



U.S. NUCLEAR REGULATORY COMMISSION
STANDARD REVIEW PLAN
 OFFICE OF NUCLEAR REACTOR REGULATION

4.5.2 REACTOR INTERNAL AND CORE SUPPORT STRUCTURE MATERIALS

REVIEW RESPONSIBILITIES

Primary - Organization responsible for review of component integrity issues related to vessel internals

Secondary - Organization responsible for review of welding technology

I. AREAS OF REVIEW

Section 50.55a, "Codes and Standards," of 10 CFR Part 50, and General Design Criterion (GDC) 1 of Appendix A to 10 CFR Part 50 require that structures, systems, and components (SSCs) important to safety be designed, fabricated, and tested to quality standards commensurate with the importance of the safety function to be performed. The purpose of this standard review plan (SRP) section is to review and evaluate the adequacy of the materials selected for the construction of the reactor internal and core support structures, as defined in NG-1120 of Section III of the ASME Boiler and Pressure Vessel Code (hereafter "the Code"), and to assure that the reactor internal and core support structures meet these regulations. The reactor internal and core support structures reviewed under this SRP section include all structures and components within the pressure vessel other than the fuel and control assemblies, and instrumentation.

Rev. 3 - xxx 2006

USNRC STANDARD REVIEW PLAN

This Standard Review Plan, NUREG-0800, has been prepared to establish criteria that the Office of Nuclear Reactor Regulation 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 their 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 the Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (LWR Edition)." Not all sections of the standard format have a corresponding review plan section. The SRP sections applicable to a combined license application for a new light-water reactor (LWR) will be based on Regulatory Guide DG-1145, "Combined License Applications for Nuclear Power Plants (LWR Edition)," as superseded by the final guide, until the SRP itself is updated.

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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This SRP section covers the material , component design, fabrication and inspection to assure structural integrity in compliance with Section 50.55a and General Design Criterion 1 of Appendix A to 10 CFR Part 50.

The following areas in the applicant's safety analysis report (SAR) relating to reactor internal and core support structure materials are reviewed; specific areas of review are as follows:

1. Materials

The review includes the acceptability of the materials, including weld materials, to be used for the reactor internals and core support structures.

The adequacy and suitability of the materials specified for the reactor internals and core support structures are reviewed in terms of their fracture toughness, stress corrosion resistance, fabricability, and other mechanical properties.

2. Controls on Welding

The review includes the controls on welding for reactor internals and core support structures.

3. Nondestructive Examination

The review includes information submitted by the applicant on the nondestructive examination procedures used for inspection of each product form.

4. Austenitic Stainless Steel

Austenitic stainless steels are primarily used for the construction of the reactor internals and core support structures. These steels may be used in a variety of product forms, including several stabilized product forms. Unstabilized austenitic stainless steels, such as Types 304 and 316, are frequently specified.

Since unstabilized compositions are susceptible to stress corrosion cracking when exposed to certain environmental conditions, process controls must be exercised during all stages of component manufacturing and reactor construction to avoid sensitization of the material, and to minimize exposure of the stainless steel to contaminants that lead to stress corrosion cracking. The review includes information submitted by the applicant in these areas, as described in SRP Section 5.2.3, "Reactor Coolant Pressure Boundary Materials."

5. Other Materials

Materials other than austenitic stainless steels are reviewed and evaluated in terms of their fracture toughness, corrosion resistance, fabricability, and other mechanical properties.

6. Inspection, Test, Analysis, and Acceptance Criteria (ITAAC)

For design certification and combined license (COL) reviews, the applicant's proposed information on the ITAAC associated with the systems, structures, and components (SSCs) related to this SRP section is reviewed in accordance with SRP Section 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria - Design Certification." The staff recognizes that the review of ITAAC is performed after review of the rest of this portion of the application against acceptance criteria contained in this SRP section. Furthermore, the ITAAC are reviewed to assure that all SSCs in this area of review are identified and addressed as appropriate in accordance with SRP Section 14.3.

