operation in the event of toxic gas release. The remaining COL item is related to the emergency operation. Therefore, this COL item should be updated accordingly.	DCD #6.4(2)
COL 6.4(4)	The COL Applicant is responsible to determine the charcoal absorber weight, type and distribution.	6.4.2.2.1		H	a	6.4.2.2.1 6.4.7	RG1.206 C.I.6.4.2.2 (7) "Specifically, the applicant should include the following information, which is pertinent to the evaluation of control room ventilation: (7) description of the charcoal filter train, including design specifications, flow parameters, and charcoal type, weight, and distribution"	This COL item will be deleted. Supplemental information will be provided to the DCD. See the attachment.	Design information of charcoal absorber will be added to the DCD (Subsection 6.4.2.2.1). Therefore, this COL item will be deleted.	DCD #6.4(4)
COL 6.5(4)	The COL Applicant is responsible to provide an as-built list of material used in or on the ESF filter systems by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.	6.5.1.7		H	a	6.5.1.7 6.5.6	RG1.206 C.I.6.5.1.6 "The applicant should list by commercial name, quantity (estimate where necessary), and chemical composition of the materials used in or on the filter system. The applicant should show that the radiolytic or pyrolytic decomposition products, if any, of each material does not interfere with the safe operation of this or any other ESF."	This COL item will be deleted. Supplemental information will be provided to the DCD. See the attachment.	Desing information of the materials used in or on the ESF filter systems will be added to the DCD (Subsection 6.5.1.7). Therefore, this COL item will be deleted.	DCD #6.5(4)
COL 6.6(1)	The COL Applicant is responsible for the preparation of a preservice inspection program (non-destructive baseline examination) and an inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports in accordance with 10 CFR 50.55a(g), including selection of specific examination techniques and preparing appropriate inspection procedures.	6.6		H	b	6.6 6.6.9	RG1.206 C.I.6.6 "The applicant should discuss the ISI program for Quality Group B and C components (i.e., Class 2 and 3 components in Section III of the ASME Code)."	This COL item will be revised to identify the implementation milestone of the program. See the attachment.	Full description of the ISI program is in the DCD (Subsection 6.6.1 through to 6.6.8). The remaining COL item is related to the implementation milestone of the ISI program. Therefore, this COL item should be updated accordingly.	DCD #6.6(1)

Table 1 Examination Results of COL Holder Item (16 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 6.6(2)	The COL Applicant is responsible for preparing an augmented inservice inspection program for high-energy fluid system piping.	6.6.8		H	b	6.6.8 6.6.9	RG1.206 C.I.6.6.8 "The applicant should provide an augmented ISI program for high-energy fluid system piping between containment isolation valves or, where no isolation valve is used inside containment, between the first rigid pipe connection to the containment penetration or the first pipe whip restraint inside containment and the outside isolation valve."	This COL item will be revised to identify the implementation milestone of the program. See the attachment.	Full description of the augmented ISI program is in the DCD (Subsection 6.6.8). The remaining COL item is related to the implementation milestone of the program. Therefore, this COL item should be updated accordingly.	DCD #6.6(2)
COL 8.3(2)	The COL applicant is to provide ground grid and lightning protection.	8.3.1.1.11		H	a	8.3.1.1.11 8.3.4	RG1.206 C.I.8.3.1.1 "The descriptive information should include functional logic diagrams, electrical single-line diagrams, tables, physical arrangement drawings, and electrical schematics, describing the design of the electrical distribution systems, including grounding and lightning protection plan drawings." RG1.206 C.I.8.3.1.3(8) "This section of the FSAR should include the following electrical power system calculations and distribution system studies: (8) Grounding • Provide a detailed description of the grounding system, including the components associated with the various grounding subsystems (e.g., station grounding, system grounding, equipment safety grounding, any special grounding for sensitive instrumentation, and computer or low-signal control systems)."	No change of this COL item.	NA	NA
COL 9.1(1)	The COL Applicant is to provide a program for monitoring the effectiveness of neutron poison present in the neutron absorbing panel.	9.1.2.2.2		H	a	9.1.2.2.2 9.1.6	SRP 9.1.2, I.11 "The licensee should have a program for monitoring the effectiveness of the neutron poison present in the neutron absorbing panels."	No change of this COL item.	NA	NA
COL 9.5(1)	The COL applicant establishes a fire protection program, including organization, training and qualification of personnel, administrative controls of combustibles and ignition sources, firefighting procedures, and quality assurance.	9.5.1 9.5.1.6 Table 9.5.1-1R Table 9.5.1-2R		H	b	9.5.1 9.5.9	RG1.206 C.I.9.5.1.2 "overall FPP provisions, including the fire protection organization; administrative policies; fire prevention controls; applicable administrative, operations, maintenance, and emergency procedures; QA; access to fire areas for fire fighting; and fire brigade and emergency response capability."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (17 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 10.2(1)	Inservice Inspection; The Combined License Applicant is to develop turbine maintenance and inspection procedure and then to implement prior to fuel load. Plant startup procedure including warm-up time will be completed therein.	10.2.3.5		H	b	10.2.3.5 10.2.5	RG1.206 C.I.10.2.3.1 "The applicant should describe the materials specifications, chemical analysis, fabrication history and techniques, coating processes, and NDE during the fabrication process of the turbine rotor and rotor forgings, paying particular attention to items affecting metallurgical stability." "Describe the methods of obtaining these properties, including the procedures to minimize flaws." RG1.206 C.I.10.2.3.2 "The applicant should describe the criteria used to ensure protection against brittle failure of turbine rotors." "Describe the fracture toughness and Charpy V-notch test programs." RG1.206 C.I.10.2.3.3 "The applicant should describe the preservice inspection procedures and acceptance criteria to demonstrate the integrity of the rotors." RG1.206 C.I.10.2.3.5 "Describe the types of inspections and inspection techniques, areas to be inspected, frequencies of inspection, and acceptance criteria."	No change of this COL item.	NA	NA
COL 10.3(2)	Safety and relief valve information: The Combined License Applicant is to address the actual throat area of the MSSV.	10.3.2.3.2		H	a	10.3.2.3.2 10.3.7	RG1.206 C.I.5.2.2(4) "These systems include all pressure-relieving devices (safety and relief valves) for the following four systems: (4) secondary side of steam generators." RG1.206 C.I.5.2.2.4 "It should identify the significant design parameters for each component, including the design, throat area, capacity, and set points of the valves and the diameter, length, and routing of piping."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (18 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 11.3(5)	The COL applicant is to prepare a plan for offsite dose calculation manual in accordance with the guidance of NUREG-1301(Ref. 11.3-20), NUREG- 0133(Ref. 11.3-21), and Regulatory Guides 1.109(Ref. 11.3-19), 1.111(Ref. 11.3-22), or 1.113(Ref. 11.3-23), containing site-specific requirements.	11.3.3.3		H	b	11.3.3.3 11.3.7	RG1.206 C.I.11.5.2 "The applicant should provide an offsite dose calculation manual containing a description of the methodology and parameters used for calculation of offsite doses resulting from gaseous and liquid effluents and planned discharge flow rates, using the guidance of NUREG-1301 or NUREG-1302 and NUREG-0133. Address the 10 CFR Part 50, Appendix I, guidelines for maximally exposed offsite individual doses and population doses via liquid and gaseous effluents. Indicate how the guidance of RGs 1.109 and 1.111 or 1.113 is followed. If this guidance is not followed, describe the specific alternative methods to be used."	This COL item will be deleted. This COL item will be combined with COL item 11.5(2). See the attachment.	This COL item will be combined with COL item 11.5(2). Therefore, this COL item will be deleted.	DCD 11.3(5)
COL 11.4(3)	The COL applicant is to prepare a plan for the process control program describing the process and effluent monitoring and sampling program. The plan should include the proposed implementation milestones.	11.4.3.2		H	b	11.4.3.2 11.4.8	RG1.206 C.I.11.4.3 "The applicant should provide the PCP to demonstrate compliance with the provisions of 10 CFR 61.55 and 10 CFR 61.56 on low-level radioactive waste classifications and characteristics, waste transfers and shipping manifest requirements of Appendix G to 10 CFR Part 20, and NRC and DOT shipping regulations (10 CFR Part 71 and 49 CFR Parts 171–180), and waste acceptance criteria of authorized disposal facilities."	No change of this COL item.	NA	NA
COL 11.4(4)	The COL applicant is responsible for the identification of mobile/portable SWMS connections that are considered non-radioactive but later may become radioactive through contact or contamination with radioactive systems (i.e., a non-radioactive system becomes contaminated due to leakage, valving errors, or other operating conditions in the radioactive systems). The COL applicant is to prepare a plan to develop and use operating procedures so that the guidance and information in Inspection and Enforcement (IE) Bulletin 80-10 (Ref. 11.4-29) is followed.	11.4.4.5		H	b	11.4.4.5 11.4.8	RG1.206 C.I.11.4.2.2 "Describe system design features and operational procedures used to ensure that interconnections between plant systems and mobile processing equipment will avoid the contamination of nonradioactive systems and uncontrolled releases of radioactivity in the environment (see IE BL-80-10 and RG 1.11 for details)."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (19 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 11.5(2)	The COL applicant is to prepare an offsite dose calculation manual to provide specific administrative controls and liquid and gaseous effluent source terms to limit the releases to site-specific requirements containing a description of the methods and parameters that drive to arrive radiation instrumentation alarm setpoint. The COL applicant is to commit to follow the NEI generic template 07-09 (Ref. 11.5-30) as an alternative to providing the offsite dose calculation manual at the time of application.	11.5.2.7 11.5.2.9		H	b	11.5.2.7 11.5.2.9 11.5.5	RG1.206 C.I.11.5.2 "The applicant should provide an offsite dose calculation manual containing a description of the methodology and parameters used for calculation of offsite doses resulting from gaseous and liquid effluents and planned discharge flow rates, using the guidance of NUREG-1301 or NUREG-1302 and NUREG-0133. Address the 10 CFR Part 50, Appendix I, guidelines for maximally exposed offsite individual doses and population doses via liquid and gaseous effluents. Indicate how the guidance of RGs 1.109 and 1.111 or 1.113 is followed. If this guidance is not followed, describe the specific alternative methods to be used."	No change of this COL item.	NA	NA
COL 11.5(3)	The COL applicant is to develop a radiological and environmental monitoring program taking into consideration local land use and census data in identifying all potential radiation exposure pathways. The program shall take into account associated radioactive materials present in liquid and gaseous effluents and direct external radiation from SSCs. The COL applicant is to follow the guidance outlined in NUREG-1301(Ref. 11.5-21), and NUREG-0133 (Ref. 11.5-18) when developing the radiological effluent monitoring program. The COL applicant is to commit to follow the NEI generic template 07-09 (Ref. 11.5-30) as an alternative to providing the radiological effluent monitoring program at the time of application.	11.5.2.10		H	b	11.5.2.10 11.5.5	RG1.206 C.I.11.5.2 "The applicant should provide the radiological environmental monitoring program (REMP) describing the scope of the program taking into account local land use census data in identifying all potential radiation exposure pathways, associated radioactive materials present in liquid and gaseous effluent, and direct external radiation from SSC. Describe how the guidance of NUREG-1301 or NUREG-1302 and NUREG-0133 were used in developing the REMP."	No change of this COL item.	NA	NA
COL 11.5(5)	The COL applicant is to provide analytical procedures and sensitivity for selected radioanalytical methods and type of sampling media for site-specific matter.	11.5.2.6 11.5.2.8		H	a	11.5.2.6 11.5.2.8 11.5.5	RG1.206 C.I.11.5.2 "The applicant should provide the following information for each location: (5) analytical procedure and sensitivity for selected radioanalytical methods and types of sampling media"	No change of this COL item.	NA	NA
COL 12.1(5)	The COL Applicant is to provide the operational radiation protection program for ensuring that occupational radiation exposures are ALARA.	12.5		H	b	12.1.4 12.5	RG1.206 C.I.12.5 "Because the Radiation Protection Program is an operational program, as discussed in SECY-05-0197, the program and its implementation milestones should be fully described and reference any applicable standards. Fully described should be understood to mean that the program is clearly and sufficiently described in terms of the scope and level of detail to allow for a reasonable assurance finding of acceptability."	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (20 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 12.2(1)	The COL Applicant is responsible for the use of any additional contained radiation sources that are not identified in subsection 12.2.1, including radiation sources used for instrument calibration or radiography.	12.2.1.1.10		H	a	12.2.1.1.10 12.2.3	RG1.206 C.I.12.2.2.1 "Describe any required radiation sources containing byproduct, source, and special nuclear material that may warrant shielding design consideration. Provide a listing of isotope, quantity, form, and use of all sources in this latter category that exceed 3.7 E+9 Bq (100 millicuries). Describe any additional contained radiation sources that are not identified above, including radiation sources used for instrument calibration or radiography."	No change of this COL item.	NA	NA
COL 13.4(1)	The COL Applicant is to develop a description and schedule for the implementation of operational programs. The COL Applicant is to "fully describe" the operational programs as defined in SECY-05-0197 (Ref. 13.4-1) and provide commitments for the implementation of operational programs required by regulation. In some instances, programs may be implemented in phases. The COL Applicant is to include the phased implementation milestones in their submittal.	13.4 Table 13.4-201 FSAR sections referenced therein		H	b	13.4 13.4.1	RG1.206 C.I.13.4 "The COL applications should fully describe operational programs, as defined in SECY-05-0197. In accordance with Commission direction in the SRM associated with SECY-05-0197, COL applicants should also provide schedules for implementation of these operational programs, as discussed below. The COL applicant should provide commitments for implementation of operational programs that are required by regulation."	No change of this COL item.	NA	NA
COL 13.5(1)	The COL Applicant is to develop administrative procedures describing administrative controls over activities that are important to safety for the operation of a facility.	13.5-13.5.1.2		H	b	13.5.1 13.5.3	RG1.206 C.I.13.5.1 "This section of the FSAR should describe administrative procedures that provide administrative control over activities that are important to safety for operation of the facility."	No change of this COL item.	NA	NA
COL 13.5(3)	The COL Applicant is to develop procedures performed by licensed operators in the main control room. Operating procedures that are used by the operating organization to ensure routine operating, off-normal, and emergency activities are conducted in a safe manner are described. The plan includes the implementation of these procedures (Ref. 13.5-3).	13.5.2		H	b	13.5.2 13.5.3	RG1.206 C.I.13.5.2 "This section should describe primarily the procedures that licensed operators perform in the control room. " "The applicant should submit the procedure development program, as described in the PGP for EOPs, to the NRC at least 3 months prior to the date the applicant plans to begin formal operator training on the EOPs."	No change of this COL item.	NA	NA
COL 14.2(3)	The COL applicant provides the process used to develop test specifications and test procedures. [14.2.3]	14.2.3 Appendix 14AA	A	H	b	14.2.3 14.2.13	RG1.206 C.I.14.2.3 "The COL applicant should describe the process used to develop, review, and approve individual test procedures, including the organizational units or personnel that are involved in performing these activities and their respective responsibilities."	This COL item will be deleted. The description in the DCD will be revised. See the attachment.	Supplemental information (Technical report: Test Program Description "MUAP-08009") closes this COL item. This report was separately submitted with the transmittal letter "UAP-HF-08199" on September 30th.	DCD #14.2(3) (Ref. UAP-HF-08199)

