MCB Issue List Regarding APR-1400, FSAR Section 5.2.4

Issue #1

The Design Control Document (DCD) states that this inservice inspection (ISI) and testing program for Quality Group A components of the reactor coolant pressure boundary (RCPB) conforms with the guidelines of Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a and 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 32. However, given that 10 CFR 50.55a and GDC 32 are regulatory requirements, and not guidelines, the intent of this statement is unclear to the staff.

Confirm that the intent of the inservice inspection and testing program is to meet the requirements of 10 CFR 50.55a and GDC 32 and revise Final Safety Analysis Report (FSAR) Section 5.2.4 accordingly.

Response

The first sentence of FSAR Section 5.2.4.1 will be revised as follows:

"The inservice inspection (ISI) and testing program for Quality Group A components of the RCPB (ASME Section III, Class 1 components) conforms with the regulatory requirements of 10 CFR 50.55a and GDC 32 of 10 CFR Part 50, Appendix A."

Issue #2

The applicant's definition of the system boundary subject to inspection is acceptable if it is in agreement with the definition of the reactor coolant pressure boundary (see 10 CFR 50.2) and encompasses all ASME Code Class 1 components. FSAR Section 5.2.4.1.1 states that the reactor pressure vessel, pressurizer, primary side of the steam generator, and associated piping, pumps, valves, bolting, and component supports are subject to inspection. The staff agrees that the aforementioned components are subject to inspection. However, it is unclear whether the definition of the system boundary provided in the FSAR is in agreement with the definition of the RCPB and encompasses all ASME Code Class 1 components subject to inspection.

To address this issue, revise FSAR Section 5.2.4.1.1 to describe, in detail, the system boundary subject to inspection and clearly state whether the system boundary encompasses all ASME Code Class 1 pressure-retaining components.

Response

The following two sentences will be incorporated into the first paragraph of FSAR 5.2.4.1.1.

"The reactor pressure vessel, pressurizer, primary side of the steam generator and associated piping, pumps, valves, and bolting, and their component supports, including RCPB (reactor coolant pressure boundary) components are subject to inspection."

"All ASME Code Class 1 pressure-retaining components are subject to inspection."

Issue #3

Operating experience has shown that a significant number of dissimilar metal welds and austenitic welds in pressurized water reactors (PWRs) have suffered primary water stress corrosion cracking (PWSCC). To provide a means for monitoring for PWSCC in new plants, the 2007 Edition with the 2008 Addenda of ASME Code, Section XI requires that dissimilar metal welds and austenitic welds in piping be ultrasonically examined from both sides. When examination from both sides is not possible, procedures and personnel qualified for single-sided examination in accordance with ASME Code, Section XI, Appendix VIII, with all flaws on the opposite side of the weld, shall be used to examine the required volume. When describing the provisions in the APR1400 design that enable access to perform the required examinations, the applicant did not describe whether single or two-sided access would be provided to dissimilar metal and austenitic welds. This distinction is important because the ASME Code requirements differ depending upon the access provided.

To address the staff's concern, revise FSAR Section 5.2.4 to state whether provisions for two-sided access for ultrasonic examination of piping welds are incorporated within the APR1400 design. If two-sided access cannot be obtained to perform ultrasonic examination, the applicant should discuss how the requirements of 10 CFR 50.55a(g) and the ASME Code will be met.

Response

The following sentence will be added into FSAR Section 5.2.4.1 prior to the last sentence.

"Dissimilar metal welds and austenitic welds in piping will be ultrasonically examined from both sides. When ultrasonic examination from both sides is not possible, procedures, equipment and personnel qualified for single-sided ultrasonic examination in accordance with the ASME Code, Section XI, Appendix VIII, with all flaws on the opposite side of the weld, are used to examine the required volume."

