



U.S. NUCLEAR REGULATORY COMMISSION
STANDARD REVIEW PLAN

5.2.4 REACTOR COOLANT PRESSURE BOUNDARY INSERVICE INSPECTION AND TESTING

REVIEW RESPONSIBILITIES

- Primary** - Organization responsible for the review of component integrity issues related to reactor coolant pressure boundary
- Secondary** - Organization responsible for component integrity issues related to reactor vessels.

I. AREAS OF REVIEW

Components that are part of the reactor coolant pressure boundary (RCPB) must be designed to permit periodic inspection and testing of important areas and features to assess their structural and leaktight integrity. Inservice inspection (ISI) programs are based on the requirements of 10 CFR 50.55a, "Codes and Standards," in that Code Class 1 components, as defined in Section III of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (hereinafter "the ASME Code"), meet the applicable inspection requirements set forth in Section XI of the ASME Code, "Rules for Inservice Inspection of Nuclear Power Plant Components." Inservice inspection includes a pre-service examination prior to initial plant startup as required by Subsubarticle NB-5280 of Section III, Division 1, of the ASME Code, "Rules for Construction of Nuclear Facility Components."

The specific areas of review are as follows:

1. System Boundary Subject to Inspection. The ISI program for those portions of the RCPB consisting of Code Class 1 components, other than steam generator tubes, is reviewed.

Revision 2 - March 2007

USNRC STANDARD REVIEW PLAN

This Standard Review Plan, NUREG-0800, has been prepared to establish criteria that the U.S. Nuclear Regulatory Commission staff responsible for the review of applications to construct and operate nuclear power plants intends to use in evaluating whether an applicant/licensee meets the NRC's regulations. The Standard Review Plan is not a substitute for the NRC's regulations, and compliance with it is not required. However, an applicant is required to identify differences between the design features, analytical techniques, and procedural measures proposed for its facility and the SRP acceptance criteria and evaluate how the proposed alternatives to the SRP acceptance criteria provide an acceptable method of complying with the NRC regulations.

The standard review plan sections are numbered in accordance with corresponding sections in Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)." Not all sections of Regulatory Guide 1.70 have a corresponding review plan section. The SRP sections applicable to a combined license application for a new light-water reactor (LWR) are based on Regulatory Guide 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)."

These documents are made available to the public as part of the NRC's policy to inform the nuclear industry and the general public of regulatory procedures and policies. Individual sections of NUREG-0800 will be revised periodically, as appropriate, to accommodate comments and to reflect new information and experience. Comments may be submitted electronically by email to NRR_SRP@nrc.gov.

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2. Accessibility. The descriptive information that pertains to the general and specific provisions for access to components covered by the ASME Code, Section XI, is reviewed. In addition, the remote access equipment needed to perform inspections in a radiation field or areas not readily accessible to inspection personnel is reviewed.
3. Examination Categories and Methods. The descriptive information that pertains to Section XI of the ASME Code, Subsection IWA, "General Requirements," and Subsection IWB, "Requirements for Class 1 Components of Light-Water Cooled Power Plants," is reviewed.
4. Inspection Intervals. The schedules of examinations and inspections in the applicant's or licensee's safety analysis report (SAR) and plant Technical Specifications are reviewed. In addition, those inspections which are performed during the inspection interval, such as during refueling outages, are reviewed.
5. Evaluation of Examination Results
 - A. The proposed evaluation methods for any flaws detected during ISI examinations are reviewed.
 - B. The repair procedures proposed for components that reveal defects during ISI examinations are reviewed.
6. System Pressure Tests. The descriptive information on system pressure tests of Code Class 1 components is reviewed.
7. Code Exemptions. The ASME Section XI Code exemptions as permitted by Subsubarticle IWB-1220, "Components Exempt from Examination," are reviewed.
8. Code Cases. ASME Code Cases referenced in Regulatory Guide 1.147 that may have been invoked in connection with the ISI program are reviewed. Code cases not referenced in Regulatory Guide 1.147 will be reviewed on a case-by-case basis.
9. Augmented ISI to Protect Against Postulated Piping Failures. The augmented ISI Program to protect against postulated failures of the high-energy fluid system piping between containment isolation valves is reviewed.
10. Other Inspection Programs. Inspection programs covering augmented inspection activities for intergranular stress corrosion cracking (IGSCC), feedwater and control rod drive nozzles, boric acid leaks, and incore neutron monitoring system thimble tube integrity, are reviewed to verify that staff positions are addressed.
11. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC). For design certification (DC) and combined license (COL) reviews, the staff reviews the applicant's proposed ITAAC associated with the structures, systems, and components (SSCs) related to this SRP section in accordance with SRP Section 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria." The staff recognizes that the review of ITAAC cannot be completed until after the rest of this portion of the application has been reviewed against acceptance criteria contained in this SRP section. Furthermore, the staff reviews the ITAAC to ensure that all SSCs in this area of review are identified and addressed as appropriate in accordance with SRP Section 14.3.

