U.S. NUCLEAR REGULATORY COMMISSION

STANDARD REVIEW PLAN

OFFICE OF NUCLEAR REACTOR REGULATION

9.4.4 TURBINE AREA VENTILATION SYSTEM

REVIEW RESPONSIBILITIES

Primary - ~~Auxiliary~~ Plant Systems Branch (~~ASB~~ SPLB)[1]

Secondary - ~~None~~ Emergency Preparedness and Radiation Protection Branch (PERB)[2]

I. AREAS OF REVIEW

The function of the turbine area ventilation system (TAVS) is to maintain ventilation in the turbine area, to permit personnel access, and to control the concentration of airborne radioactive material in the area during normal operation, during anticipated operational occurrences, and after any accident that results in a release of radioactive material.[3]

The ~~ASB~~ SPLB[4] reviews the ~~turbine area ventilation system~~[5] (TAVS) from air intake to the point of discharge to ~~assure~~ ensure[6] conformance with the requirements of General Design Criteria 2, 5, and 60. The review includes components such as air intakes, ducts, ~~cooling~~ air-conditioning units, blowers, isolation dampers, filters, and ~~roof~~[7] exhaust fans. The review of the TAVS includes systems contained in the turbine building and their relationship, if any, to safety-related equipment areas.

1. The ~~ASB~~ SPLB[8] reviews the functional performance requirements and the methods and equipment provided for air treatment equipment for the TAVS to determine whether the ventilation system or portions of the system have been designed or need to be designed as a safety-related[9] system. In making this determination, systems provided for heating, ventilating, and air conditioning of the turbine area, designed to normal industrial standards, and those systems that provide for control and filtration of small quantities of radioactive gas leakage in the turbine area during normal plant operation, are not considered safety-related for the purpose of this Standard Review Plan (SRP)[10] section.

   Based on this determination, any safety-related portions of the system are reviewed with respect to functional performance requirements during adverse environmental

occurrences, ~~during~~ normal operation, anticipated operational occurrences,[11] and subsequent to postulated accidents, including the loss of offsite power. The ~~ASB~~ SPLB[12] reviews safety-related portions of the system to ~~assure~~ ensure that:

a. A single active failure cannot result in loss of the system functional performance capability.

b. Failures of nonseismic Category I equipment or components will not ~~result in unacceptable releases of radioactive contaminants~~ affect the TAVS.[13]

2. The ~~ASB~~ SPLB[14] also reviews safety-related portions of the TAVS with respect to the following:

a. The capability ~~of the system~~[15] to direct ventilation air from areas of low radioactivity to areas of higher radioactivity levels.

b. The capability to detect the need for isolation and to isolate ~~safety-related~~ portions of the system in the event of failures or malfunctions, and the capability of the ~~isolated~~[16] system to function under such conditions.

c. The capability to actuate components not normally operating that are required to operate during accident conditions and to provide necessary isolation.[17]

3. The ~~ASB~~SPLB[18] also performs the following reviews as part of its primary review responsibility[19] under the SRP sections indicated:

a. Review of flood protection is performed under SRP Section 3.4.1.

b. Review of the protection against internally generated missiles is performed under SRP Section 3.5.1.1.

c. Review of the structures, systems, and components to be protected against externally generated missiles is performed under SRP Section 3.5.2.

d. Review of high- and moderate-energy pipe breaks is performed under SRP Section 3.6.1.

e. Review of the environmental qualification of mechanical and electrical equipment is performed under SRP Section 3.11.[20]

f. Review of the effectiveness of the TAVS filters to remove airborne contaminants prior to discharge to the environment is performed under SRP Section 6.5.1.[21]

g. The review of fire protection is performed under SRP Section 9.5.1.[22]

h. ~~The Effluent Treatment Systems Branch (ETSB) evaluates~~ Review of the system functional performance to ~~assure~~ ensure that the system meets acceptable limits for radioactive releases during normal operations ~~and evaluates the capability of the system to detect and control leakage of radioactive contamination as part of its primary review responsibility for~~ is performed under SRP Section 11.3 ~~and 11.5, respectively~~.[23]