Table 1 Examination Results of COL Holder Item (21 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
			COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
COL Item No.	COL Item	FSAR Location	COL Applicant Item	COL Holder Item	Rationale					
COL 14.2(7)	The COL applicant provides a schedule for the development of plant procedures that assures required procedures are available for use during the preparation, review and performance of preoperational and startup testing. [14.2.9]	14.2.9		H	c	14.2.9 14.2.13	RG1.206 C.I.14.2.9 "The COL applicant should provide a schedule for development of plant procedures as well as a description of how, and to what extent, the plant operating, emergency, and surveillance procedures will be use-tested during the initial test program."	No change of this COL item.	NA	NA
COL 14.2(8)	The COL applicant provides an event-based schedule, relative to fuel loading, for conducting each major phase of the test program. For multiunit sites, the COL applicant discusses the effects of overlapping initial test program schedules on organizations and personnel participating in each ITP. [14.2.11]	14.2.11		H	c	14.2.11 14.2.13	RG1.206 C.I.14.2.11 "The COL applicant should provide a schedule, relative to the fuel loading date, for conducting each major phase of the test program."	No change of this COL item.	NA	NA
COL 16.1_3.3.1(1)	The trip setpoints and allowable values in Table 3.3.1-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A		H	a	16.2	RG1.206 C.I.16 The COL application should contain plant-specific TS that are derived from the analyses and evaluations included in the FSAR. The plant-specific TS should include the following categories of information as required by 10 CFR 50.36 and 10 CFR 50.36a for operating reactors: - Surveillance Requirements	No change of this COL item.	NA	NA
COL 16.1_3.3.2(1)	The trip setpoints and allowable values and time delay value in Table 3.3.2-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A	A	H	a	16.2	RG1.206 C.I.16 The COL application should contain plant-specific TS that are derived from the analyses and evaluations included in the FSAR. The plant-specific TS should include the following categories of information as required by 10 CFR 50.36 and 10 CFR 50.36a for operating reactors: - Surveillance Requirements	No change of this COL item.	NA	NA
COL 16.1_3.3.5(1)	The trip setpoints and time delay values in SR 3.3.5.3 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A	A	H	a	16.2	RG1.206 C.I.16 The COL application should contain plant-specific TS that are derived from the analyses and evaluations included in the FSAR. The plant-specific TS should include the following categories of information as required by 10 CFR 50.36 and 10 CFR 50.36a for operating reactors: - Surveillance Requirements	No change of this COL item.	NA	NA
COL 16.1_3.3.6(1)	The trip setpoints and allowable values in Table 3.3.6-1 are to be confirmed after completion of a plant specific setpoint study following selection of the plant specific instrumentation.	COLA Part 4, Section A		H	a	16.2	RG1.206 C.I.16 The COL application should contain plant-specific TS that are derived from the analyses and evaluations included in the FSAR. The plant-specific TS should include the following categories of information as required by 10 CFR 50.36 and 10 CFR 50.36a for operating reactors: - Surveillance Requirements	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (22 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 17.4(1)	The COL Applicant shall be responsible for the development and implementation of the Phases II and III of the D-RAP. In the Phase II, the plant's site-specific information should be introduced to the D-RAP process and the site-specific SSCs should be combined with the US-APWR design SSCs into a list for the specific plant. In the Phase III, procurement, fabrication, construction, and test specifications for the SSCs within the scope of the RAP should ensure that significant assumptions, such as equipment reliability, are realistic and achievable. The QA requirements should be implemented during the procurement, fabrication, construction, and pre-operation testing of the SSCs within the scope of the RAP.	17.4.3 17.4.4 17.4.7 17.4.8 Table 17.4-201	A	H	b	17.4.9	RG1.206 C.I.17.4.3 "The COL applicant establishes the probabilistic, deterministic, and other methods to determine the SSCs under the scope of the RAP and ITAAC. The COL applicant is also responsible for describing how it will integrate reliability assurance activities into existing programs (e.g., Maintenance Rule, surveillance testing, ISI, IST, maintenance and QA)." RG1.206 C.I.17.4.4 "A COL applicant should provide the following in Chapter 17 of the safety analysis report in accordance with the provisions in SRP Section 17.4: how procurement, fabrication, construction, and test specifications for the SSCs within the scope of the RAP ensure that significant assumptions, such as equipment reliability, are realistic and achievable"	No change of this COL item.	NA	NA
COL 17.4(2)	The COL Applicant shall be responsible for the development and implementation of the O-RAP, in which the RAP activities should be integrated into the existing operational program (i.e., Maintenance Rule, surveillance testing, in-service inspection, in-service testing, and QA). The O-RAP should also include the process for providing corrective actions for design and operational errors that degrade nonsafety-related SSCs within the scope of the RAP.	17.4.3 17.4.4 17.4.5 17.4.7		H	b	17.4.9	RG1.206 C.I.17.4.3 "The COL applicant establishes the probabilistic, deterministic, and other methods to determine the SSCs under the scope of the RAP and ITAAC. The COL applicant is also responsible for describing how it will integrate reliability assurance activities into existing programs (e.g., Maintenance Rule, surveillance testing, ISI, IST, maintenance and QA)." SRP17.4.I "The RAP is implemented in two stages." "The second stage applies to reliability assurance activities for an operating plant."	No change of this COL item.	NA	NA
COL 17.6(1)	The COL applicant develops and implements the program for implementation of 10 CFR 50.65, the Maintenance Rule.	17.6		H	b	17.6.1	RG1.206 C.I.17.6 "The applicant should describe its program for Maintenance Rule implementation in accordance with NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," as endorsed by RG 1.160 including, but not limited to, the following areas: (1) ~(5)."	No change of this COL item.	NA	NA
COL 19.3(1)	The COL Applicant who intends to implement risk-managed technical specifications continues to update Probabilistic Risk Assessment and Severe Accident Evaluation to provide PRA input for risk-managed technical specifications.	19.1.7.6		H	a, b	19.1.7.6 19.3.3	NEI-06-09, 2.3.4 7. The PRA shall be maintained and updated in accordance with approved station procedures to ensure it accurately reflects the as-built, as-operated plant.	No change of this COL item.	NA	NA