12. COL Action Items and Certification Requirements and Restrictions. For a DC application, the review will also address COL action items and requirements and restrictions (e.g., interface requirements and site parameters).

For a COL application referencing a DC, a COL applicant must address COL action items (referred to as COL license information in certain DCs) included in the referenced DC. Additionally, a COL applicant must address requirements and restrictions (e.g., interface requirements and site parameters) included in the referenced DC.

13. Operational Program Description and Implementation. For a COL application, the staff reviews the Preservice Inspection, Inservice Inspection and Inservice Testing Program descriptions and the proposed implementation milestones. The staff also reviews final safety analysis report (FSAR) Table 13.x to ensure that the Inservice Inspection and Inservice Testing Programs and associated milestones are included.

The inservice inspection requirements for steam generator tube inspection are reviewed under SRP Section 5.4.2.2, "Steam Generator Program."

Review Interfaces

Other SRP sections interface with this section as follows:

1. The ISI requirements for ASME Code Class 2 and 3 components and high-energy fluid system piping between containment isolation valves are reviewed under SRP Section 6.6, "Inservice Inspection and Testing of Class 2 and 3 Components."
2. The program for assuring the integrity of bolting and threaded fasteners is reviewed under SRP Section 3.13, "Threaded Fasteners - ASME Code Class 1, 2, and 3."
3. The reactor vessel material surveillance program is reviewed under SRP Sections 5.3.1, "Reactor Vessel Materials" and 5.3.3, "Reactor Vessel Integrity."
4. The ISI requirements for steam generator tube inspection are reviewed under SRP Section 5.4.2.2, "Steam Generator Program."
5. Verification that systems and components are appropriately classified in accordance with regulatory requirements and NRC quality group classification guidance, including verification that Quality Group A, B, and C components meet the requirements for Code Class 1, 2, and 3 components is performed under SRP Sections 3.2.2, "System Quality Group Classification" and 5.2.1.1, "Compliance with the Codes and Standards Rule, 10 CFR 50.55a."
6. Verification of the acceptability of any ASME Code Cases that the applicant may have invoked in connection with the ISI program is performed under SRP Section 5.2.1.2, "Applicable Code Cases."
7. For COL reviews of operational programs, the review of the applicant's implementation plan is performed under SRP Section 13.4, "Operational Programs."

The specific acceptance criteria and review procedures are contained in the referenced SRP sections.

II. ACCEPTANCE CRITERIA

Requirements

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

1. General Design Criterion (GDC) 32 found in Appendix A to Part 50, as it relates to periodic inspection and testing of the RCPB;
2. 10 CFR 50.55a, as it relates to the requirements for testing and inspecting Code Class 1 components of the RCPB as specified in Section XI of the ASME Code;
3. 10 CFR 52.47(b)(1), which requires that a DC application contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a plant that incorporates the design certification is built and will operate in accordance with the design certification, the provisions of the Atomic Energy Act, and the NRC's regulations;
4. 10 CFR 52.80(a), which requires that a COL application contain the proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will operate in conformity with the combined license, the provisions of the Atomic Energy Act, and the NRC's regulations.