Review Interfaces

The listed SRP sections interface with this section as follows:

1. The review of the adequacy of programs for assuring the integrity of bolting and threaded fasteners is performed under SRP Section 3.13, "Threaded Fasteners."
2. The evaluation of corrosion and compatibility of reactor internals and core support structures materials with the expected environment during service is performed under SRP Section 5.2.3, "Reactor Coolant Pressure Boundary Materials."
3. The review of acceptability of the reactor coolant chemistry and associated chemistry controls (including additives such as inhibitors) as it relates to corrosion control and compatibility with materials to be exposed to reactor coolant is performed under SRP Sections 5.4.8 "Reactor Water Cleanup System (BWR)" and 9.3.4 "Chemical and Volume Control System (PWR)."
4. The review of the adequacy of design fatigue curves for reactor internals and core support structures materials with respect to cumulative reactor service-related environmental and usage factor effects and consideration of each combination of loadings is performed under SRP Sections 3.9.1, "Special Topics for Mechanical Components," and 3.9.3, "ASME Code Class 1, 2, and 3 Components, Component Supports, and Core Support Structures."
5. The review of the reactor internals and core support structures with respect to their mechanical design adequacy to withstand design and service loading combinations is performed under SRP Section 3.9.5, "Reactor Pressure Vessel Internals."
6. The review of the plant design, including the selection of materials to minimize activation products, to verify that occupational radiation exposures will be as low as is reasonably achievable (ALARA) is performed under SRP Section 12.1, "Assuring That Occupational Radiation Exposures Are As Low As Is Reasonably Achievable."

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

II. ACCEPTANCE CRITERIA

Requirements

The design, fabrication, and testing of the materials used in the reactor internals and core support structures are reviewed and evaluated to meet codes and standards commensurate with the safety functions to be performed such that the relevant requirements of 10 CFR 50.55a and GDC 1 are met.

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

1. 10 CFR 50.55a, "Codes and Standards," which requires that SSCs shall be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety function to be performed.
2. 10 CFR Part 50, Appendix A, GDC 1, "Quality Standards and Records," which requires that SSCs important to safety shall be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. Where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function. GDC 1 also requires that appropriate records of the design, fabrication, erection, and testing of SSCs important to safety shall be maintained by or under the control of the nuclear power unit licensee throughout the life of the unit.
3. 10 CFR 52.47(a)(1)(vi), as it relates to ITAAC (for design certification) sufficient to assure that the SSCs in this area of review will operate in accordance with the certification.
4. 10 CFR 52.97(b)(1), as it relates to ITAAC (for combined licenses) sufficient to assure that the SSCs in this area of review have been constructed and will be operated in conformity with the license and the Commission'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 each review described in Subsection 1 of 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. Materials

For core support structures and reactor internals, the permitted material specifications are those given in the ASME Code, Section III, Division 1, Sub-subarticle NG-2120. The properties of these materials are specified in Tables 2A, 2B and 4 of Section II of the Code.

Additional permitted materials and their applications are identified in ASME Code Cases approved for use as described in Regulatory Guide 1.84, "Design, Fabrication, and Material Code Case Acceptability, ASME, Section III."

2. Controls on Welding

Methods and controls for core support structures and reactor internals welds shall be in accordance with ASME Code, Section III, Division 1, Article NG-4000. The examination requirements and acceptance criteria for these welds are specified in Article NG-5000.

3. Nondestructive Examination

Nondestructive examinations shall be in accordance with the requirements of ASME Code, Section III, Division 1, Subarticle NG-2500. The nondestructive examination acceptance criteria shall be in accordance with the requirements of ASME Code, Section III, Division 1, Subarticle NG-5300.

4. Austenitic Stainless Steels

The acceptance criteria for this area of review are given in SRP Section 5.2.3, subsections II.2 and II.4.a, b, d, and e.