Table 1 Examination Results of COL Holder Item (23 of 23)

Original Description in COLA (from COLA FSAR Chapter 1, Table 1.8-201)							Regulatory Requirements	Plan for DCD Update		
COL Item No.	COL Item	FSAR Location	COL Item Resolution			DCD Location		Proposed COL Item Correction	Reason for Update	Attachment
			COL Applicant Item	COL Holder Item	Rationale					
COL 19.3(5)	When the design activity progresses and specific design data becomes available, SSC fragilities are updated during the COLA phase to reflect specific design data.	19.1.5.1.1		H	a	19.1.5.1.1 19.3.3	RG1.206 C.I.19.1.5.1.1 "Describe the SSC fragility analysis, including the use of information about similar components and information developed from expert opinion or expert elicitation."	This COL item will be deleted. See the attachment.	The SSC fragilities analysis required by RG 1.206 has been already described in DCD. Also the plant-specific PRA required by RG 1.206 are incorporated by COL Item 19.3(4). Therefore, this COL item will be deleted.	DCD #19.3(5)
COL 19.3(6)	The COL applicant develops an accident management program based on the U.S. industry initiated and coordinated program in this area and related information from efforts on an international front.	19.2.5		H	b	19.2.5 19.3.3	RG1.206 Appendix C.I.19.A-19.2.5 "Describe those actions taken during the course of an accident by the plant operating and technical staff to (1) prevent core damage, (2) terminate the progress of core damage if it begins and retain the core within the reactor vessel, (3) maintain containment integrity as long as possible, and (4) minimize offsite releases."	This COL item will be deleted. See the attachment.	No regulatory requirement to address an accident management program in this section. The actions taken during an accident by operating and technical staff have been identified in DCD. Therefore, this COL item will be deleted.	DCD #19.3(6)

SUPPLEMENTAL INFORMATION

11/7/2008

US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No.52-021

Supplemental information related to: COL Item 3.7 (15)

The first sentence of the fourth paragraph in DCD Subsection 3.7.4.2 will be modified as the following:

~~The COL Applicant is to assure that a~~ A time-history analyzer/recorder is provided which has the capability to provide pre-event recording time of 3 seconds minimum and post-event recording time of 5 seconds minimum, and to record at least 25 minutes of sensed motion. The recorder portion of the time-history analyzer is to have the capability of a sample rate of at least 200 samples per second in each of the three orthogonal directions of the plant, a bandwidth of 0.20 Hz to 100 Hz, and a dynamic range of 1,000:1 zero to peak. The triaxial acceleration sensors are to have the same dynamic range as the time-history analyzer recorder and a frequency range of 0.20 Hz to 100 Hz. The triggers of the tri-axial acceleration sensor units are to be capable of being set within the range of 0.001g to 0.02g. Power supply for the seismic monitoring instrumentation system will normally be from the non-Class-1E direct current and uninterruptible power supply system, however, the system is to be equipped with dedicated back-up batteries and charger in case of power outage or power failure.

The COL 3.7(15) in DCD Subsection 3.7.5 will be deleted as the following:

COL 3.7(15) Deleted. ~~The COL Applicant is to assure that a time-history analyzer/recorder is provided which has the capability to provide pre-event recording time of 3 seconds minimum and post-event recording time of 5 seconds minimum, and to record at least 25 minutes of sensed motion.~~

SUPPLEMENTAL INFORMATION

11/7/2008

US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No.52-021

Supplemental information related to: COL Item 3.7(18)

The last paragraph in DCD Subsection 3.7.4.5 will be deleted as the following.

~~It is the responsibility of the COL Applicant to develop a site-specific instrument surveillance program including calibration and testing that complements the US-APWR seismic instrumentation program, and to develop site-specific maintenance and repair procedures that maximize the number of instruments in service during plant operation and shutdown.~~

The COL 3.7(18) in DCD Subsection 3.7.5 will be deleted as the following.

COL3.7(18) *Deleted.*~~*It is the responsibility of the COL Applicant to develop a site-specific instrument surveillance program including calibration and testing that complements the US-APWR seismic instrumentation program, and to develop site-specific maintenance and repair procedures that maximize the number of instruments in service during plant operation and shutdown.*~~

SUPPLEMENTAL INFORMATION

11/7/2008

US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No.52-021

Supplemental information related to: COL Item 3.8(1)

DCD Subsection 3.8.1.4.1.3 will be modified as the following.

> In the design analysis of the PCCV, the physical properties of materials are based on the values specified in applicable codes and standards. The design analysis takes into account the minimum/maximum values permitted by the codes and standards as appropriate to capture worst case analysis scenarios. ~~It is the responsibility of the COL Applicant to perform reconciliation evaluations when the as-built properties become available.~~

The COL 3.8(1) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(1) *Deleted.* ~~*It is the responsibility of the COL Applicant to perform reconciliation evaluations when the as-built properties become available.*~~

SUPPLEMENTAL INFORMATION

11/7/2008

US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No.52-021

Supplemental information related to: COL Item 3.8(2)

The last paragraph in DCD Subsection 3.8.1.5.1.2 will be modified as the following.

In addition, "Determining Prestressing Forces for Inspection of Prestressed Concrete Containments", RG 1.35.1 (Reference 3.8-6) is used as guidance for determination of prestressing losses. Prestressing losses are computed on the basis of the US-APWR, 60 year design life. ~~It is the responsibility of the COL Applicant to assure that wobble and curvature coefficients used in computing prestressing losses due to friction are consistent with the tendon system corrosion protection coatings present at the time of prestressing.~~

The COL 3.8(2) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(2) *Deleted.*~~*It is the responsibility of the COL Applicant to assure that wobble and curvature coefficients used in computing prestressing losses due to friction are consistent with the tendon system corrosion protection coatings present at the time of prestressing.*~~

SUPPLEMENTAL INFORMATION

11/7/2008

US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No.52-021

Supplemental information related to: COL Item 3.8 (4)

The fourth paragraph in DCD Subsection 3.8.1.6 will be modified as the following:

~~It is the responsibility of the COL Applicant to select the site-specific concrete ingredients and to develop a concrete mix design that produces the concrete design strengths specified for the US-APWR PCCV and conform to all applicable material and quality control requirements.~~

The concrete constituents and concrete mix design comply with the requirements of Article CC-2200 of the ASME Code, Section III (Reference 3.8-2).

Cement is used in the concrete conforms to the requirements of ASTM C 150, Specification for Portland Cement, Type I, Type II, Type IV, Type V, or ASTM C 595, Specification for Blended Hydraulic Cements, Type IP, Type IP (MS), or Type IP (MH).

Aggregates used in the concrete conform to the requirements of ASTM C 33, Specification for Concrete Aggregates (Reference 3.8-44).

Mixing water used in the concrete conforms to the requirements of Subarticle CC-2223 of the ASME Code, Section III (Reference 3.8-2).

Admixtures include air-entraining admixtures, chemical admixtures, and mineral admixtures. The admixtures, except mineral admixtures, are stored in a liquid state. Air-entraining admixtures conform to the requirements of ASTM C 260, Air-Entraining Admixtures for Concrete (Reference 3.8-48).

Mineral admixtures conform to the requirements of ASTM C 618, Fly Ash and Raw or Calcined Natural Pozzolans for Use in Portland Cement Concrete (Reference 3.8-49). Chemical admixtures conform to the requirements of ASTM C 494, Chemical Admixtures for Concrete (Reference 3.8-50).

The COL 3.8(4) in DCD Subsection 3.8.6 will be deleted as the following:

COL 3.8(4) Deleted. ~~It is the responsibility of the COL Applicant to select the site-specific concrete ingredients and to develop a concrete mix design that produces the concrete design strengths specified for the US-APWR PCCV and conform to all applicable material and quality control requirements.~~

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Supplemental information related to: COL Item 3.8(5)

The seventh paragraph in DCD Subsection 3.8.1.6 will be modified as the following.

As previously discussed in Subsection 3.8.1.5, concrete is not allowed to rely on tensile strength to resist flexural and membrane tension except where permitted in ASME Code, Section III (Reference 3.8-2) allowable shear provisions. The concrete creep for the 60 year design life is 400μ in/in; for purposes of design, it is considered that 2/3 of this occurs in the first year after completion of prestressing. The concrete shrinkage for the 60 year design life is 150μ in/in; for purposes of design, it is considered that 2/3 of this creep occurs in the first year after completion of concrete placement. ~~It is the responsibility of the COL Applicant to verify these concrete creep and shrinkage parameters by testing of the site-specific concrete mix, and the PCCV design analysis is revised if the final test results affect the conclusions of the PCCV calculation.~~ Also, it is the responsibility of the COL Applicant to develop a site-specific specification that covers the concrete production and batch plant requirements. The specification defines the concrete constituents such as aggregates, cement, water, and admixtures that constitute the mix design, cement grout, and production testing requirements. The materials comply with the requirements of Article CC-2200 of the ASME Code, Section III (Reference 3.8-2).