SRP Acceptance Criteria

Specific SRP acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above are as follows for the review described in this SRP section. The SRP is not a substitute for the NRC's regulations, and compliance with it is not required. However, an applicant is required to identify differences between the design features, analytical techniques, and procedural measures proposed for its facility and the SRP acceptance criteria and evaluate how the proposed alternatives to the SRP acceptance criteria provide acceptable methods of compliance with the NRC regulations.

1. System Boundary Subject to Inspection. The applicant's or licensee's definition of the RCPB is acceptable if it is in agreement with the following criteria: for pressurized water reactor (PWR) and boiling water reactor (BWR) nuclear power systems, the inspection requirements of 10 CFR 50.55a, as detailed in Section XI of the ASME Code, must be met for all Class 1 pressure-containing components (and their supports). The system boundary, as defined in 10 CFR 50.2, includes all pressure vessels, piping, pumps, and valves which are part of the reactor coolant system, or connected to the reactor coolant system, up to and including:
 - A. The outermost containment isolation valve in system piping that penetrates the primary reactor containment.
 - B. The second of two valves normally closed during normal reactor operation in system piping that does not penetrate primary reactor containment.

- C. The reactor coolant system safety and relief valves.
- 2. Accessibility. The design and arrangement of system components are acceptable if adequate clearance is provided in accordance with Subarticle IWA-1500, "Accessibility," of the ASME Code, Section XI.
- 3. Examination Categories and Methods. The examination categories and methods specified in the SAR are acceptable if they are in agreement with the criteria in Article IWB-2000, "Examination and Inspection," of Section XI of the ASME Code. Every area subject to examination should fall within one or more of the examination categories in Article IWB-2000 and should be examined at least to the extent specified. The methods of examination for the components and parts of the pressure retaining boundaries are also listed in the requirements of Article IWB-2000 of Section XI of the ASME Code.

The applicant's or licensee's examination techniques and procedures used for preservice examination or inservice inspection of the system are acceptable if they are in agreement with the following criteria:

- A. The methods, techniques, and procedures for visual, surface, or volumetric examination are in accordance with Article IWA-2000, "Examination and Inspection," and Article IWB-2000, "Examination and Inspection," of Section XI of the ASME Code.
 - B. The acceptance standards for the examination results required by 3.A above are given in Section XI, Article IWB-3000, "Acceptance Standards."
 - C. The methods, procedures, and requirements for qualification of personnel performing ultrasonic examination are in accordance with the requirements of Appendix VII to Division 1 of Section XI of the ASME Code.
 - D. Performance demonstration for ultrasonic examination procedures, equipment, and personnel used to detect and size flaws is in accordance with the requirements of Appendix VIII of Section XI of the ASME Code.
 - E. The methods, procedures, and requirements for ultrasonic examination of reactor-vessel-to-flange welds, closure-head-to-flange welds, and integral attachment welds incorporate the regulatory positions provided in Regulatory Guide 1.150, unless qualified by performance demonstration in accordance with the requirements of Appendix VIII of Section XI of the ASME Code.
- 4. Inspection Intervals. The required examinations and pressure tests must be completed during each ten-year interval of service, hereinafter designated as the inspection interval. In addition, the scheduling of the program must comply with the provisions of Article IWA-2000, "Examination and Inspection," concerning inspection intervals of Section XI of the ASME Code.
 - 5. Evaluation of Examination Results
 - A. The standards for evaluation of examination results are acceptable if they are in accordance with the requirements of Section XI, Article IWB-3000, "Acceptance Standards."