Regulatory Guide 1.44 provides acceptance criteria for preventing intergranular corrosion of stainless steel components. In conformance with this guide, furnace sensitized material should not be allowed. Methods described in this guide should be followed for cleaning and protecting austenitic stainless steel from contamination during handling, storage, testing, and fabrication, and for determining the degree of sensitization that occurs during welding.

5. Other Materials

All materials used for reactor internals and core support structures must be selected for compatibility with the reactor coolant, as specified in Subsubarticles NG-2160 and NG-3120 of Section III, Division 1 of the ASME Code. The tempering temperature of martensitic stainless steels and the aging temperature of precipitation-hardened stainless steels should be specified to provide assurance that these materials will not deteriorate in service. Acceptable heat treatment temperatures are 565°C - 595°C (1050°F - 1100°F) for aging of Type 17-4 PH and 565°C (1050°F) for tempering of Type 410 stainless steel.

Other materials shall have similar appropriate heat treat and fabrication controls in accordance with strength and compatibility requirements.

Technical Rationale

The technical rationale for application of these acceptance criteria to reviewing this SRP section is discussed in the following paragraph:

GDC 1 and 10 CFR 50.55a require that SSCs be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety function to be performed. 10 CFR 50.55a also incorporates by

reference the applicable editions and addenda of the ASME Boiler and Pressure Vessel Code. The reactor internals and core support structures include SSCs that perform safety functions and/or whose failure could affect the performance of safety functions by other SSCs. These safety functions include reactivity monitoring and control, core cooling, and fission product confinement (within both the fuel cladding and the primary reactor coolant system). Application of 10 CFR 50.55a and GDC 1 to the materials of construction provides assurance that established standard practices of proven or demonstrated effectiveness for selecting materials, fabrication, and testing/inspection of SSCs are used to achieve a high likelihood that these safety functions will be performed.

III. REVIEW PROCEDURES

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

For each area of review specified in Subsection I of this SRP section, the review procedure is identified below. These review procedures are based on the identified SRP acceptance criteria. For deviations from these specific acceptance criteria, the staff should review the applicant's evaluation of how the proposed alternatives to the SRP criteria provide an acceptable method of complying with the relevant NRC requirements identified in Subsection II.

1. Materials

The list of the materials for reactor internals and core support structures that are exposed to the reactor coolant is reviewed.

The materials identified for each component or part used in the reactor internals and core support structures are compared with the materials identified as being acceptable in Sections II and III of the ASME Code and/or acceptable ASME Code Cases identified in Regulatory Guide 1.84, as described in the acceptance criteria. The reviewer verifies that any exceptions to the ASME Code-specified materials are clearly identified. The reviewer evaluates the basis for the exceptions, taking into account precedents set in earlier cases, and determines the acceptability of such materials.

2. Controls on Welding

The reviewer verifies that welding methods and controls for the reactor internals and core support structures are in accordance with the procedures of ASME Code, Section III, Division 1, Article NG-4000. The reviewer verifies that welding controls submitted by the applicant are in conformance with the welding controls in SRP Section 5.2.3, which are also considered applicable to welding of reactor internals. The reviewer assures that any special welding processes or welding controls conform to the qualification requirements of ASME Code, Section IX, or that justification is made for any deviation.

3. Nondestructive Examination

The information submitted by the applicant is reviewed to determine methods used for nondestructive examination. The reviewer verifies that the nondestructive examination methods proposed by the applicant are in conformance with the examination methods specified by the ASME Code. Section III, Division 1, Subarticle NG-2500 of the ASME Code specifies that examination by either radiographic or ultrasonic examination plus surface examinations as required is acceptable.

4. Austenitic Stainless Steel

The materials and fabrication procedures used for reactor internals are reviewed. The areas of review and review procedures include those described in SRP Section 5.2.3. The reviewer verifies that environmental conditions are controlled and welding procedures are developed such that the probabilities of sensitization and microfissuring are minimized. SRP Section 4.5.1, Subsection III.2, identifies an acceptable alternate to the methods described in Regulatory Guide 1.44 for verifying the degree of sensitization that occurs during welding. In addition, the reviewer verifies that materials are selected to assure compatibility with the compositions of the reactor coolant, and that the fabrication and cleaning controls imposed on stainless steel components are adequate to prevent contamination with chloride and fluoride ions.