The COL 3.8(5) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(5) *Deleted.* ~~*It is the responsibility of the COL Applicant to verify these concrete creep and shrinkage parameters by testing of the site-specific concrete mix, and the PCCV design analysis is revised if the final test results affect the conclusions of the PCCV calculation.*~~

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Supplemental information related to: COL Item 3.8(6)

The seventh paragraph in DCD Subsection 3.8.1.6 will be modified as the following.

As previously discussed in Subsection 3.8.1.5, concrete is not allowed to rely on tensile strength to resist flexural and membrane tension except where permitted in ASME Code, Section III (Reference 3.8-2) allowable shear provisions. The concrete creep for the 60 year design life is 400μ in/in; for purposes of design, it is considered that 2/3 of this occurs in the first year after completion of prestressing. The concrete shrinkage for the 60 year design life is 150μ in/in; for purposes of design, it is considered that 2/3 of this creep occurs in the first year after completion of concrete placement. It is the responsibility of the COL Applicant to verify these concrete creep and shrinkage parameters by testing of the site-specific concrete mix, and the PCCV design analysis is revised if the final test results affect the conclusions of the PCCV calculation. ~~Also, it is the responsibility of the COL Applicant to develop a site-specific specification that covers the concrete production and batch plant requirements.~~ The specification defines the concrete constituents such as aggregates, cement, water, and admixtures that constitute the mix design, cement grout, and production testing requirements. The materials comply with the requirements of Article CC-2200 of the ASME Code, Section III (Reference 3.8-2).

The COL 3.8(6) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(6) *Deleted.* ~~*It is the responsibility of the COL Applicant to develop a site-specific specification that covers the concrete production and batch plant requirements.*~~

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Supplemental information related to: COL Item 3.8(8)

The twelfth paragraph in DCD Subsection 3.8.1.6 will be modified as the following.

~~It is the responsibility of the COL Applicant to produce a site-specific liner plate specification to define the material and welding requirements, testing and quality requirements. This~~ Liner Plate System specification complies with ~~references~~ Article CC-2500 of the ASME Code, Section III (Reference 3.8-2). Fracture toughness requirements for the liner plate material are in accordance with Subarticle CC-2520 (Reference 3.8-2).

The COL 3.8(8) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(8) *Deleted.* ~~*It is the responsibility of the COL Applicant to produce a site-specific liner plate specification to define the material and welding requirements, testing, and quality requirements.*~~

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Supplemental information related to: COL Item 3.8(9)

The thirteenth paragraph in DCD Subsection 3.8.1.6 will be modified as the following.

~~The COL Applicant is to produce another site-specific specification for the PCCV personnel airlocks and equipment hatch. This~~ The specification for the PCCV personnel airlocks and equipment hatch complies with the ASME Code, Section III, Division 1 (Reference 3.8-2), which is applicable to metallic material not backed by concrete for load carrying purposes (refer to Subarticle CC-2112 for the delineation of jurisdiction). Fracture toughness requirements for materials for locks and hatch and other penetration assemblies subject to Division 1 of the ASME Code, Section III are in accordance with Article NE-2300 (Reference 3.8-2).

The COL 3.8(9) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(9) *Deleted.* ~~*The COL Applicant is to produce another site-specific specification for the PCCV personnel airlocks and equipment hatch.*~~

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Supplemental information related to: COL Item 3.8(12)

The twenty-seventh paragraph in DCD Subsection 3.8.1.6 will be modified as the following.

- ~~It is the responsibility of the COL Applicant to produce a site-specific specification that covers the material requirements for the Prestressing System~~. The specification that defines the material and special material testing requirements for the Prestressing System complies with Article CC-2400 of the ASME Code, Section III (Reference 3.8-2) for items where applicable.

The COL 3.8(12) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(12) *Deleted.* ~~*It is the responsibility of the COL Applicant to produce a site-specific specification that covers the material requirements for the Prestressing System.*~~

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Supplemental information related to: COL Item 3.8(13)

The last paragraph in DCD Subsection 3.8.1.6 will be deleted as the following.

~~It is the responsibility of the COL Applicant to produce a site-specific specification to define the material and special material testing requirements for the reinforcing steel system including bars and splices.~~ All material for the reinforcing steel system including bars and splices conforms to Article CC-2300 of the ASME Code, Section III (Reference 3.8-2).

The COL 3.8(13) in DCD Subsection 3.8.6 will be deleted as the following.

COL 3.8(13) *Deleted.* ~~*It is the responsibility of the COL Applicant to produce a site-specific specification to define the material and special material testing requirements for the reinforcing steel system including bars and splices, and all material is to conform to Article CC-2300 of the ASME Code, Section III.*~~

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Supplemental information related to: COL Item 3.8 (22)

The first paragraph in DCD Subsection 3.8.4.7 will be modified as the following:

Seismic category I structures, except the PCCV, are monitored in accordance with Paragraph (a)(2) of 10 CFR 50.65 (Reference 3.8-29), provided there is not significant degradation of the structure. Condition monitoring, is similar to that preformed as part of the inservice inspection activities required by the ASME codes, is applied to these structures. The condition of all structures is assessed periodically. The appropriate frequency of the assessments is commensurate with the safety significance of the structure and its condition.

The COL Applicant is to ~~address~~ establish a site-specific program for monitoring and maintenance of seismic category I structures in accordance with the requirements of NUMARC 93-01 (Reference 3.8-28) and 10 CFR 50.65 (Reference 3.8-29) as detailed in RG 1.160 (Reference 3.8-30).

The COL 3.8(22) in DCD Subsection 3.8.6 will be modified as the following:

COL 3.8(22) The COL Applicant is to ~~address~~ establish a site-specific program for monitoring and maintenance of seismic category I structures in accordance with the requirements of NUMARC 93-01 (Reference 3.8-28) and 10 CFR 50.65 (Reference 3.8-29) as detailed in RG 1.160 (Reference 3.8-30).

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Supplemental information related to: COL Item 3.9(6)

Subsection 3.9.6.4 should be modified as follows:

3.9.6.4 IST Program for Dynamic Restraints

As described in Subsection 3.12.6.6, dynamic restraints within piping systems is to be minimized as-much-as-possible due to the maintenance and testing requirements for these components. However, dynamic restraints in the form of snubber supports are utilized where free thermal movements are required and restraining movements caused by dynamic loadings is also required. Snubber operability inspections and tests including scope and frequency requirements are specified and controlled in the Components Support Inspection and Testing Program Plan. The ASME OM Code, 1995 Edition through the 2003 Addenda (Reference 3.9-13) provides ISI methods and requirements for examinations and tests of snubbers at nuclear power plants. Preservice and inservice examinations must be performed using the VT-3 visual examination method described in IWA-2213 of the ASME Code, Section XI, 1995 Edition through the 2003 Addenda (Reference 3.9-43).

The COL Applicant is to provide the program plan for IST of dynamic restraints in accordance with Nonmandatory Appendix A of ASME OM Code (Reference 3.9-1314).

The program plan for IST of dynamic restraints includes the location of snubbers in safety-related systems and components, the snubber type (hydraulic or mechanical), applicable standard, and function (shock, vibration, or dual-purpose snubber). While the ASME Code, Section III (Reference 3.9-1), Subsection NF does not require fatigue evaluations for shock snubbers, fatigue strength of the snubber is to be evaluated for dual-purpose or vibration arrester snubber types.

The snubber is selected to satisfy the system design requirements. The snubber design and operating information form the basis for snubber examination and testing requirements. The following subsections describe these requirements which comply with the ASME OM Code (Reference 3.9-13).

3.9.6.4.1 Design and Operating Information

The selection of snubbers involves a process of matching design requirements with manufacturer recommendations for performance limitations. Snubber installations are in

accordance with the design requirements and manufacturers instructions, including settings for hot and cold conditions. The selection criteria of the snubber are determined through an iterative process of comparing the snubber's spring constant with the spring constant for a given load capacity modeled in the piping system. Additional piping system analyses are performed as necessary until the values coincide for the installed and modeled snubber load capacities and spring constants. The final settings of the snubber are determined by the thermal movement of the pipe at the snubber location, and snubber direction. These settings must assure that the pipe thermal movements at the snubber location and direction are within the boundaries of the total travel of the snubber, for all operating conditions of the piping system.

Design and operating information provide the input for the performance of the IST program. Nonmandatory Appendix C of the ASME OM Code (Reference 3.9-13) provides guidance on design and operating information which may be useful in the development of IST programs for snubbers. Items recommended for use include:

a. Snubber operation and maintenance instructions including parts list.

b. Design drawings showing snubber rating, location, orientation, pin-to-pin dimensions, and hot and cold settings.

c. Procurement specifications.

d. Snubber qualification and acceptance test results.

e. Snubber application reports.

f. Desired reservoir fluid level as a function of piston location and spatial orientation.

g. Correlation of activation velocity, acceleration, and release rate at normal test temperatures to the range of operating temperatures expected.

h. Method for measuring the position setting.

i. Required fluid and seal material specification.

j. Limiting environmental conditions affecting service.

k. Drag force for each size and type of snubber furnished.

l. Correlation of hydraulic snubber release rate at various loads and the acceleration limiting value of mechanical snubbers at various loads to justify testing at less than rated loads.

3.9.6.4.2 Preservice Examination Requirements

A preservice examination in accordance with the ASME OM Code (Reference 3.9-13) is performed on all snubbers after placing the systems in service prior to initial plant operation. Typical items to be considered are listed in Nonmandatory Appendix B of the ASME OM Code. The initial visual examination verifies, as a minimum:

a. No visible sign of damage or impaired operational readiness exist.

b. Snubber load rating, location, orientation, position setting, and configuration are in accordance with design drawings and specifications.

c. Adequate swing clearance is provided to allow snubber movement.

d. Fluid is at the recommended level, and fluid is not leaking from the snubber system, if applicable.

e. Structural connections, such as welds, pins, bearings, studs, fasteners, lock nuts, tabs, wire, and cotter pins, are installed correctly.

The functional preservice testing of the snubber examines the thermal movement through incremental movement verification, swing clearance, and total movement verification in accordance with the ASME OM Code (Reference 3.9-13) Sections ISTD-4131 through ISTD-4133. Snubbers that fail the functional test requirements are re-installed correctly, adjusted, repaired, or replaced until such time the requirements are satisfied.