Review Interfaces[24]

1. The ~~ASB~~SPLB[25] will coordinate evaluations performed by other branches that interface with SPLB to complete[26] the overall evaluation of the system, as follows:

   a. The Instrumentation and Controls ~~Systems~~ Branch (~~ICSB~~HICB)[27] and ~~Power Systems Branch (PSB)~~ Electrical Engineering Branch (EELB)[28] determine the adequacy of the design, installation, inspection, and testing of all essential[29] electrical components (sensing, control and power) required for proper operation as part of their primary review responsibility for SRP Sections 7.7 and 8.3.1, respectively.

   b. The ~~Structural Engineering Branch (SEB)~~ Civil Engineering and Geosciences Branch (ECGB)[30] determines the acceptability of the design analyses, procedures, and criteria used to establish the ability of seismic Category I structures housing the system and supporting systems to withstand the effects of natural phenomena such as the safe shutdown earthquake (SSE), the probable maximum flood (PMF), and tornado missiles as part of its primary review responsibility for SRP Sections 3.3.1, 3.3.2, 3.5.3, 3.7.1 through 3.7.4, 3.8.4, and 3.8.5.

   c. The Mechanical Engineering Branch ~~MEB~~(EMEB)[31] determines that the components, piping, and structures are designed in accordance with applicable codes and standards as part of its primary review responsibility for SRP Sections 3.9.1 through 3.9.3.

   d. The ~~MEB also~~ EMEB[32] determines the acceptability of the seismic and quality group classifications for system components as part of its primary review responsibility for SRP Sections 3.2.1 and 3.2.2.

   e. The ~~MEB also~~ EMEB[33] also reviews the adequacy of the inservice testing program of pumps and valves as part of its primary review responsibility for SRP Section 3.9.6.

   f. The EMEB and the HICB review the seismic qualification of Category I instrumentation and electrical equipment as part of their primary and secondary review responsibilities, respectively, for SRP Section 3.10.[34]

   g. The ~~Materials~~Civil Engineering and Geosciences Branch (~~MTEB~~ECGB)[35] verifies that inservice inspection requirements are met for system components as part of its primary review responsibility for SRP Section 6.6.

~~The review for fire protection, technical specifications, and quality assurance are coordinated and performed by the Chemical Engineering Branch, Licensing Guidance Branch, and Quality Assurance Branch as part of their primary review responsibility for SRP Sections 9.5.1, 16.0, and 17.0 respectively.~~[36]

   h. The PERB and SPLB evaluate the capability of the system to detect and control leakage of radioactive contamination as part of their primary and secondary review responsibilities, respectively, for SRP Section 11.5.[37]

   i. The ~~Radiological Assessment Branch (RAB)~~ PERB[38] evaluates the capability of the system to meet radiation protection criteria as part of its primary review responsibility for SRP Section 12.3-4.

j. The Technical Specifications Branch (TSB) coordinates and performs reviews of the proposed technical specifications as part of its primary review responsibility for SRP Section 16.0.[39]

k. The Quality Assurance and Maintenance Branch (HQMB) coordinates and performs reviews of the quality assurance program as part of its primary review responsibility for SRP Chapter 17.[40]

For those areas of review identified above as being ~~part of~~ the primary ~~review~~ responsibility of other branches, the acceptance criteria ~~necessary for the review~~ and ~~their~~ methods of application are contained in the referenced SRP sections ~~of the corresponding primary branch~~.[41]

II. ACCEPTANCE CRITERIA

Acceptability of the TAVS design, as described in the applicant's safety analysis report (SAR), is based on specific general design criteria and regulatory guides.

The design of safety-related portions of the TAVS is acceptable if the integrated design of the system is in accordance with the following criteria:

1. General Design Criterion 2 (GDC 2),[42] "Design Bases for Protection Against Natural Phenomena," as related to the system being capable of withstanding the effects of earthquakes. Acceptance is based on meeting the guidance of Regulatory Guide 1.29, Position C.1 for safety-related portions and Position C.2 for nonsafety-related portions.