Issue #4

Based on operating experience where cracking and leakage was identified in bottom mounted instrumentation (BMI) nozzles on PWR lower reactor pressure vessel (RPV) lower heads, the NRC issued Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity (ML032760009)," to advise PWR licensees that current methods of inspecting the RPV lower heads may need to be supplemented with additional measures (e.g., bare metal visual inspections) to detect reactor coolant pressure boundary leakage. In APR1400 FSAR Sections 5.1 and 5.3.3, the applicant states that the lower head is welded to the RPV shell and contains 61 in-core instrumentation nozzle penetrations. In light of this fact, the staff determined that the issues identified in NRC Bulletin 2003-02 are applicable to the APR1400. However, the applicant has not provided any information in the DCD to address this issue. Therefore, the staff requests the following:

1. Revise FSAR Section 5.2.4 to describe how the ASME Code ISI program for the APR1400 will be augmented to ensure the structural and leakage integrity of the RPV lower head penetrations. The description should include the following:

a. The extent of inspections which will be conducted with respect to the areas and penetrations to be inspected,
b. The inspection methods to be used,
c. The qualifications standards for the inspection methods,
d. The process used to resolve the source of findings of boric acid deposits or corrosion,
e. The inspection documentation to be generated, and,
f. The basis for concluding that the plant will satisfy applicable regulatory requirements.

Response

The leakage in reactor bottom head penetration has been experienced in Alloy 600 and Alloy 82/182 welding materials. As a result of this experience, ASME Code Case N-722-1 was developed to inspect Alloy 600/82/182 materials used in the components other than reactor vessel head penetrations. However, the material for the reactor bottom head penetration welds of the APR1400 are Alloy 690 and Alloy 52/152, which are very resistant to stress corrosion cracking in a PWR environment and the Code Case does not identify the need for visual examination for these materials. Therefore, augmentation of the ISI program for the RPV bottom head penetrations is not necessary.

2. Operating PWRs have addressed this issue by performing bare metal visual inspections of the bottom head and nozzle penetrations. If this approach is taken for the APR1400, then the applicant needs to describe in the FSAR how any coatings applied to the RPV prior to shipping will be removed to ensure that the inspections can be performed properly. This issue may be most appropriately addressed in a revision of FSAR Section 5.3.3, but is being initially identified here as it directly related to effective visual examination of the RPV lower head penetrations.

Response

Since additional bare metal visual inspection of the reactor vessel bottom head penetration nozzles is not planned for the APR1400, specifications for adequate removal of coatings applied to the head prior to shipping is not necessary. However, the coating (e.g., strippable coating) will be removed before RPV installation at field.

3. 10 CFR 50.55a(g)(3) requires that all ASME Code Class 1 components be designed and provided with access to perform the required inspections. Therefore, in addition to describing the inspection methods used to address the issue, the applicant must also describe how the BMI nozzles are designed and provided with access to perform the required inspections.

Response

Though examinations are not planned for the bare surface of reactor vessel bottom head and penetration nozzles, the design of the APR1400 does provide access to this area for the examination should examination be desired. The bottom panels that cover the reactor vessel bottom head area are removable and can be easily disassembled and assembled in the field. The accessed area is sufficient to accommodate the examination tools necessary to perform inspections during a plant outage.

Issue #5

10 CFR 50.55a states that systems and components of PWRs must meet the requirements of the ASME Code as specified in the regulation. The ASME Code requirement that addresses the qualifications of nondestructive examination (NDE) personnel is ASME Code, Section XI, IWA-2300. FSAR Section 5.2.4.1.3 describes the requirements for qualification of personnel performing ultrasonic examination. However, the FSAR does not describe the requirements for qualification of personnel performing visual, liquid penetrant, magnetic particle, eddy current, or radiographic testing as part of the PSI and ISI program. This information is needed for the staff to determine whether the requirements of ASME Code, Section XI, IWA-2300 are met. Revise FSAR Section 5.2.4.1.3 to describe the methods, procedures, and requirements regarding qualification of all NDE personnel in accordance with the ASME Code.

Response

The following sentence will be included in the second paragraph of FSAR Section 5.2.4.1.3.

"Personnel performing visual, liquid penetrant, magnetic particle, eddy current or radiographic examinations as a part of the PSI or ISI program are to be qualified in accordance with the requirements of IWA-2300 of ASME Code Section XI."