Preservice operational readiness testing, which may be performed at the manufacturer's facility, verify the following attributes as specified in ASME OM Code (Reference 3.9-13) Section ISTD-5100:

a. Activation is within the specified range of velocity or acceleration in tension and in compression.

b. Release rate, when applicable, is within the specified range in tension and in compression. For units specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

c. For mechanical snubbers, drag force is within specified limits in tension and in compression.

d. For hydraulic snubbers, if required to verify proper assembly, drag force is within specified limits in tension and in compression.

3.9.6.4.3 Inservice Examination Requirements

External characteristics, such as items listed in Nonmandatory Appendix B of the ASME OM Code (Reference 3.9-13), are visually examined on the required schedule and evaluated to determine their operational readiness in accordance with the ASME OM Code (Reference 3.9-13) Section ISTD-4200.

The initial examination interval of snubbers begins no sooner than 2 months after attaining 5% reactor power operation, and is completed by the end of the first refueling outage. Subsequent examination intervals begin at the end of the previous examination interval, and conclude at the end of the next refueling outage. The duration of examination intervals following the completion of the second refueling outage is in accordance with Table ISTD-4252-1 of the ASME OM Code. Snubbers determined to be unacceptable at any time during the interval, based on the visual examination acceptance criteria, shall be counted in determining the subsequent examination interval in accordance with Table ISTD-4252-1.

Snubbers are tested for operational readiness during each fuel cycle. Tests in accordance with a specified sampling plan are performed during normal system operation, or during system or plant outages. Snubber operational readiness tests verify that:

a. Activation is within the specified range of velocity or acceleration in tension and in compression.

b. Release rate, when applicable, is within the specified range in tension and in compression. For units specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

c. Drag force, when applicable, is within specified limits in tension and in compression.

Snubbers are tested in their as-found condition (without preconditioning) regarding the parameters to be tested to the fullest extent practicable. Snubbers may be tested in their

installed location by using Owner-approved test methods and equipment, or removed and bench tested, in accordance with Owner-approved procedures. Snubbers that do not meet test requirements are evaluated to determine the cause of the failure. Unacceptable snubbers are adjusted, repaired, modified, or replaced.

3.9.6.4.4 Service Life Monitoring

The initial snubber service life is predicted based on manufacturer's recommendations or design review. Methods for predicting service life are given in Nonmandatory Appendix F of the ASME OM Code (Reference 3.9-13).

Service life is evaluated at least once each fuel load cycle, and increased or decreased, if warranted. The evaluation is based upon technical data from representative snubbers that have been in service in the plant, or other information related to service life. If the evaluation indicates that service life will be exceeded before the next scheduled system or plant outage, one of the following actions are taken:

a. The snubber is replaced with a snubber for which the service life will not be exceeded before the next scheduled system or plant outage.

b. Technical justification is documented for extending the service life to or beyond the next scheduled system or plant outage.

c. The snubber is reconditioned such that its service life will be extended to or beyond the next scheduled system or plant outage.

The COL 3.9(6) in DCD Subsection 3.9.9 will be modified as follows:

COL 3.9(6) The COL Applicant is to provide the program plan for IST of dynamic restraints in accordance with Nonmandatory Appendix A of ASME OM Code.

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Supplemental information related to: COL Item 3.10 (10)

The sixth paragraph in DCD Subsection 3.10 will be deleted as the following:

~~The COL Applicant is to establish an equipment seismic qualification program which addresses all requisite aspects of seismic and dynamic qualification of mechanical and electrical equipment.~~

The COL 3.10(10) in DCD Subsection 3.10.5 will be deleted as the following:

COL 3.10(10) Deleted. ~~*The COL Applicant is to establish an equipment seismic qualification program which addresses all requisite aspects of seismic and dynamic qualification of mechanical and electrical equipment.*~~

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Supplemental information related to: COL Item 3.13(1)

The last paragraph in DCD Subsection 3.13.1.2.3 will be modified as the following.

RV closure studs and nuts have a minimum Cv energy (impact strength) of 45 ft-lb and a minimum lateral expansion of 0.025 inch. In general, RV closure stud bolts are removed prior to raising the water level during refueling or other operations involving vessel head removal, and to provide seal plugs to insert into the RV flange stud holes to protect against corrosion and contamination during stud removal. ~~The COL Applicant is to provide information on procedures for effective corrosion protection for the stud bolting following head removal and allow the ISI to be performed on the removed RV stud bolting.~~

The COL 3.13(1) in DCD Subsection 3.13.3 will be deleted as the following.

COL 3.13(1) *Deleted.* ~~*The COL Applicant is to provide information on procedures for effective corrosion protection for the stud bolting following head removal and allow the ISI to be performed on the removed RV stud bolting.*~~

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Supplemental information related to: COL Item 3.13(2)

The last paragraph in DCD Subsection 3.13.1.2.5 will be modified as the following.

Sealants: Reference 3.13-6 discusses the use of and guidelines for leak sealants including bolt thread sealants. The application of leak sealants should be considered as temporary solutions, with leaking components repaired or replaced at the next available opportunity. Repairs should involve complete removal of the sealant and restoration of the component to its original condition or configuration. Controlled standard practices guide and assure the adequacy of leak sealing operations, which include: (a) Certified chemical analyses for each batch of sealant, test and document for each sealant batch or lot to establish chemical compatibility with bolting materials; (b) Sealant cavity pressure (closely monitored during the injection operation); and (c) Sealant volume needed prior to injection or application to avoid/minimize excess sealant from entering the reactor coolant. Well-designed, properly lubricated fasteners do not generally employ or require thread sealants, which are temporary solutions and are not a part of a sound bolting design and installation program. An exception to temporary thread sealants is the graphite-based Neolube #1260, which is both a sealant and lubricant for bolting. RG 1.37 (Reference 3.13-9) describes the Quality Assurance requirements for cleaning fluid systems and associated components including threaded fasteners of water-cooled nuclear power plants. The water quality for final flushes and associated components is generally at least equal to the quality of the operating system water in accordance with "Cleaning of Fluid Systems and Associated Components During Construction Phase of Nuclear Power Plants", ANSI N45.2.1 (Reference 3.13-10). ANSI N45.2.1 allows that low (nil) levels of sulfur, fluorine, and/or chlorine compounds be used on austenitic SSs. In addition, low (nil) sulfur and low (nil) lead compounds also may be used on nickelbase alloys. Chemical compounds (e.g., thread lubricants, sealants) that could contribute to SCC are not be used with austenitic SSs and nickel-base alloys, such as compounds (products) containing leachable chlorides, fluorides, lead, zinc, copper, sulfur, or mercury. Since MoS2 contains high sulfur levels and PTFE is fully fluorinated, these two lubricants are not acceptable for primary coolant system service along with other reasons discussed above (corrosion, poor radiation resistance). ~~The COL Applicant is to provide information on procedures for the final selection of lubricants, sealants, and cleaning fluids.~~

The COL 3.13(2) in DCD Subsection 3.13.3 will be deleted as the following.

COL 3.13(2) *Deleted.* ~~*The COL Applicant is to provide information on procedures for the final selection of lubricants, sealants, and cleaning fluids.*~~

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Supplemental information related to: COL Item 5.2 (4)

The first sentence of the fourth paragraph of DCD Subsection 5.2.4.1 will be replaced with the following.

~~In conformance with ASME Code and NRC requirements.~~ The identification of the implementation milestones of the ~~preparation of~~ inspection and testing program is the responsibility of the COL applicant.

The COL 5.2(4) in DCD Subsection 5.2.6 will be replaced with the following.

COL 5.2(4) *Inservice inspection and testing program for the RCPB*

The COL applicant ~~addresses and develops~~ identifies the implementation milestones for the inservice inspection and testing program for the RCPB, in accordance with Section XI of the ASME Code and 10 CFR 50.55a.

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Supplemental information related to: COL Item 5.2 (5)

The fourth sentence of the first paragraph of DCD Subsection 5.2.4.2 will be replaced with the following:

The ~~preparation~~ identification of the implementation milestone for the inspection and testing program is the responsibility of the COL applicant.

The COL 5.2(5) in DCD Subsection 5.2.6 will be replaced as the following:

COL 5.2(5) *Preservice inspection and testing program for the RCPB*

The COL applicant ~~addresses and develops~~ identifies the implementation milestone for the preservice inspection and testing program for the RCPB in accordance with Article NB-5280 of Section III, Division I of the ASME Code.

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Supplemental information related to: COL Item 6.1 (1)

The fifth and sixth sentences of the first paragraph in DCD Subsection 6.1.1.2.2 will be replaced with the following.

~~The COL Applicant complies with the provisions and recommendations provided by ASME NQA-1-1994, Part II (Ref. 6.1-10) when developing programs that support the cleaning of materials and components, cleanness control, and pre-operational flushing for systems that contain austenitic stainless steel components as recommended by RG 1.37 (Ref. 6.1-11).~~ The process of cleaning of materials and components, cleanliness control, and pre-operational flushing for systems that contain austenitic stainless steel components follows RG 1.37 (Ref. 6.1-11) and the quality assurance program complies with the provisions and recommendations provided by ASME NQA-1-1994, Part II (Ref. 6.1-10). This ~~program~~ process includes documentation to verify the compatibility of materials used in manufacturing ESF components with ESF fluids.

The COL 6.1(1) in DCD Subsection 6.1.3 will be deleted as the following.

COL 6.1(1) *Deleted* ~~*The COL Applicant complies with the provisions and recommendations provided by ASME NQA-1-1994, Part II when developing programs that support the cleaning of materials and components, cleanness control, and pre-operational flushing for systems that contain austenitic stainless steel components as recommended by RG 1.37. This program includes documentation to verify the compatibility of materials used in manufacturing ESF components with ESF fluids.*~~

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Supplemental information related to: COL Item 6.1 (2)

The fourth sentence of the fifth paragraph in DCD Subsection 6.1.1.1 will be replaced with the following.

~~The COL Applicant is responsible to develop an augmented ISI program to ensure the structural integrity of such components during service.~~ An augmented inservice inspection (ISI) is conducted to ensure the structural integrity of such components during service, which is described in Section 6.6.

The COL 6.1(2) in DCD Subsection 6.1.3 will be deleted as the following.