- B. The proposed program regarding repair or replacement of components containing defects is acceptable if the program is in accordance with the requirements of Section XI, Article IWA-4000, "Repair/Replacement Activities." The criteria that establish the need for repair or replacement are described in Section XI, Article IWB-3000, "Acceptance Standards."
 - C. The standards for evaluation of examination results should be in accordance with the requirements of Sections XI, Article IWB-3000, "Acceptance Standards," if Regulatory Guide 1.150 is used.
6. System Pressure Tests. The pressure-retaining Code Class 1 component leakage and hydrostatic pressure test program is acceptable if the program is in accordance with the requirements of Section XI, Article IWB-5000, "System Pressure Tests," and the technical specification requirements for operating limitations during heatup, cooldown, and system hydrostatic pressure testing. In some cases, these limitations may be more severe than those in Article IWB-5000.
7. Code Exemptions. Exemptions from Code examinations should be permitted if the criteria in Subsubarticle IWB-1220, "Components Exempt from Examination," are met. The applicant's or licensee's program should list the exemptions taken in accordance with the ASME Code.
8. Code Cases. ASME code cases referenced by the COL application are reviewed for acceptability and compliance with Regulatory Guide 1.147. Code cases not specifically referenced in Regulatory Guide 1.147 will be reviewed and accepted on a case-by-case basis.
9. Augmented ISI to Protect Against Postulated Piping Failures. The reviewer verifies that the high-energy system piping between containment isolation valves should receive an augmented ISI as follows:
- A. Protective measures, pipe whip restraints, structures, supports and guard pipes should not prevent access required to conduct the inservice examinations specified in the ASME Code, Section XI, Division 1.
 - B. For those portions of high-energy fluid system piping between containment isolation valves, the inservice examination completed during each inspection interval should provide 100% volumetric examination of circumferential and longitudinal pipe welds.
 - C. For those portions of high-energy fluid system piping enclosed in guard pipes, inspection ports should be provided in the guard pipes to permit the required examination of circumferential pipe welds. Inspection ports should not be located in the portion of the guard pipe passing through the annulus of dual-barrier containment structures.
 - D. The areas subject to examination should be defined in accordance with the Examination Category for Class 1 piping welds specified in Article IWB-2000.

10. Other Inspection Programs

- A. For BWR plants, the reviewer ascertains that the ISI program addresses the staff positions concerning augmented inspections for intergranular stress corrosion cracking (IGSCC) provided in Generic Letter 88-01, Supplement 1 to Generic Letter 88-01, and NUREG-0313, Revision 2.
- B. For BWR plants, the reviewer ascertains that the ISI program adequately addresses the augmented inspections of feedwater and control rod drive nozzles as discussed in NUREG-0619. The staff may approve alternatives to the inspection guidelines in NUREG-0619.
- C. For PWR plants, the reviewer verifies that the applicant or licensee has established a program to detect and correct potential RCPB corrosion caused by boric acid leaks, as described in Generic Letter 88-05.
- D. For Westinghouse PWR plants, the reviewer verifies that the applicant or licensee has established an inspection program to periodically confirm the integrity of incore neutron-monitoring system thimble tubes, as described in NRC Bulletin 88-09.

11. Operational Programs. For COL reviews, the description of the operational program and proposed implementation milestone(s) for the Preservice Inspection, Inservice Inspection and Inservice Testing Programs are reviewed in accordance with 10 CFR 50.55a(g) and 10 CFR Part 50, Appendix A.

Technical Rationale

The technical rationale for application of these acceptance criteria to the areas of review addressed by this SRP section is discussed in the following paragraphs:

- 1. General Design Criterion 32 requires, in part, that all components that are part of the RCPB be designed to permit periodic inspection and testing of important areas and features to assess structural and leak-tight integrity. SRP Section 5.2.4 is the primary SRP section assessing compliance with General Design Criterion 32. Meeting the requirements of General Design Criterion 32 assures that an effective periodic inspection program can be performed on the RCPB, so that aging effects or other incipient degradation phenomena may be identified and preventive measures promptly taken to preclude potential loss of reactor coolant or impairment of reactor core cooling.
- 2. According to 10 CFR 50.55a, "Codes and Standards," structures, systems, and components (SSCs) must be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety function they are intended to perform. Section 50.55a incorporates by reference Section XI of the ASME Boiler and Pressure Vessel Code. Section XI defines, for each Code Class, the intervals between inservice inspections, the scope of the inspection activity, the inspection sample, the sample selection methodology, the method of inspection, the acceptance criteria for various types and sizes of material flaws identified during the inspection, and various other related technical details required for properly performing the inservice inspection activity. Additionally, the recommendations in Regulatory Guide 1.150 apply as specified in Subsection II.3.E of the SRP Acceptance Criteria of this SRP section. Performing a periodic inspection program based on the requirements of 10