2. General Design Criterion 5 (GDC 5),[43] "Sharing of Structures, Systems, and Components," as related to shared systems and components important to safety.

3. General Design Criterion 60 (GDC 60),[44] "Control of Release of Radioactive Materials to the Environment," as related to the ~~capability of the~~ system's capability to suitably control release of gaseous radioactive effluents to the environment. Acceptance is based on meeting the guidance of Regulatory Guides 1.52 and 1.140, as related to design, testing, and maintenance criteria for normal ventilation, exhaust system air filtration and adsorption units of light-water-cooled nuclear power plants, Position C.2, and Positions C.1 and C.2, respectively.[45]

Technical Rationale[46]

The technical rationale for application of these acceptance criteria to reviewing the TAVS is discussed in the following paragraphs:[47]

1. Compliance with GDC 2, as related to the system being capable of withstanding the effects of earthquakes, requires that structures, systems, and components important to safety be designed to withstand the effects of a design basis earthquake without loss of capability to perform their safety functions.

   The function of the TAVS is to maintain ventilation in the turbine area, to permit personnel access, and to control airborne radioactivity in the area during normal operation, during anticipated operational occurrences, and during and after postulated accidents, including loss of offsite power. This requirement is imposed to ensure that, during and after a design basis earthquake, essential portions of the TAVS will remain functional and that the failure of nonessential portions of the system or of other systems not designed to seismic Category I standards will not result in offsite doses in excess of 5 mSv (0.5 rem)[48] to the whole body or its equivalent to any part of the body.

Meeting the requirement of GDC 2 provides added assurance that the TAVS will operate as designed, thus providing protection against release of radioactivity exceeding regulatory limits.[49]

2. Compliance with GDC 5 requires that structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

   With regard to the TAVS, GDC 5 requires that the component parts of the TAVS be essentially independent in order to ensure that an accident in one unit of a multiple-unit facility will not propagate to other units. Therefore the TAVS for each unit should be designed to accommodate the load resulting from accident conditions. At the same time, the operating environment of equipment associated with unaffected units must be maintained within specified limits.

   Meeting the requirements of GDC 5 provides added assurance that failure or accident in one unit will not affect additional units of a multiple-unit site.[50]

3. Compliance with GDC 60 requires that provisions be included in the nuclear power unit design to ensure suitable controls on the release of radioactive materials in gaseous effluents during normal reactor operation, including anticipated operational occurrences.

   The requirements of GDC 60 are applicable to the design of the TAVS because its function is to control the quantities of radioactive materials in gaseous effluents released to the environment from normal ventilation systems. Regulatory Guides 1.140 and 1.52 offer design, testing, and maintenance criteria acceptable to the staff for air filtration and adsorption units of normal ventilation exhaust systems and for engineered safety feature atmospheric cleanup systems in light-water-cooled nuclear power plants.

   Meeting the requirements of GDC 60 provides added assurance that release of radioactive materials entrained in gaseous effluents will not exceed the limits specified in 10 CFR Part 20 for normal operation and anticipated operational occurrences.[51]

III. REVIEW PROCEDURES

The procedures below are used during the construction permit (CP) or standard design certification[52] review to determine that the design criteria and bases and the preliminary design, as set forth in the preliminary ~~safety analysis report~~SAR,[53] meet the acceptance criteria given in subsection II of this SRP section.[54]

For the review of operating license (OL) or combined license (COL)[55] applications, the procedures are used to verify that the initial design criteria and bases have been appropriately implemented in the final design as set forth in the final ~~safety analysis report~~SAR.[56]

The procedures for OL or COL[57] reviews include a determination that the proposed technical specifications are in agreement with the requirements for testing, minimum performance, and surveillance developed by the staff.

The primary reviewer will coordinate this review with the other branches for their particular areas of responsibility as stated in subsection I. The primary reviewer obtains and uses such inputs as required to ~~assure~~ ensure that this review procedure is complete.