COL 6.1(2) *Deleted* ~~*The COL Applicant is responsible to develop an augmented ISI program to ensure the structural integrity of pressure-retaining cold-worked austenitic stainless steel components.*~~

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Supplemental information related to: COL Item 6.1 (3)

The fourth sentence of the second paragraph in DCD Subsection 6.1.1.2.1 will be replaced with the following.

~~The COL Applicant is responsible to a develop a program to maintain an inventory of all acids and bases within the containment to aid in control of the pH of the recirculating water.~~ The information regarding boric acid in the RWSP water and NaTB in the containment is described in Subsection 6.3.1.3, Subsection 6.3.2.2.5, and Table 6.3-5.

The COL 6.1 (3) in DCD Subsection 6.1.3 will be deleted as the following:

COL 6.1(3) *Deleted* ~~*The COL Applicant is responsible to a develop a program to maintain an inventory of all acids and bases within the containment to aid in control of pH within a post-LOCA environment.*~~

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Supplemental information related to: COL Item 6.1 (4)

The fifth sentence of the second paragraph in DCD Subsection 6.1.1.2.1 will be replaced with the following.

~~The~~ Aluminum and zinc are ~~COL Applicant is responsible to identify~~ materials ~~within the containment~~ that would yield hydrogen gas by corrosion from the emergency cooling or containment spray solutions in the containment, and their use is ~~should be~~ limited as much as practicable.

The COL 6.1 (4) in DCD Subsection 6.1.3 will be deleted as the following.

COL 6.1(4) *Deleted* ~~*The COL Applicant is responsible to identify materials within the containment that would yield hydrogen gas by corrosion from the emergency cooling or containment spray solutions, and their use should be limited as much as practicable.*~~

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Supplemental information related to: COL Item 6.1 (5)

The last two sentences of the first paragraph in DCD Subsection 6.1.2 will be replaced with the following.

~~The COL Applicant is responsible to identify and quantify all organic~~ Organic materials that exist in significant amounts in the containment (e.g., wood, plastics, lubricants, paint or coatings, electrical cable insulation, and asphalt) are identified and quantified in Subsection 6.2.2.3. Coatings not intended for a 60-year service without overcoating ~~should~~ include total overcoating thicknesses expected to be accumulated over the service life of the substrate surface.

The COL 6.1 (5) in DCD Subsection 6.1.3 will be deleted as the following:

COL 6.1(5) *Deleted* ~~*The COL Applicant is responsible to identify and quantify all organic materials that exist in significant amounts in the containment (e.g., wood, plastics, lubricants, paint or coatings, electrical cable insulation, and asphalt). Coatings not intended for 60-year service without overcoating should include total overcoating thicknesses expected to be accumulated over the service life of the substrate surface.*~~

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Supplemental information related to: COL Item 6.2 (1)

The second sentence of fourteenth paragraph in DCD Subsection 6.2.1.1.3.4 will be deleted as following.

~~The COL Applicant is responsible to provide best estimates of heat sinks in the COL Application, update the FSAR based on as-built information and confirm the values are bounded by the values in containment analyses.~~

The second sentence of first paragraph in DCD Subsection 6.2.1.5.7 will be deleted as following.

~~The COL Applicant is responsible for providing best estimates of heat sinks in the COL Application, update the FSAR based on as-built information, and confirm that the values are bounded by the values in containment analyses.~~

The COL 6.2(1) in DCD Subsection 6.2.8 will be deleted as the following.

COL 6.2(1) *Deleted* ~~*The COL applicant is responsible to provide best estimates of heat sinks in the COL application, update the FSAR based on as-built information and confirm the values are bounded by the values in containment analyses.*~~

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Supplemental information related to: COL Item 6.2 (6)

The forth paragraph in DCD Subsection 6.2.4.2 will be replaced with the following.

> Table 6.2.4-1 presents the design information regarding provisions for isolating the containment penetrations, while Table 6.2.4-2 and Figure 6.2.4-1 presents associated containment isolation configurations. Table 6.2.4-3 presents the list of containment penetrations and system isolation positions, which includes the information related to the pipe length from containment to outermost isolation valve. ~~As built pipe run distances from outer containment isolation valve to the containment penetration are provided by the COL applicant.~~

The COL 6.2(6) in DCD Subsection 6.2.8 will be deleted as the following.

COL 6.2(6) *Deleted* ~~*As built pipe run distances from outer containment isolation valve to the containment penetration are provided by the COL applicant.*~~

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Supplemental information related to: COL Item 6.2 (7)

The sixth and seventh paragraph of DCD Subsection 6.2.5.2 will be replaced with the following:

The containment hydrogen monitor is of a type and manufacture widely used in commercial nuclear power plants currently licensed by the NRC. The containment hydrogen monitoring equipment is regularly calibrated and the components verified operable, as required by the plant surveillance test program. The containment hydrogen monitor located outside of the containment analyzes the hydrogen concentration in containment air and continuously indicates hydrogen concentration in the MCR after the containment isolation valves of the RMS containment air sampling line are manually opened.

~~The operating principle and accuracy of the hydrogen monitor (combustible gas analyzer) are provided by the COL Applicant.~~

The first paragraph of DCD Subsection 6.2.5.3 will be replaced with the following:

Hydrogen monitoring and control is provided for the unlikely occurrence of an accident that is more severe than a postulated design-basis accident. Thus, the hydrogen monitor has detection and display ranges of 0 to 10% by volume in the containment air. This monitoring range satisfies the requirements of 10 CFR 50.34(f)(2)(ix)(A) and 50.44(c)(2) for combustible gas control. The accuracy of the hydrogen monitor is less than or equal to ±10% of full span. The measured value of hydrogen concentration is utilized for operator actions and this accuracy is sufficient to accomplish the actions. These operator actions are briefed in Subsection 19.2.5. ~~to 20% of hydrogen in the air, and the~~ The hydrogen igniters are automatically energized by the ECCS actuation signal. However, the design evaluation is neither required nor provided for such a beyond-design-basis event.

The COL 6.2 (7) in DCD Subsection 6.2.8 will be deleted as the following:

COL 6.2(7) *Deleted.* ~~*The operating principle and accuracy of the hydrogen monitor (combustible gas analyzer) are provided by the COL applicant.*~~

The Table 6.2.5-1 in DCD Section 6.2 will be replaced with the following:

Table 6.2.5-1 Containment Hydrogen Monitoring and Control Design Parameters

Parameter	Value
I. Hydrogen Detector	
Number	1
Range (% hydrogen)	0-10 ~~20~~
Accuracy	Less than or equal to $\pm$10% of full span
II. Hydrogen Igniter	
Number	20
Type	Glow Plug

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Supplemental information related to: COL Item 6.2 (8)

The sentences from the sixth line of the first paragraph in the DCD Subsection 6.2.6 to the last line in the DCD Subsection 6.2.6.4 will be replaced with the following.

6.2.6 Containment Leakage Testing

GDC 52, 53, and 54 of Appendix A to 10CFR50 require that the reactor containment vessel and piping systems that penetrate the containment be designed to accommodate periodic leakage rate testing. Further, Appendix J to 10CFR50 (Ref. 6.2-28), specifies leakage testing requirements for the containment, its penetrations, and isolation valves (Type A, B, and, C tests). The containment leakage rate testing program and limits are identified in Chapter 16. The US-APWR leakage rate testing program implements the performance-based leakage testing requirements of 10CFR50 Appendix J, Option B using the specific methods and guidance provided in NEI 94-01 (Ref. 6.2-31) and ANSI/ANS-56.8-1994 (Ref. 6.2-35), as modified and endorsed by RG 1.163 (Ref. 6.2-30) including the following elements:

- Maximum allowable containment integrated leakage rate
- Pretest requirements
- Venting of fluid systems in containment atmosphere
- Stabilization of containment conditions (temperature, pressure, humidity)
- Testing methodology
- Acceptance criteria (including allowable margins from maximum allowables)

6.2.6.1 Containment Integrated Leakage Rate Testing

As discussed above, specific requirements for Type A (Option B), containment integrated leakage rate testing program are identified in Chapter 16, "Technical Specifications." ~~and are.~~ The ~~the responsibility of any~~ COL applicant that references the US-APWR certified design for construction and operation is responsible for identifying the milestone for the containment leakage rate testing program. Sheets 46 and 47 of Figure 6.2.4-1 present the permanently installed penetrations for the containment integrated leakage rate testing. These penetrations are capped and sealed during normal reactor operation with compressed air equipment suitable to perform the test temporarily connected.

10CFR50 Appendix J Option B Type A testing is initially performed during preoperational testing following completion of the Reactor Building construction including the installation of all mechanical, electrical and instrument systems, or portions of systems, penetrating the containment boundary. The first periodic Type A test is performed within 48 months after the successful completion of the last preoperational Type A test. Periodic Type A tests are performed at a frequency of at least once per 48 months until acceptable performance is established in accordance with NEI 94-01 (Ref. 6.2-31), with subsequent testing frequencies determined in accordance with NEI 94-01 as specified in the containment leakage rate testing program. The interval for periodic testing begins at initial reactor operation, and the interval for subsequent tests begins upon completion of a Type A test and ends at the start of the next test.

Test prerequisites include the following:

- Completion of a general visual inspection of accessible interior and exterior surfaces of the containment system for structural problems which may affect either the containment structure leakage integrity or the performance of the Type A test. Any significant structural problems identified are corrected before the initiation of the containment inspection.
- Closure of containment isolation valves for the Type A test shall be accomplished by normal operation and without any preliminary exercising or adjustments (e.g., no tightening of valve after closure by valve motor).
- Containment penetrations, including equipment and personnel airlocks, are closed.
- Test instrumentation is available and calibrated.
- During the period between the initiation of the containment inspection and the performance of the Type A test, no repairs or adjustments shall be made so that the containment can be tested in as close to the "as is" condition as practical.
- The preoperational Type A test is performed after completion of the containment structural integrity preoperational test.