Where cast austenitic stainless steels are proposed for use, the reviewer verifies that, under the expected environmental conditions, the selected material will provide adequate fracture toughness over its design life (e.g., considering thermal aging due to exposure to reactor coolant operating temperatures).

5. Other Materials

The reviewer verifies that the heat treatment and welding controls provided in the material specifications and fabrication procedures are appropriate for the material. The reviewer verifies that the fabrication and cleaning controls will preclude contamination of nickel-base alloys by chloride ions, fluoride ions, or lead.

Operating experience has indicated that certain nickel-chromium-iron alloys (e.g. Alloy 600 and associated weld materials, Alloy 82 and 182) are susceptible to stress corrosion cracking, as documented in NUREG-1823 and NRC Generic Letter 97-01. Alloy 690, and associated weld materials Alloy 52 and 152, have improved corrosion resistance in comparison to Alloy 600 used in PWR reactor coolant pressure boundary (RCPB) applications. Where nickel-chromium-iron alloys are proposed for use in the PWR RCPB, use of Alloy 690 materials is preferred. If Alloy 600 material is proposed, the reviewer verifies that an acceptable technical basis is either identified (based upon demonstrated satisfactory use in similar applications) or presented by the applicant to support use of the material under the expected environmental conditions (e.g., exposure to the reactor coolant). In addition, the reviewer verifies that acceptable augmented inspection requirements have been proposed based on operating experience and service conditions. For all RCPB environments, particular review emphasis is placed upon the corrosion resistance and stress corrosion cracking resistance properties of the proposed nickel-chromium-iron alloy(s).

6. For reviews of design certification and COL applications under 10 CFR Part 52, the reviewer should follow the above procedures to verify that the design set forth in the safety analysis report, and if applicable, site interface requirements meet the acceptance criteria. For design certification applications, the reviewer should identify necessary COL action items. With respect to COL applications, the scope of the review is dependent on whether the COL applicant references a design certification, an ESP or other NRC-approved material, applications, and/or reports.

After this review, SRP Section 14.3 should be followed for the review of Tier I information for the design, including the postulated site parameters, interface criteria, and ITAAC.

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.

1. The staff concludes that the materials used for the reactor internals and core support structures are acceptable and meet the requirements of 10 CFR 50.55a and 10 CFR Part 50, Appendix A, General Design Criterion 1. This conclusion is based upon the following considerations:

The applicant has selected, and identified by specification, materials for the reactor internals and core support structures that satisfy the requirements of Subsubarticle NG-2120 of Section III, Division 1 and Tables 2A, 2B and 4 of Section II of the ASME Code. For materials not in accordance with ASME Code provisions, the applicant has selected materials of construction that are approved for use by NRC-accepted ASME Code Cases, as identified in Regulatory Guide 1.84, or that have otherwise been demonstrated acceptable for the application. As proven by extensive tests and satisfactory performance, the specified materials are compatible with the expected environment and corrosion is expected to be negligible.

The applicant has demonstrated that the design, fabrication, and testing of the materials used in the reactor internals and core support structures are of high quality standards and are adequate to assure structural integrity. The controls imposed upon austenitic stainless steel components satisfy the positions of Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel," and the related criteria provided in SRP Section 5.2.3, "Reactor Coolant Pressure Boundary Materials."

The controls imposed on the reactor coolant chemistry provide reasonable assurance that the reactor internals and core support structures will be adequately protected during operation from conditions that could lead to stress corrosion of the materials and loss of component structural integrity.

The material selection, fabrication practices, examination and testing procedures, and control practices provide reasonable assurance that the materials used for the reactor internals and core support structures will be in a metallurgical condition that will preclude inservice deterioration.