As a result of various TAVS designs proposed by applicants, there will be variations in system requirements. For the purpose of this SRP section, a typical system is assumed which has fully redundant subsystems, each having an identical essential (safety-related) portion. For cases where there are variations from this typical arrangement, the reviewer would adjust the review procedures given below. However, the system design would be required to meet the acceptance criteria given in subsection II. The reviewer will select and emphasize material from this SRP section as may be appropriate for a particular case.

1. The SAR is reviewed to verify that the system description and piping and instrumentation diagrams (P&IDs) show the TAVS equipment used for normal and emergency operations, and the ambient temperature limits for the areas serviced. The system performance requirements are reviewed to determine that it describes allowable component operational degradation (e.g., loss of function, damper leakage) and describes the procedures that will be followed to detect and correct these conditions. The reviewer, using results from failure modes and effects analyses as appropriate, determines that the ~~system is capable of sustaining the failure of any active component that is required for the prevention of unacceptable releases of radioactive contaminants to the environment.~~ safety-related portion of the system is capable of functioning in spite of the loss of any active component.[58]

   The system review should also demonstrate conformance with applicable industry standards: ANSI/ANS-59.2-1985, "Safety Criteria for Nuclear Power Plant HVAC Systems Located Outside Primary Containment," and ANSI/ASME AG-1-1985, "Code on Nuclear Air and Gas Treatment."[59]

2. The system P&IDs, layout drawings, and component descriptions and characteristics are then reviewed to determine that:

   a. Essential portions of the TAVS are correctly identified and are isolable from nonessential portions of the system. The P&IDs are reviewed to verify that they clearly indicate the physical divisions between each portion and indicate ~~changes in~~ design classification changes. System drawings are also reviewed to verify that they show the means ~~provided~~ for accomplishing isolation, and the system description is reviewed[60] to identify minimum performance requirements for the isolation dampers.

      For the typical system, the drawings and description are reviewed to verify that two automatically operated isolation dampers in series separate nonessential portions and components from the essential portions.

   b. Essential portions of the TAVS, including the isolation dampers separating essential from nonessential portions, are classified seismic Category I. Component and system descriptions in the SAR that identify mechanical and performance characteristics are reviewed to verify that the above seismic classifications have been included, and that the P&IDs indicate any points of change in design classification.

   c. Design provisions have been made that permit appropriate inservice inspection and functional testing of system components important to safety. Conformance with the industry standard ASTM D3803-89, "Standard Test Methods for Radiological Testing of Nuclear-Grade Gas-Phase Adsorbers," should be demonstrated.[61] It is acceptable if the SAR information delineates a testing and inspection program and if the system drawings show the necessary test

recirculation loops around fans or isolation dampers that would be required by this program.[62]

3. The reviewer verifies that ~~the safety-related portion of~~[63] the system has been designed so that system function will be maintained as required, in the event of an earthquake or loss of offsite power. The reviewer evaluates the system, using engineering judgment and the results of failure modes and effects analyses to determine that:

   a. The failure of nonessential portions of the system or of other systems not designed to seismic Category I standards and located close to essential portions of the system, or of nonseismic Category I structures that house, support, or are close to essential portions of the TAVS, will not preclude operation of the essential portions of the TAVS. Reference to SAR sections describing site features and the general arrangement and layout drawings will be necessary, as well as the SAR tabulation of seismic design classifications for structures and systems. ~~A commitment~~ Statements in the SAR ~~confirming~~ verifying that the above conditions are met ~~is~~ are[64] acceptable. ~~(CP)~~[65]

   b. Components and subsystems necessary for preventing ~~unacceptable~~[66] releases of radioactive contaminants can function as required in the event of loss of offsite power. The system design will be acceptable if the TAVS meets minimum system requirements as stated in the SAR assuming a failure of a single active component, within the system itself, or in the auxiliary electric power source which supplies the system. The SAR is reviewed to see that, for each TAVS component or subsystem affected by the loss of offsite power, the resulting system flow capacity will not cause the loss of preferred[67] direction of air flow from areas of low potential radioactivity to areas of higher potential radioactivity. Statements in the SAR and the results of failure modes and effects analyses are considered in verifying that the system meets these requirements. This will be an acceptable verification of system functional reliability.