Issue #6

10 CFR 50.55a states that systems and components of PWRs must meet the requirements of the ASME Code as specified in the regulation. The ASME Code requirement that addresses Class 1 components exempt from examination is ASME Code, Section XI, IWB-1220. Specifically, if the criteria of ASME Code, Section XI, IWB-1220 are met, then certain ASME Code Class 1 components (or portions of components) may be exempted from the volumetric and surface examination requirements of ASME Code, Section XI, IWB-2500. After reviewing the information provided in FSAR Section 5.2.4.1.7, the staff could not determine if any ASME Code Class 1 components (or portions of components) would be exempted from examination for the APR1400 design.

Identify whether any ASME Code Class 1 components (or portions of components) are to be exempted from the ASME Code, Section XI, IWB-2500 examination requirements for the APR1400 design. If so, then revise FSAR Section 5.2.4 to identify the ASME Code Class 1 components (or portions of components) that the applicant proposes to exempt from the ASME Code, Section XI, IWB-2500 examination requirements and include sufficient information in FSAR Section 5.2.4 for the staff to determine whether the criteria of ASME Code, Section XI, IWB-1220 are met for those components (or portions of components).

Response

For the inservice inspection of APR1400, there are no ASME Code Class 1 components (or portions of components) that are to be exempted from ASME Code, Section XI, IWB-2500 examination requirements, except for the items allowed by ASME Code, Section XI, IWB-1220.

Issue #7

FSAR Section 5.2.4.1.8 states that the Combined License (COL) applicant is to prepare and provide any requests for relief from the ASME Code requirements that are impracticable as a result of limitations of component design, geometry, or materials of construction for specific plants, if necessary. However, the staff would note the following regulatory requirements:

- 10 CFR 50.55a(g)(3)(i) requires that ASME Code Class 1 components be designed and provided with access to enable the performance of inservice examination of these components. Therefore, limitations related to component design, geometry and materials of construction must be eliminated during the design stage to enable the performance of the required examinations.

- 10 CFR 50.55a(g)(5)(iii) states that determinations of impracticality must be based on demonstrated limitations experienced when attempting to comply with the ASME Code requirements during the ISI interval for with the request is being submitted. As such, relief requests, as defined in 10 CFR 50.55a(g), cannot be made prior to commercial operation of the plant.

Based on the above, there should be no requests for relief from ASME Code, Section XI examination requirements at the design certification or COL application stage. As such, the staff requests that FSAR Section 5.2.4 be revised to remove COL information item 5.2(11).

Response

The FSAR 5.2.4.1.8, FSAR 5.2.6 and Table 1.8-2 will be revised to remove COL information item 5.2(11). The whole paragraph of FSAR 5.2.4.1.8 and COL information item 5.2(11) of FSAR 5.2.6 will be removed as follows:

~~"5.2.4.1.8 Relief from ASME Code Requirements~~

~~The COL applicant is to prepare and provide any requests for relief from the ASEM Code requirments that are impracticable as a result of limitations of component design, geometry, or materials of construction for the specific plants, if necessary. The request will contain the information on applicable Code requirements, alternative ISI method, and justification (COL 5.2(11).~~"

"5.2.6 Combined License Information"

"~~COL 5.2(11) The COL applicant is to prepare and provide any requests for relief from the ASME Code requirements that are impracticable as a result of limitations of component design, geometry, or materials of construction for the specific plants, if necessary. The request will contain the information on applicable Code requirements, alternative ISI method, and justification.~~"

"Table 1.8-2 (8 of 29)"

"~~COL 5.2(11) The COL applicant is to prepare and provide any requests for relief from the ASME Code requirements that are impracticable as a result of limitations of component design, geometry, or materials of construction for the specific plants, if necessary. The request will contain the information on applicable Code requirements, alternative ISI method, and justification.~~"

Issue #8

The description of the preservice and inservice inspection program should clearly identify which Code Cases, if any, are used. APR1400 FSAR Sections 5.2.4 and 6.6 both indicate that ASME Code Cases listed in Regulatory Guide (RG) 1.147 may be used. However, the applicant did not identify which Code Cases, if any, would be incorporated in the APR1400 design. Therefore, the applicant should revise FSAR Section 5.2.4 (and FSAR Section 6.6 as/when appropriate) to state which ASME Code Cases, if any, are incorporated into the APR1400 design. The discussion should include the applicability of any ASME Code Cases required by 10 CFR 50.55a (e.g., ASME Code Case N-729-1, N-722-1, etc.).