CFR 50.55a and ASME Code Section XI, as supplemented with the guidance in Regulatory Guide 1.150, is the means of maintaining the structural integrity of the RCPB at a level of reliability comparable to that at which it was initially installed and of ensuring the structural and leak-tight integrity of the RCPB.

III. REVIEW PROCEDURES

The reviewer will select material from the procedures described below, as may be appropriate for a particular case.

These review procedures are based on the identified SRP acceptance criteria. For deviations from these acceptance criteria, the staff should review the applicant's evaluation of how the proposed alternatives provide an acceptable method of complying with the relevant NRC requirements identified in Subsection II.

1. System Boundary Subject to Inspection. The information furnished in the SAR is reviewed for agreement with the SRP Acceptance Criteria in Subsection II.1 of this SRP section and to verify that any differences between the applicant's or licensee's definition of the RCPB and Subsection II.1 are identified and justified; e.g., "Pressurizer: not applicable, as plant is a BWR," or "No longitudinal welds in beltline region as vessel is constructed of forged rings."
2. Accessibility. The descriptive information concerning accessibility furnished in the SAR is reviewed for compliance with the SRP Acceptance Criteria in Subsection II.2 of this SRP section. The reviewer verifies that the clearances supplied for general access to the system components listed in Article IWB-2000, "Examination and Inspection," of Section XI of the ASME Code are adequate.

The reviewer verifies that adequate provisions are made for remote inspection of those components affected by radiation fields after plant startup. These components include the beltline welds and reactor vessel nozzle interior surfaces. The reviewer verifies that remote inspection devices proposed for periodic inservice inspections will be used for the preservice baseline inspection program to demonstrate feasibility.

3. Examination Categories and Methods. The reviewer verifies that the examination techniques described by the applicant or licensee are the same as those in the SRP Acceptance Criteria in Subsection II.3 of this SRP section. If alternative examination methods are proposed, they are reviewed to verify that the results are equivalent or superior to those in Subarticles IWA-2200, "Examination Methods," and IWB-2200, "Preservice Examination," of Section XI, and that the acceptance standards of Article IWB-3000, "Acceptance Standards," of Section XI of the ASME Code are met.

The reviewer verifies that the personnel qualification and requalification portion of the ISI program is in conformance with applicable portions of Section XI of the ASME Code. Additionally, qualification of personnel performing ultrasonic examinations should comply with the requirements of Appendix VII, "Qualification of Nondestructive Examination Personnel for Ultrasonic Examination," of ASME Code Section X.I

The reviewer ascertains, with respect to ultrasonic examination systems, that the ISI program complies with the requirements of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," to Section XI, Division 1 of the ASME Code in accordance with the implementation requirements of 10 CFR 50.55a.

The reviewer verifies that the applicable guidance provided in Regulatory Guide 1.150 has been appropriately incorporated into the ISI program (refer to Subsection II.3.E of the SRP Acceptance Criteria in this SRP section).