4. The descriptive information, P&IDs, TAVS drawings, and failure modes and effects analyses in the SAR are reviewed to ~~assure~~ ensure that essential portions of the system can function following design basis accidents assuming a concurrent single active failure. The reviewer evaluates the analyses presented in the SAR to ~~assure~~ ensure function of required components, traces the availability of these components on system drawings, and checks that the SAR contains verification that minimum system isolation or filtration requirements are met for each accident situation for the required time spans. For each case the design will be acceptable if minimum system requirements are met.

For standard design certification reviews under 10 CFR Part 52, the procedures above should be followed, as modified by the procedures in SRP Section 14.3 (proposed), to verify that the design set forth in the standard safety analysis report, including inspections, tests, analysis, and acceptance criteria (ITAAC), site interface requirements and combined license action items, meet the acceptance criteria given in subsection II. SRP Section 14.3 (proposed) contains procedures for the review of certified design material (CDM) for the standard design, including the site parameters, interface criteria, and ITAAC.[68]

IV. EVALUATION FINDINGS

The reviewer determines that sufficient information has been provided and the review supports conclusions of the following type, to be included in the staff's safety evaluation report (SER):[69]

The turbine area ventilation system (TAVS) includes all components and ducting from air intake to the point of discharge. All portions of the system whose failure may result in release of radioactivity which causes an offsite dose of more than 5 mSv (0.5 rem)[70] to the whole body or its equivalent to any part of the body shall be classified seismic Category I and safety related. Based on the review of the applicant's proposed design criteria, the design bases and safety classification for the turbine area ventilation system and the requirements (if any) for system performance to preclude any adverse effect on safety-related functions during all conditions of plant operation, the staff concludes that the design of the turbine area ventilation system and ~~auxiliary~~[71] supporting systems is in conformance with the Commission's regulations as set forth in General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena," General Design Criterion 5, "Sharing of Structures, Systems, and Components," and General Design Criterion 60, "Control of Releases of Radioactive Materials to the Environment."

This conclusion is based on the following:

1. The applicant has met the requirements of ~~GDC~~ General Design Criterion[72] 2, "Design Bases for Protection Against Natural Phenomena," with respect to the system being capable of withstanding the effects of earthquakes by meeting the guidelines of Regulatory Guide 1.29, "Seismic Design Classification," Position C.1 for safety-related portions of the system and Position C.2 for nonsafety-related portions of the system.

2. The applicant has met the requirements of ~~GDC~~ General Design Criterion[73] 5, "Sharing of Structures, Systems, and Components Important to Safety to Perform Required Safety Function," with respect to capability of shared systems and components important to safety to perform required safety functions.

3. The applicant has met the requirements of ~~GDC~~ General Design Criterion[74] 60, "Control of Releases of Radioactive Materials to the Environment," with respect to the capability of the system to suitably control release of gaseous radioactive effluents to the environment by meeting the guidelines of Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmospheric Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," Position C.2, and[75] Regulatory Guide 1.140, "Design, Testing, and Maintenance Criteria for Normal Ventilation Exhaust System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," Positions C.1 and C.2.

The staff concludes that the design of the TAVS conforms to all applicable ~~GDCs~~ General Design Criteria[76] and positions of the regulatory guides cited and is, therefore, acceptable.

For design certification reviews, the findings will also summarize, to the extent that the review is not discussed in other safety evaluation report sections, the staff's evaluation of inspections, tests, analyses, and acceptance criteria (ITAAC), including design acceptance criteria (DAC), site interface requirements, and combined license action items that are relevant to this SRP section.[77]

V. IMPLEMENTATION

The following is intended to provide guidance to applicants and licensees regarding the NRC staff's plans for using this SRP section.