Response

The ASME Code Cases that expected to be used in preservice and inservice inspection programs of APR1400 are listed as follows. The COL 5.2(2) of FSAR 5.2.6 addresses the ASME Code Cases for the ISI program:

1. ASME Code Cases acceptable without limitations
   - N-460, N-494-4, N-508-3, N-526, N-609, N-613-1, N-624, N-663, N-665, N-706-1, N-731, and N-753

2. ASME Code Cases acceptable with additional limitations
   - N-416-4, N-504-4, N-593, N-597-2, N-639, and N-648-1

The above referenced ASME Code Cases are all approved for usage by Regulatory Guide (RG) 1.147 Rev. 17 and will be incorporated into the preservice and inservice inspection program of APR1400 at the construction stage.

ASME Code Case N-729-1 (Alternative Examination Requirements for PWR Reactor Vessel Upper Heads with Nozzles having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1) is also applied with additional limitation by 10CFR50.55a to the preservice and inservice inspection programs of APR1400. ASME Code Case N-722-1 (Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials, Section XI, Division 1) is not applied to APR1400; however, because there are no reactor coolant pressure boundary parts fabricated with Alloy 600/82/182 materials.

Issue #9

For a PWR plant, the applicant must establish an inspection program to detect and correct potential RCPB corrosion caused by boric acid leaks as described in NRC Generic Letter 88-05. To address this issue, the APR1400 DCD provided COL item 5.2(13), which requires that a COL applicant prepare and implement a boric acid prevention program in conformance with GL 88-05. It is acceptable to require a COL applicant to prepare and implement a such a program for a specific plant. However, in addition to describing the actions necessary for a COL applicant, it is the responsibility of the design certification applicant to describe the design features of the APR1400 that enable a COL applicant to effectively perform the required inspections. Therefore, the staff requests that KHNP revise FSAR Section 5.2.4 to

describe how specific design features of the APR1400 enable effective boric acid leak detection inspections.

Response

To supplement the design features of the APR1400 that enable effective boric acid leak detection inspections, the following sentence will be added at the end of FSAR 5.2.4.1.10:

"To ensure easy access to the joint areas or surface of components for boric acid corrosion examinations, the insulation covering the joint area or surface of the components to be inspected is designed to be removed easily or to keep sufficient gap between the insulation and the surface of the reactor vessel closure head for the passage of inspection tools."

Issue #10

FSAR Section 5.2.4.2 states that the PSI program conforms with the edition and addenda of ASME Code, Section XI, as required by 10 CFR 50.55(b). 10 CFR 50.55a(b)(2) provides conditions on the use of the 1970 Edition through the 1976 Winter Addenda and the 1977 Edition through the 2007 Edition with the 2008 Addenda of ASME Code, Section XI, Division 1. The statement in the FSAR indicates that any of the aforementioned ASME Code editions and addenda may be used for the PSI program as long as the conditions in 10 CFR 50.55a(b) are met. However, 10 CFR 50.55a(g)(3) places a limit on the ASME Code, Section XI Editions and Addenda that may be used for the PSI program. Specifically, 10 CFR 50.55a(g)(3) requires ASME Code Class 1, 2, and 3 components to meet the PSI requirements applied to the construction of the particular component.

The ASME Code of construction for the APR1400 is the 2007 Edition with the 2008 Addenda of ASME Code, Section III. 10 CFR 50.55a(g)(3) also states that components may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided that they are incorporated by reference into 10 CFR 50.55a. Therefore, the earliest ASME Code edition and addenda that may be used for the APR1400 preservice inspection program is the 2007 Edition with the 2008 Addenda of ASME Code, Section XI.