Conformance with relevant requirements of the ASME Code, or accepted Code Cases, and the recommendations of Regulatory Guides 1.31 and 1.44 and the related criteria in SRP Section 5.2.3, constitutes an acceptable basis for meeting the relevant requirements of 10 CFR 50.55a and 10 CFR Part 50, Appendix A, GDC 1.

For DC and COL reviews, the findings will also summarize (to the extent that the review is not discussed in other SER sections) the staff's evaluation of the ITAAC, including design acceptance criteria, as applicable, and interface requirements and combined license action items relevant to this SRP section.

V. IMPLEMENTATION

The following is intended to provide guidance to applicants and licensees regarding the staff's plan for implementing this section of the Standard Review Plan.

The staff will use this SRP section in performing safety evaluations of design certifications and license applications submitted by applicants pursuant to 10 CFR Part 50 or 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 docketed six months or more after the date of issuance of this SRP section, unless superceded by a later revision.

Implementation schedules for conformance to parts of the method discussed herein are contained in the referenced regulatory guides.

VI. REFERENCES

1. 10 CFR 50.55a, "Codes and Standards."
2. 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Plants," General Design Criterion 1, "Quality Standards and Records."
3. 10 CFR 52.47(a)(1)(vi),
4. 10 CFR 52.97(b)(1)
5. Regulatory Guide 1.44, "Control of the Use of Sensitized Stainless Steel."
6. Regulatory Guide 1.84, "Design, Fabrication, and Material Code Case Acceptability, ASME Section III."
7. ASME Boiler and Pressure Vessel Code, Section II, "Materials," Tables 2A, 2B and 4; Section III, "Rules for Construction of Nuclear Facility Components," Division 1; and Section IX, "Welding and Brazing Qualifications." American Society of Mechanical Engineers.
8. NUREG-1823, "U.S. Plant Experience with Alloy 600 Cracking and Boric Acid Corrosion of Light-Water Reactor Pressure Vessel Materials." U.S. Nuclear Regulatory Commission. Washington, DC. April 2005.

9. NRC Letter to All Licensees of Pressurized Water Reactors (PWRs), "Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Closure Head Penetrations" (Generic Letter 97-01). April 1, 1997.

PAPERWORK REDUCTION ACT STATEMENT

The information collections contained in the draft Standard Review Plan are covered by the requirements of 10 CFR Part 50 and 52, which 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.

SRP Section 4.5.2 Description of Changes

The following summarizes the changes in Revision 3, dated xxxxxxx 2006.

1. General changes included editorial and formatting changes. Note: minor editorial and formatting changes are not identified by side bars.
2. Standard language was added throughout the SRP section to extend the applicability to licensing and design certification reviews submitted under 10 CFR Part 52.
3. Revised references to ASME Code to reflect organization of the Code, as delineated in Division 1 of Section III of the Code.
4. Specific changes identified by section of the SRP:

REVIEW RESPONSIBILITIES - Replaced specific organization titles with organizational functions to allow future reorganization and branch consolidation without necessitating SRP changes. Change is consistent with updated SRP guidance and is reflected throughout the SRP.

I. AREAS OF REVIEW

First paragraph - citation from the ASME Code, Section III was added. Other changes to 1st and 2nd paragraphs of subsection I are editorial and reflect updated formatting.

1. Materials

Changes to these paragraphs are editorial. The phrase “major components” was eliminated. Last sentence of the 1st paragraph was eliminated due to redundancy. “Fracture toughness” was added to the 2nd paragraph as part of a more detailed description of the mechanical properties to be reviewed.

Re-organized list of properties subject to review to reflect that fracture toughness, stress corrosion resistance, and fabricability are considered mechanical properties.

2. Controls on Welding

Revised to include core support structures as being subject to welding controls.

3. Nondestructive Examination - Language eliminated to reflect the fact that products other than tubular products and fittings are subject to NDE review.