4. Inspection Intervals. The Technical Specification program for inservice inspection is reviewed to establish that the inspection schedule for every area and component in the program is in agreement with the SRP Acceptance Criteria in Subsection II.4 of this SRP section.
5. Evaluation of Examination Results. The criteria statements provided by the applicant or licensee are reviewed for agreement with Subsection II.5 of this SRP section as follows:
 - A. The reviewer verifies that the applicant's or licensee's criteria comply with Article IWB-3000, "Acceptance Standards," of Section XI regarding standards for examination evaluation.
 - B. The reviewer verifies that the applicant's or licensee's criteria comply with Article IWA-4000, "Repair/Replacement Activities," of Section XI regarding repair procedures.
 - C. The reviewer verifies that the applicant's or licensee's criteria comply with the guidance provided in Regulatory Guide 1.150, if applicable, as specified in Subsection II.3.E of the SRP Acceptance Criteria in this SRP section.
6. System Pressure Test. The reviewer determines that the Technical Specification on pressure testing of the RCPB adheres to the SRP Acceptance Criteria in Subsection II.6 of this SRP section. The Technical Specification on operating limitations during heatup, cooldown, and system pressure testing should be referenced.
7. Code Exemptions. The reviewer verifies that the exemptions from ASME Code examinations are in accordance with the requirements of Subsubarticle IWB-1220, "Components Exempt from Examination."
8. Relief Requests. The reviewer determines if an applicant or licensee has demonstrated that an ASME Code requirement is impractical due to the limitations of design, geometry, or materials of construction.
9. Code Cases. The ISI program code cases are reviewed to determine that the code cases are approved by the NRC and included in Regulatory guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Divisions 1.
10. Augmented ISI to Protect Against Postulated Piping Failures. The ISI Program is reviewed to verify that the inspection attributes of the program are in agreement are in agreement with the SRP Acceptance Criteria in Subsection II.10 of this SRP section for high-energy fluid system piping between containment isolation valves.
11. Other Inspection Programs. The reviewer verifies that the inspection attributes of the ISI Program, or other inspection or testing programs, address the staff positions identified in the SRP Acceptance Criteria in Subsection II.10 of this SRP section for BWR plants (IGSCC and feedwater and control rod drive nozzles) and PWR plants (RCPB corrosion caused by boric acid leaks and incore neutron-monitoring system thimble tube integrity).

Operational Programs. The reviewer verifies that the Preservice Inspection, Inservice Inspection and Inservice Testing Programs are fully described and that implementation milestones have been identified. The reviewer verifies that the program and implementation milestones are included in FSAR Table 13.x.

Implementation of ISI program will be verified by reviewing the program in accordance with NRC Inspection Manual Chapter IMC-2504, "Construction Inspection Program - Non-ITAAC Inspections."

For review of a DC application, the reviewer should follow the above procedures to verify that the design, including requirements and restrictions (e.g., interface requirements and site parameters), set forth in the final safety analysis report (FSAR) meets the acceptance criteria. DCs have referred to the FSAR as the design control document (DCD). The reviewer should also consider the appropriateness of identified COL action items. The reviewer may identify additional COL action items; however, to ensure these COL action items are addressed during a COL application, they should be added to the DC FSAR.

For review of a COL application, the scope of the review is dependent on whether the COL applicant references a DC, an early site permit (ESP) or other NRC approvals (e.g., manufacturing license, site suitability report or topical report).

For review of both DC and COL applications, SRP Section 14.3 should be followed for the review of ITAAC. The review of ITAAC cannot be completed until after the completion of this section.

IV. EVALUATION FINDINGS

The reviewer verifies that the applicant has provided sufficient information and that the review and calculations (if applicable) support conclusions of the following type to be included in the staff's safety evaluation report. The reviewer also states the bases for those conclusions.

"To ensure that no deleterious defects develop during service, selected welds and weld heat-affected zones will be inspected prior to plant startup and periodically throughout the life of the plant. The applicant (licensee) has stated that the inservice inspection (ISI) program will comply (complies) with the rules published in 10 CFR 50.55a. The design of the reactor coolant system incorporates provisions for access for inservice inspection in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, (xx) Edition, including Addenda through the (xx) Addenda. Suitable equipment will be (has been) developed and installed to facilitate the remote inspection of these areas of the reactor coolant pressure boundary that are not readily accessible to inspection personnel. The ISI program will consist of a preservice examination plan and an inservice inspection plan. The conduct of periodic inspections and pressure testing of pressure-retaining components of the reactor coolant pressure boundary in accordance with the requirements in applicable subsections of Section XI of the ASME Code provides reasonable assurance that evidence of structural degradation or loss of leak-tight integrity occurring during service will be detected in time to permit corrective action before the safety function of a component is compromised. Compliance with the inservice inspections required by this Code constitutes an acceptable basis for satisfying in part the requirements of General Design Criterion 32.