To address this issue, please revise FSAR Section 5.2.4 to state that the ASME Code edition and addenda of the PSI program will be in accordance with 10 CFR 50.55a(g)(3).

Response

The second sentence of the first paragraph of FSAR Section 5.2.4.2 will be revised as follows:

"The preservice inspection (PSI) program conforms with the edition and addenda of ASME Section XI, as required by 10 CFR 50.55a(b) and 10 CFR 50.55a(g)(3)."

Issue #1

Title 10 of the Code of Federal Regulations (CFR) Section 50.55a states that systems and components of pressurized water reactors (PWRs) must meet the requirements of the American Society of Mechanical Engineers (ASME) Code as specified in the regulation. The ASME Code requirements that address Class 2 and 3 components exempt from examination are ASME Code, Section XI, IWC-1220 and IWD-1220, respectively. If the criteria of ASME Section XI, IWC-1220 or IWD-1220 are met, then certain ASME Code Class 2 or 3 components (or portions of components) may be exempted from the examination requirements of ASME Section XI, IWC-2500 or IWD-2500, respectively. After reviewing the information provided in FSAR Section 6.6.1, the staff could not determine if any ASME Code Class 2 or 3 components would be exempted from examination for the APR1400 design.

Revise APR1400 FSAR Section 6.6.1 to clarify whether any ASME Code Class 2 or 3 components (or portions of components) in the APR1400 are exempted from the requirements of ASME Section XI, IWC-2500 or IWD-2500. For all components (or portions of components) exempt from examination, the applicant should provide sufficient information in the FSAR for the staff to determine whether the criteria of ASME Section XI, IWC-1220 or IWD-1220 are met.

Response

Exemptions from the Code examination requirements as permitted by ASME Code Section XI, IWC-1220 and IWD-1220 will be listed in the preservice inspection program and the inservice inspection program to be provided by the COL applicant.

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical and Environmental Reports.

Issue #2

If the design of an APR1400 ASME Code Class 1 component is changed by a Combined License (COL) applicant, then APR1400 COL item 5.2(9) requires the COL applicant to address the provisions for accessibility to perform inservice inspection (ISI). However, there is no COL information item provided to address this issue for ASME Code Class 2 and 3 components.

Revise FSAR Section 6.6 to include a COL information item to address the accessibility of ASME Code Class 2 and 3 components for ISI if the design of any APR1400 ASME Code Class 2 or Class 3 components is changed by a COL applicant.

Response

A COL item COL 6.6(3) will be added in Section 6.6.2 for the applicant to address the provisions for accessibility of Class 2 or 3 components for ISI if the design of the APR1400 Class 2 or 3 components is changed from the DCD Design.

Also COL 6.6(4) will be added for the COL applicant to provide the preservice inspection program and the inservice inspection program.

Impact on DCD

DCD Section 6.6.2, 6.6.9, and Table 1.8-2 will be revised as indicated in the attached MCB-CQ-201505 6.6 #2 markup.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical and Environmental Reports.

Issue #3

FSAR Section 6.6.3 states that the examination techniques to be used for ISI include visual, surface, and volumetric examination methods. However, the FSAR does not identify which specific examination methods (e.g., magnetic particle, radiographic testing, etc.) will be used. This information is needed so that the staff can determine that the nondestructive examination methods used are in accordance with the ASME Code, Section XI requirements. Please describe the specific surface and volumetric examination methods that will be used for the preservice inspection and ISI of ASME Code Class 2 and 3 components.

Response

Examination techniques such as ultrasonic, magnetic particle, liquid penetrant, and visual examination methods to be used for preservice and inservice inspection will meet the requirements of ASME Code Section XI.

The specific examination methods for surface and volumetric examination will be included in the preservice inspection program and inservice inspection program.

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical and Environmental Reports.