Vent and Drain conditions are established as follows prior to the Type A test:

- Portions of fluid systems, which are part of the containment boundary that may be opened directly to the containment or outside atmosphere under post-accident conditions, are opened or vented to the appropriate atmosphere to place the containment in conditions as close to post-accident conditions as possible.
- Portions of closed systems inside containment that penetrate containment and rupture as a result of a loss of coolant accident shall be vented to the containment atmosphere.
- All vented systems shall be drained of water or other fluids to the extent necessary to assure exposure of the system containment isolation valves to containment air test pressure and to assure they will be subjected to the post accident differential pressure.
- Systems that are required to maintain the plant in a safe condition during the test shall be operable in their normal mode, and need not be vented.
- Pathways in systems that are normally filled with fluid and operable during post-accident conditions are not required to be vented.
- Portions of the pathways outside of containment that are designed to Seismic Category I and to at least Safety Class 2 are not required to be vented.
- Pathways which are Type B or C tested within the previous 24 calendar months need not be vented or drained.
- For planning or scheduling purposes, or ALARA considerations, pathways in systems which are required for proper conduct of the Type A test need not be vented or drained.

Type A testing is conducted in accordance with ANSI/ANS-56.8-1994 (Ref. 6.2-35). The containment is slowly pressurized with clean, dry air using portable compressors, filters and

dryers until the containment pressure equals the calculated accidental peak containment internal pressure, Pa. The containment atmosphere is allowed to stabilize, consistent with the guidance of ANSI/ANS-56.8 (Ref. 6.2-35), before beginning the Type A test. The test duration is consistent with the guidance of ANSI/ANS-56.8 (Ref. 6.2-35). Periodic measurements of containment pressure and humidity are collected and evaluated to determine the rate of decrease in the mass of air inside containment in accordance with the guidance of ANSI/ANS-56.8 (Ref. 6.2-35). After completing the initial Type A test, a verification test is performed to confirm the validity of the test results using the methods prescribed by ANSI/ANS-56.8 (Ref. 6.2-35).

The maximum allowable containment leakage rate, La, the calculated peak containment internal pressure for the design basis loss of coolant accident, Pa, and the acceptance criteria for the Type A tests is specified by the Technical Specifications in Subsection 5.5.16. For the initial preoperational Type A test, the integrated leak rate shall be < 0.75 La. For periodic Type A tests, the containment leakage rate acceptance criterion is 1.0 La. During the first unit startup following testing in accordance with the containment leakage rate testing program, the leakage rate acceptance criteria are < 0.75 La for Type A tests.

Any major modification or replacement of components that affect reactor containment integrity that are performed after the initial Type A test are followed by either a Type A test or a Type B test of the modified portion of the containment boundary.

If Type A testing does not meet acceptance criteria, the reason or reasons for failure shall be identified, corrected and retesting will be performed. Acceptable performance shall be re-established by performing the next Type A test within 48 months following the successful retest.

6.2.6.2 Containment Penetration Leakage Rate Testing

Figure 6.2.4-1 illustrates the containment hatches (personnel airlocks and equipment hatch) and electrical penetrations that are Type B tested. In addition, the seals on the fuel transfer tube (containment end) blind flange are tested (Type B). Other penetrations that are Type B tested are listed in Table 6.2.4-3.

10CFR50 Appendix J Option B Type B testing is initially performed during preoperational testing following completion of the Reactor Building construction, and performed periodically thereafter, as specified in Technical Specifications, Subsection 5.5.16, Containment Leakage Rate Testing Program.

The first periodic Type B tests are performed at a frequency of at least once per 30 months until acceptable performance is established in accordance with NEI 94-01 (Ref. 6.2-31), with subsequent testing frequencies determined in accordance with NEI 94-01 (Ref. 6.2-31) as specified in the containment leakage rate testing program, not to exceed 120 months.

Type B test methods and techniques are consistent with ANSI/ANS 56.8-1994 (Ref. 6.2-35).

Type B leak tests are performed using local pressurization at a test pressure equal to or greater than Pa, using either a pressure-decay method or a flowmeter method. For the pressure-decay method, the rate of pressure decay of a known test volume is used to determine the leakage rate. The flowmeter method maintains the test boundary at test pressure by addition of air or nitrogen through a calibrated flowmeter, which indicates the leakage rate. Door seals for the personnel airlocks are Type B leakage rate tested by pressurizing the airlock, and suitable permanent test fixtures and gauges are provided. Similarly, the equipment hatch seals are leakage rate tested.

The acceptance criteria for the air lock leak rate testing are:
a) Overall air lock leakage rate is ≤ 0.05 La when tested at ≥ Pa.

b) For each door, leakage rate is ≤ 0.01 La when pressurized to ≥ 10 psig.

Acceptance criteria for the combined As-left leakage rate for all penetrations subject to Type B or Type C testing is < 0.60 La, consistent with NEI 94-01 (Ref. 6.2-31). The combined leakage rate determinations are based on the latest leakage rate test data available and are maintained as a running summation of the leakage rates.

6.2.6.3 Containment Isolation Valve Leakage Rate Test

As defined in 10CFR50, Appendix J, "Type C Tests" means tests intended to measure containment isolation valve leakage rates. The containment isolation valves included are those that:

1. Provide a direct connection between the inside and outside atmospheres of the primary reactor containment under normal operation, such as purge and ventilation, vacuum relief, and instrument valves;

2. Are required to close automatically upon receipt of a containment isolation signal in response to controls intended to affect containment isolation;

3. Are required to operate intermittently under post accident conditions; and

4. Are in main steam and feedwater piping and other systems which penetrate containment of direct-cycle boiling water power reactors" (Item 4 is not applicable to US-APWR).

Table 6.2.4-3 presents a listing of containment penetrations and their system isolation valves. The table identifies the test type to be performed on each penetration/valve as applicable. The provisions for testing the individual isolation valves (e.g., test connections and drains) are shown in Figure 6.2.4-1 and individual system piping and instrumentation diagrams (P&IDs). CIVs are typically tested so that the test pressure is applied in the same direction that would occur in a DBA. If the test pressurizes any of the pathway's containment barriers in the reverse direction, it must be shown that test results are not affected in a nonconservative manner by directionality.

10CFR50 Appendix J Option B Type C testing is initially performed during preoperational testing following completion of the Reactor Building construction. The first periodic Type C tests are performed at a frequency of at least once per 30 months until acceptable performance is established in accordance with NEI 94-01 (Ref. 6.2-31), with subsequent testing frequencies determined in accordance with NEI 94-01 (Ref. 6.2-31) as specified in the containment leakage rate testing program, not to exceed 60 months, consistent with RG 1.163 (Ref. 6.2-30).

Type C test methods and techniques are consistent with ANSI/ANS 56.8-1994 (Ref. 6.2-35).

Type C testing leakage rate results are used to determine the combined leakage rate for all Type B and C penetrations as discussed above.

6.2.6.4 Scheduling and Reporting of Periodic Tests

The proposed schedule and test report content requirements associated with performing pre-operational and periodic leakage rate testing are in accordance with the guidance provided in NEI 94-01 (Ref. 6.2-31) as modified and endorsed by the NRC RG 1.163 (Ref. 6.2-30). The results of preoperational and periodic Type A, B and C tests must be documented to show that the performance criteria for leakage have been met. The comparison to previous results of the performance of the overall containment system and of individual components within it must be documented to show that the test intervals established for the containment system and components within it are adequate.

The following reference will be added in the DCD Subsection 6.2.9.

6.2-35 Containment System Leakage Testing Requirements, American National Standards Institute/American Nuclear Society, ANSI/ANS-56.8-1994, August 1994.

The COL 6.2 (8) in DCD Subsection 6.2.8 will be replaced as the following:

COL 6.2(8) *The COL applicant is responsible for ~~the containment leakage rate testing program including, but not limited to, its preparation, exemptions, equipment, methods, procedures, conduct, limits, acceptance criteria, schedule, and reports.~~ identifying the implementation milestone for the containment leakage rate testing program described under 10 CFR 50,Appendix J.*

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Supplemental information related to: COL Item 6.2 (9)

The seventh paragraph in DCD Subsection 6.2.2.3 will be replaced with the following.

~~Selection, purchase, and installation of specific insulation products are controlled by administrative programs developed by the COL Applicant.~~
Insulation is a purchased product and its use is controlled to meet the parameters provided in the US-APWR Sump Strainer Performance document (Ref. 6.2-34).

Description of US-APWR Design in Table 6.2.2-2, No.1.1.2.2 will be replaced with the following.

Particulate (e.g., Min-K-based) insulation is excluded from the containment by design. ~~Selection, purchase, and installation of specific insulation products are controlled by administrative programs developed by any applicant referencing the certified US-APWR design for construction and operation.~~ Insulation is a purchased product and its use is controlled to meet the parameters provided in the US-APWR Sump Strainer Performance document (Ref. 6.2-34).

The COL 6.2(9) in DCD Subsection 6.2.8 will be deleted as the following.

COL 6.2(9) *Deleted*. ~~*Selection, purchase, and installation of specific insulation products are controlled by administrative programs developed by the COL applicant.*~~

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Supplemental information related to: COL Item 6.3 (3)

The fifth paragraph in DCD Subsection 6.3.2.8 will be deleted.

~~Station operating procedures for normal, abnormal, and emergency operation of the SI pumps, accumulators, and emergency letdown, including emergency operating instructions for feed-and-bleed operation are developed, reviewed, and approved by the COL applicant. These procedures and associated training include the emergency operating information to assess the necessity of initiation of cooling using feed-and-bleed operation.~~

The COL 6.3(3) in DCD Subsection 6.3.6 will be deleted as the following.

COL 6.3(3) *Deleted* ~~*The COL Applicant prepares normal, abnormal and emergency operating procedures for the ECCS, to include Safety Injection Pumps, Accumulators, and Emergency Letdown, including emergency operating instruction for feed-and-bleed operation.*~~

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Supplemental information related to: COL Item 6.3 (4)

The sixth paragraph in DCD Subsection 6.3.2.2.4 will be deleted as the following.

~~The COL Applicant is responsible for developing a program to maintain RWSP water chemistry including surveillance test procedures .~~

The COL 6.3(4) in DCD Subsection 6.3.6 will be deleted as the following.

COL 6.3(4) *Deleted* ~~*The COL Applicant is responsible for developing a program to maintain RWSP water chemistry including surveillance test procedures.*~~

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Supplemental information related to: COL Item 6.3 (6)

The second paragraph in DCD Subsection 6.3.2.4 will be modified as the following.