The staff concludes that the inservice program is acceptable and meets the inspection and testing requirements of General Design Criterion 32 and 10 CFR 50.55a. This conclusion is based on the applicant's or licensee's meeting the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," as reviewed by the staff and determined to be appropriate for this application."

Within 12 months after COL issuance, the licensee shall submit the NRC an implementation schedule for the Reactor Coolant Pressure Boundary Preservice Inspection, Inservice Inspection and Inservice Testing Program listed in FSAR Table [13.x]. The schedule shall be updated every 6 months until 12 months before scheduled fuel load and monthly thereafter until either the last program in FSAR Table [13.x] has been fully implemented or the plant has been placed into commercial service, whichever comes first.

The applicant described the Inservice Inspection and Inservice Testing Programs and their implementation in conformance with 10 CFR 50.55a(g) and 10 CFR Part 50, Appendix A.

For DC and COL reviews, the findings will also summarize the staff's evaluation of requirements and restrictions (e.g., interface requirements and site parameters) and COL action items relevant to this SRP section.

In addition, to the extent that the review is not discussed in other SER sections, the findings will summarize the staff's evaluation of the ITAAC, including design acceptance criteria, as applicable.

V. IMPLEMENTATION

The staff will use this SRP section in performing safety evaluations of DC applications and license applications submitted by applicants pursuant to 10 CFR Part 50 or 10 CFR Part 52. Except when the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the staff will use the method described herein to evaluate conformance with Commission regulations.

The provisions of this SRP section apply to reviews of applications submitted six months or more after the date of issuance of this SRP section, unless superseded by a later revision.

VI. REFERENCES

1. 10 CFR 50.55a, "Codes and Standards."
2. 10 CFR Part 50, Appendix A, General Design Criterion 32, "Inspection of Reactor Coolant Pressure Boundary."
3. Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations."
4. NUREG-0313, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping," Revision 2, January 1988.

5. NRC letter to all licensees of operating boiling water reactors (BWRs) and holders of construction permits for BWRs, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping (Generic Letter No. 88-01)," January 25, 1988.
6. NRC letter to all licensees of operating boiling water reactors (BWRs) and holders of construction permits for BWRs, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping (Generic Letter No. 88-01, Supplement 1)," February 4, 1992.
7. NRC letter to all licensees of operating PWRs and holders of construction permits for PWRs, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants (Generic Letter No. 88-05)," March 17, 1988.
8. NRC bulletin to all holders of operating licenses or construction permits for Westinghouse designed nuclear power reactors that utilize bottom mounted instrumentation, "Thimble Tube Thinning in Westinghouse Reactors (NRC Bulletin No. 88-09)," July 26, 1988.
9. ASME Boiler and Pressure Vessel Code, Section III, "Rules for Construction of Nuclear Facility Components," Subsection NCA, "General Requirements for Division 1 and Division 2," and Division 1, Subsection NB, "Class 1 Components," American Society of Mechanical Engineers.
10. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," Division 1, "Rules for Inspection and Testing of Components of Light-Water Cooled Plants," American Society of Mechanical Engineers.
11. NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking," November 1980.
12. SECY-05-0197, "Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria."
13. NRC Inspection Manual Chapter IMC-2504, "Construction Inspection Program - Non-ITAAC Inspections," issued April 25, 2006.

PAPERWORK REDUCTION ACT STATEMENT

The information collections contained in the Standard Review Plan are covered by the requirements of 10 CFR Part 50 and 10 CFR Part 52, and were approved by the Office of Management and Budget, approval number 3150-0011 and 3150-0151.

PUBLIC PROTECTION NOTIFICATION

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.