6.6 In-service Inspection of Class 2 and 3 Components

This section describes preservice and in-service inspection and system pressure test for ASME Section III Class 2 and 3 components. The COL applicant is to identify the implementation milestones for ASME Section Xl in-service inspection program for ASME Section III Class 2 and 3 components in accordance with the requirements of 10 CFR 50.55a(g) (Reference 1) (COL 6.6(1)).

6.6.1 Components Subject to Examination

A preservice inspection (PSI) and an in-service inspection (ISI) are performed for the examination of ASME Code Class 2 and 3 components in accordance with ASME Section XI (Reference 2). Table 3.2-1 specifies safety Classes for components that have a safety function in accordance with ASME Section III (Reference 3), Article NCA-2000. Subsection 3.2.2 defines the relationship between these safety Classes and NRC Regulatory Guide (RG) 1.26 (Reference 4). The purpose of the in-service inspection is to periodically monitor the systems or components requiring in-service inspection in order to identify and repair the indications that do not meet acceptance standards.

ASME Code Class 2 and 3 pressure retaining components are examined in accordance with the requirements of ASME Section XI, Articles IWC-2500 and IWD-2500, respectively.

ASME Section XI, IWC-1220 or IWD-1220, allows exemption of examination to certain components or portions of components, and those exempted items are listed in the in-service inspection program. Approved Code Cases that are listed in NRC RG 1.147 (Reference 5) may be used. Subsection 3.13.2 describes the preservice and in-service inspection applicable to threaded fasteners in conformance with the criteria of ASME Code, Section XI for bolting and mechanical joints.

the preservice inspection program and

(COL 6.6(4)).

6.6.2 Accessibility

Provisions for accessibility are incorporated in the design processes for ASME Code Class 2 and 3 components in accordance with ASME Section XI, IWA-1500.

The COL applicant is to address the accessibility of Class 2 or 3 components for ISI if the design of the APR1400 Class 2 or 3 components is changed from the DCD Design (COL 6.6(3))

Accessibility to equipment for maintenance, testing, and inspection is a basic element of design process. Provisions are made in the design and layout of Code Class 2 and 3 systems to allow for conformance with the in-service inspection requirements contained in ASME Section XI, Articles IWC-2000 and IWD-2000, and as defined in the in-service inspection program. ASME Code Class 2 and 3 components requiring inspection are designed for and are provided with access to enable the performance of ASME Section XI inspections onsite. Systems and components are designed so that design, materials, and geometry do not restrict inspections required by ASME Section XI.

Welds and other areas requiring periodic inspection are made accessible. Reinforcing pads, supports, piping, and equipment are located so as not to obstruct welds. Insulating materials are removable to provide accessibility for the required in-service inspection.

6.6.3 Examination Techniques and Procedures

The examination techniques to be used for in-service inspection include visual, surface, and volumetric examination methods. Procedures for all examinations are prepared to include descriptions of the equipment, inspection technique, operator qualifications, calibration standards, flaw evaluation, and records. The techniques and procedures meet the requirements of ASME Section XI, Articles IWC-2000 and IWD-2000. PSI and subsequent ISI are conducted with equivalent equipment and techniques.

For the preservice inspection, all of the items selected for in-service inspection are performed once in accordance with ASME Section XI, IWC-2000 and IWD-2000.

Ultrasonic examination personnel, equipment, and procedures are qualified in accordance with ASME Section XI, Appendix VII and VIII.

Approved Code Cases that are listed in NRC RG 1.147 are used.

6.6.4 Inspection Intervals

and will be specified in the preservice inspection program and the inservice inspection program (COL 6.6(4)).

Inspection schedules and intervals for Class 2 and 3 components are in accordance with ASME Section XI, Subarticles IWA-2400, IWC-2400, and IWD-2400.

COL 6.6(3) The COL applicant is to address the provisions to accessibility of Class 2 or 3 components for ISI if the design of the APR1400 Class 2 or 3 components is changed from the DCD Design.

b. For those portions of high-energy fluid system piping between the containment penetration wall and auxiliary building anchor wall beyond isolation valve, the extent of in-service examination completed during each inspection interval provides 100 percent volumetric examination of circumferential and longitudinal pipe welds within the boundary of these portions of piping.

c. The areas subject to examination are defined in accordance with examination categories C-F-1 and C-F-2 for Class 2 piping welds in ASME Section XI, Article IWC-2000.