~~The COL Applicant is responsible to prepare an as-built list of material used in or on the ECCS by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.~~
Acid is formed under the influence of radiation during accident, that is, chlorine contained in jackets covering the insulation cables inside the containment undergoes radiolysis to generate hydrochloric acid. This acid formed after accident occurrence is taken into account for estimation of NaTB quantity described in Subsection 6.3.2.5.

The COL 6.3(6) in DCD Subsection 6.3.6 will be deleted as the following.

COL 6.3(6) *Deleted* ~~*The COL Applicant is responsible to prepare an as-built list of material used in or on the ECCS by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.*~~

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Supplemental information related to: COL Item 6.4 (2)

The DCD Subsection 6.4.3 will be replaced with the following:

6.4.3 System Operational Procedures

In the normal operation mode, the MCR HVAC system maintains the proper environment in the MCR and other area within the CRE. The normal operation mode is described in Subsection 6.4.2 and Subsection 9.4.1.

The emergency pressurization mode is automatically initiated in the radiological release event as described in Subsection 6.4.2. The emergency pressurization mode is also initiated by manual action. The emergency isolation mode is initiated by manual action. The emergency isolation mode is described in Subsection 6.4.2. ~~The normal and emergency operation of the MCR HVAC system is described in Subsection 6.4.2.~~ Smoke purge operation cannot be initiated during any emergency mode of MCR HVAC system operation. ~~MCR emergency filtration system operation.~~

The COL Applicant is responsible to discuss automatic and manual actions ~~prepare and implement normal, abnormal, and emergency operating procedures~~ for the MCR HVAC system that are required in the event of postulated toxic gas release~~, to include the main control room emergency filtration system~~.

The COL 6.4 (2) in DCD Subsection 6.4.7 will be replaced with the following:

COL 6.4(2) The COL Applicant is responsible to discuss the automatic actions and manual actions ~~prepare and implement normal, abnormal, and emergency operating procedures~~ for the MCR HVAC system in the event of postulated toxic gas release. ~~, to include the main control room emergency filtration system.~~

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Supplemental information related to: COL Item 6.4 (4)

The last paragraph of DCD Subsection 6.4.2.2.1 will be deleted:

~~The COL Applicant is responsible to determine the charcoal adsorber weight, type and distribution.~~

The COL 6.4 (4) in DCD Subsection 6.4.7 will be deleted as the following:

COL 6.4(4) *Deleted* ~~*The COL Applicant is responsible to determine the charcoal adsorber weight, type and distribution.*~~

The Table 6.4-1 in DCD Section 6.4 will be replaced with the following:

Table 6.4-1 Main Control Room Emergency Filtration System – Equipment Specifications

Description	Specification
1. Main Control Room Emergency Filtration Units	
Auxiliaries	High efficiency prefilter, Electric heating coil, HEPA filter, Charcoal adsorber, High efficiency afterfilter
Quantity	2 (100% capacity) trains
Electric Heating Coil Capacity	18.0 kW
Charcoal Iodine Removal Efficiency	95% minimum
Charcoal adsorber type	Impregnated activated carbon
Charcoal adsorber weight	Maximum loading of 2.5 mg of total iodine per gram of activated carbon
Charcoal adsorber distribution	Average atmosphere residence time of .25 seconds per 2 inches of adsorbent bed

HEPA particulate removal efficiency	99% minimum
HEPA Filter Type	No. Designation 8 (Table FC-4110, ASME AG-1, based on 2,000 scfm*)
2. Main Control Room Emergency Filtration Unit Fans	
Quantity	2 (1 per Train)
Type	Centrifugal
Design Air Flow Rate	3,600 ft^3/min
3. Main Control Room HVAC System Isolation Dampers	
Type	Leak-tight Damper, Motor-Operated or Air-Operated
Closure Time	Less than or equal to 10 seconds

Note:

* Cubic foot of air per minute with a standard density.

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Supplemental information related to: COL Item 6.5(4)

The DCD Subsection 6.5.1.7 will be replaced with the following.

The ESF filter system materials are specified to resist premature failure of the annulus emergency exhaust system or any other ESF system due to radiolytic and pyrolytic decomposition products according to the environmental conditions in which the ESF filter systems are installed. The ESF filter system materials are chosen in accordance with the requirement of RG 1.52 (Ref. 6.5-1) and ASME AG-1-2003 (Ref 6.5-4). ~~The COL Applicant is responsible to provide an as-built list of material used in or on the ESF filter systems by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.~~

The COL 6.5(4) in DCD Subsection 6.5.6 will be deleted as the following.

COL 6.5(4) *Deleted* ~~*The COL Applicant is responsible to provide an as-built list of material used in or on the ESF filter systems by their commercial names, quantities (estimate where necessary), and chemical composition and show that the radiolytic or pyrolytic decomposition products, if any, of each material will not interfere with the safe operation of this or any other ESF.*~~

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Supplemental information related to: COL Item 6.6 (1)

The DCD Subsection 6.6 will be replaced with the following:

Regular and periodic examinations, tests, and inspections of pressure retaining components and supports are required by 10CFR50.55a(g) (Ref. 6.6-1). This section discusses the Inservice Inspection program to address these requirements.

This section includes preservice and inservice examinations and system pressure tests. The COL Applicant is responsible for ~~the preparation of a preservice inspection program (non-destructive baseline examination) and an Inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports.~~ identifying the implementation milestones for ASME Section XI inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports, consistent with the requirements of 10 CFR 50.55a (g).

The COL 6.6(1) in DCD Subsection 6.6.9 will be replaced as the following:

COL 6.6(1) *The COL Applicant is responsible for ~~the preparation of a preservice inspection program (non-destructive baseline examination) and an Inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports in accordance with 10 CFR50.55a(g), including selection of specific examination techniques and preparing appropriate inspection procedures.~~* identifying the implementation milestone for ASME Section XI inservice inspection program for ASME Code Section III Class 2 and 3 systems, components (pumps and valves), piping, and supports, consistent with the requirements of 10 CFR 50.55a (g).

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Supplemental information related to: DCD Item 6.6 (2)

The second paragraph in DCD Subsection 6.6.8 will be replaced with the following.

The non-destructive examination method is 100 percent volumetric examination of circumferential and longitudinal welds in the affected piping during each 10-year inspection interval, except as exempted by ASME Code, Section XI, IWC-1220. The COL Applicant is responsible for identifying the implementation milestone for the augmented inservice inspection program ~~for the preparing an augmented inservice inspection program for high-energy fluid system piping. The preservice inspection program addresses the equipment and examination techniques to be used.~~

The COL 6.6 (2) in DCD Subsection 6.6.9 will be replaced with the following.

COL 6.6 (2) ~~*The COL Applicant is responsible for preparing an augmented inservice inspection program for high-energy fluid system piping.*~~
The COL Applicant is responsible for identify the implementation milestone for inservice inspection program

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Supplemental information related to: COL Item 11.3 (5)

DCD Subsection 11.3.3.3 will be replaced with the following.

> The offsite dose calculation manual contains site-specific requirements. To assist the preparation of DCD and COLA, the applicant will use the NEI's generic templates for the offsite dose calculation manual, including radiological effluent technical specifications and the radiological effluent monitoring program. These templates were issued to Nuclear Regulatory Commission (NRC) for evaluation. ~~The COL applicant is required to evaluate these templates and commit to prepare and submit the offsite dose calculation manual in accordance with those templates.~~

The COL 11.3(5) in DCD Subsection 11.3.7 will be deleted as the following.

COL 11.3 (5) *Deleted* ~~*The COL applicant is to prepare a plan for offsite dose calculation manual in accordance with the guidance of NUREG-1301(Ref. 11.3-20), NUREG- 0133(Ref. 11.3-21), and Regulatory Guides 1.109(Ref. 11.3-19), 1.111(Ref. 11.3-22), or 1.113(Ref. 11.3-23), containing site-specific requirements.*~~

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Supplemental information related to: COL Item 14.2 (3)

Reference: "Transmittal of the Technical Report "US-APWR Test Program Description" (MUAP-08009)" dated September 30, 2008 (MHI Ref.: UAP-HF-08199)

Following revision has been already proposed in Enclosure 1 of the referenced letter (UAP-HF-08199).

The third paragraph in DCD Subsection 14.2.3 will be revised as follows.

~~The COL applicant provides the~~ The process used to develop test specifications and test procedures is described in US-APWR Test Program Description Technical Report, MUAP-08009 (Reference 14.2-29).

The COL 14.2 (3) in DCD Subsection 14.2.13 will be replaced as the following:

COL 14.2(3) *Deleted* ~~*The COL applicant provides the process used to develop test specifications and test procedures. [14.2.3]*~~

Following reference will be added to DCD Subsection 14.2.14:

14.2-29 US-APWR Test Program Description Technical Report, MUAP-08009, Revision 0, October, 2008

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Supplemental information related to: COL Item 19.3 (5)

The fourth paragraph in DCD Subsection 19.1.5.1.2 will be replaced with the following.

It is not desirable that conservative SSC HCLPFs control the plant HCLPF. Conservative HCLPFs of 0.50 g are assigned to HVAC chillers (0.50 g), safety power source buildings (0.50 g), essential service water Intake structure (0.50 g), essential service water pipe tunnel (0.50 g), fuel assembly (0.50 g) and class 1E gas turbine generators (0.50 g). ~~When the design activity progresses and specific design data becomes available, these HCLPFs will be updated during the COLA phase to reflect specific design data.~~

The COL 19.3(5) in DCD Subsection 19.3 will be deleted as the following.

COL 19.3(5) *Deleted.* ~~*When the design activity progresses and specific design data becomes available, SSC fragilities are updated during the COLA phase to reflect specific design data..*~~

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Supplemental information related to: COL Item 19.3(6)

The COL 19.3(6) in DCD Subsection 19.3.3 will be deleted as the following.

COL 19.3(6) *Deleted* ~~*The COL applicant develops an accident management program based on the U.S. industry initiated and coordinated program in this area and related information from efforts on an international front.*~~

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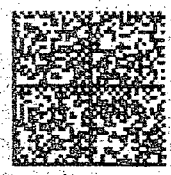

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