4. Austenitic Stainless Steel

Editorial changes in these paragraphs provide clarification concerning the application of both stabilized and unstabilized austenitic stainless steel product forms.

5. Other Materials

Re-organized list of properties subject to review to reflect that fracture toughness, stress corrosion resistance, and fabricability are considered mechanical properties.

6. Inspection, Test, Analysis, and Acceptance Criteria (ITAAC)

This standard subsection was added for the purpose of addressing design certification and combined license reviews performed pursuant to 10 CFR Part 52.

Review Interfaces heading was added to this subsection. Paragraphs falling under this heading capture related reviews under other SRP sections.

II. ACCEPTANCE CRITERIA

Added standard lettered paragraphs providing reference to the relevant requirements of the Commission regulations.

1. Materials

Changed subsection heading to be consistent with “Materials” heading in subsection I.

Changes to the 1st paragraph include the addition of a numerical reference for the ASME Code, as well as changes reflecting the updating of the relevant code paragraphs and Code format for specifying material properties.

2nd paragraph was revised to account for previous changes in the regulatory guidance concerning ASME, Section III Code Case acceptability.

2. Controls on Welding

Minor Editorial Changes

3. Nondestructive Examination

Minor Editorial Changes

4. Austenitic Stainless Steels

Specific references to subsections of SRP Section 5.2.3 were added. SRP Section and regulatory guide titles were deleted. Regulatory guide titles are now included in “References” subsection. Reworded specific criteria to more accurately reflect recommendations provided in RG 1.44 for preventing intergranular corrosion of stainless steel components.

5. Other Materials

Minor Editorial Changes. Reworded to more clearly reflect that materials must be compatible with reactor coolant. Reworded sentence regarding heat treatment temperatures for clarity.

Technical Rationale heading was introduced as part of the SRP updated format. Paragraphs under this heading address technical rationale in terms of the regulatory requirements.

III. REVIEW PROCEDURES

Reworded review procedures to specifically state the actions performed by the reviewer. Changed sentence structure from passive to active.

1. Material Specifications

Added core support structures to the materials being reviewed for compatibility with reactor coolant. 2nd paragraph was revised to include regulatory guidance concerning acceptable ASME, Section III Code Cases as part of the basis for review of component materials.

2. Controls on Welding

Editorial changes clarify the scope of review, as applicable to welding controls.

3. Nondestructive Examination

NDE review area revised to include possible Code-required surface examinations. Added a sentence specifically identifying the reviewer responsibilities for confirming acceptability of NDE methods.

4. Austenitic Stainless Steel

1st paragraph was revised to include a reference to a previously accepted alternative method to the welding sensitization guidance of RG 1.44. Reworded sentence to clarify reviewer's responsibilities for verifying material compatibility with reactor coolant.

2nd paragraph was added to address the proposed use of cast austenitic stainless steels.

5. Other Materials

2nd paragraph was added to address the proposed use of Ni-Cr-Fe alloys for reactor internals.

IV. EVALUATION FINDINGS

2nd paragraph: revised reference to Article NG-2120 to conform with revised reference in subsection II.1, Acceptance Criteria, Materials.

3rd paragraph: References to regulatory requirements were deleted due to redundancy. A reference to criteria of SRP Section 5.2.3 was added to address evaluation findings for the review of austenitic stainless steels.

4th paragraph revisions account for previous changes to the regulatory guidance and clarify the scope of its application. Revised conclusion sentence to identify all relevant references for constituting a basis for acceptance.

V. IMPLEMENTATION

Sentence added to the beginning of the 2nd paragraph to address SRP implementation for staff evaluations under 10 CFR Part 50 or 10 CFR Part 52.

3rd paragraph added based on SRP Section applicability to reviews of future applications.

VI. REFERENCES

References were updated to reflect applicable regulations and guidance, and renumbered per updated SRP format.

PAPERWORK REDUCTION ACT STATEMENT and Public Protection Notification

Standard boilerplate text added as part of the SRP updated format.