Information concerning areas subject to examination, method of examination and frequency of examination is contained in the in-service inspection program. The program includes the high-energy fluid piping systems described in Subsection 3.6.1 and 3.6.2.

An augmented in-service inspection is conducted to provide reasonable assurance of the structural integrity of cold-worked austenitic stainless steel components (refer to Subsection 6.1.1.1). The COL applicant is to identify the implementation milestone for the augmented in-service inspection program (COL 6.6(2)).

6.6.9 Combined License Information

COL 6.6(1) The COL applicant is to identify the implementation milestones for ASME Section Xl in-service inspection program for ASME Section III Class 2 and 3 components.

COL 6.6(2) The COL applicant is to identify the implementation milestone for the augmented in-service inspection program.

6.6.10 References

1. 10 CFR 50.55a (g), "Inservice Inspection Requirements," U.S. Nuclear Regulatory Commission.

2. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," The American Society of Mechanical Engineers, the 2007 Edition with the 2008 Addenda.

COL 6.6(4) The COL Applicant is to provide the preservice inspection program and the inservice inspection program.

Table 1.8-2 (9 of 29)

Item No.	Description
COL 6.1(1)	The COL applicant is to identify the implementation milestones for the coatings program.
COL 6.2(1)	The COL applicant is to identify the implementation milestone for the CILRT program.
COL 6.3(1)	The COL applicant is to prepare operational procedures and maintenance programs as related to leak detection and contamination control.
COL 6.3(2)	The COL applicant is to maintain complete documentation of system design, construction, design modifications, field changes, and operations.
COL 6.4(1)	The COL applicant is to provide automatic and manual operating procedures for the control room HVAC system, which are required in the event of a postulated toxic gas release.
COL 6.4(2)	The COL applicant is to provide the details of specific toxic chemicals of mobile and stationary sources and evaluate the MCR habitability based on the recommendations in NRC RG 1.78 to meet the requirements of TMI Action Plan Item III.D.3.4 and GDC 19.
COL 6.4(3)	The COL applicant is to identify and develop toxic gas detection requirements to protect the operators and provide reasonable assurance of the MCR habitability. The number, locations, sensitivity, range, type, and design of the toxic gas detectors are to be developed by the COL applicant.
COL 6.5(1)	The COL applicant is to provide the operational procedures and maintenance program as related to leak detection and contamination control.
COL 6.5(2)	The COL applicant is to maintain the complete documentation of system design, construction, design modifications, field changes, and operations.
COL 6.6(1)	The COL applicant is to identify the implementation milestones for ASME Section Xl inservice inspection program for ASME Code Section III Class 2 and 3 components.
COL 6.6(2)	The COL applicant is to identify the implementation milestone for the augmented inservice inspection program.
COL 6.8(1)	The COL applicant is to provide the operational procedures and maintenance program for leak detection and contamination control.
COL 6.8(2)	The COL applicant is to provide the preparation of cleanliness, housekeeping, and foreign materials exclusion program.
COL 6.8(3)	The COL applicant is to maintain the complete documentation of system design, construction, design modifications, field changes, and operations.
COL 6.8(4)	The COL applicant is responsible for the establishment and implementation of the Maintenance Rule program in accordance with 10 CFR 50.65.
COL 7.5(1)	The COL applicant is to provide a description of the site-specific AMI variables such as wind speed, and atmosphere stability temperature difference.
COL 7.5(2)	The COL applicant is to provide a description of the site-specific EOF.

COL 6.6(3) The COL applicant is to address the provisions to accessibility of Class 2 or 3 components for ISI if the design of the APR1400 Class 2 or 3 components is changed from the DCD Design.

COL 6.6(4) The COL applicant is to provide the preservice inspection program and the inservice inspection program.