This SRP section will be used by the staff when performing safety evaluations of license applications submitted by applicants pursuant to 10 CFR 50 or 10 CFR 52.[8] Except in those cases in which the applicant proposes an acceptable alternative method for complying with specified portions of the Commission's regulations, the method described herein will be used by the staff in its evaluation of 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.[79]

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

VI. REFERENCES

1. 10 CFR Part 50, Appendix A, General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena."

2. 10 CFR Part 50, Appendix A, General Design Criterion 5, "Sharing of Structures, Systems, and Components."

3. 10 CFR Part 50, Appendix A, General Design Criterion 60, "Control of Releases of Radioactive Materials to the Environment."

4. Regulatory Guide 1.29, "Seismic Design Classification."

5. Regulatory Guide 1.140, "Design, Testing, and Maintenance Criteria for Normal Ventilation Exhaust System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants."

6. Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmospheric Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants."[80]

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SRP Draft Section 9.4.4
Attachment A - Proposed Changes in Order of Occurrence

Item numbers in the following table correspond to superscript numbers in the redline/strikeout copy of the draft SRP section.

Item	Source	Description
1.	Current PRB name and abbreviation	Changed PRB to Plant Systems Branch (SPLB).
2.	Current SRB name and abbreviation	Added SRB, Emergency Preparedness and Radiation Protection Branch (PERB).
3.	Editorial	Added a summary of the function of the ARAVS to conform to SRP Sections 9.4.1 and 9.4.2.
4.	Current PRB abbreviation	Changed PRB to SPLB.
5.	Editorial	Deleted system name since abbreviation has been identified.
6.	Editorial	Changed assure to ensure. (Global change for this section.)
7.	Editorial	Revised to conform to SRP Section 9.4.2.
8.	Current PRB abbreviation	Changed PRB to SPLB.
9.	Editorial	Modified to conform to SRP Section 9.4.3.
10.	Editorial	Defined "SRP" as "Standard Review Plan."
11.	Editorial	Revised to conform to SRP Section 9.4.1.
12.	Current PRB abbreviation	Changed PRB to SPLB.
13.	Editorial	Changed to conform to SRP Sections 9.4.1 and 9.4.2.
14.	Current PRB abbreviation	Changed PRB to SPLB.
15.	Editorial	Changed to conform to SRP Sections 9.4.2 and 9.4.3.
16.	Editorial	Changed to conform to SRP Section 9.4.2.
17.	Editorial	Added to conform to SRP Section 9.4.2.
18.	Current PRB abbreviation	Changed PRB to SPLB.

Item	Source	Description
19.	Editorial	Added clarifying phrase.
20.	Current PRB review responsibility	Changed to reflect SPLB review responsibility for SRP Section 3.11.
21.	Current PRB responsibility	Changed to conform to SRP Section 9.4.2 and to reflect SPLB review responsibility for SRP Section 6.5.1.
22.	Current PRB responsibility	Changed to reflect SPLB review responsibility for SRP Section 9.5.1.
23.	Current PRB and SRB review responsibility	Changed to reflect SPLB review responsibility for SRP Section 11.3.
24.	SRP-UDP format item	Added "Review Interfaces" to AREAS OF REVIEW and put in numbered paragraph form to describe how other SRP Sections interface with SRP Section 9.4.4 and how other branches support the SPLB review.
25.	Current PRB abbreviation	Changed PRB to SPLB.
26.	Editorial	Added to conform to SRP Section 9.4.2.
27.	Current review branch responsibility	Changed to reflect HICB review responsibility for SRP Section 7.7.
28.	Current review branch responsibility	Changed to reflect EELB review responsibility for SRP Section 8.3.1.
29.	Editorial	Added to conform to SRP Sections 9.4.1 and 9.4.2.
30.	Current review branch responsibility	Changed to reflect ECGB review responsibility for SRP Sections 3.3.1, 3.3.2, 3.5.3, 3.7.1 through 3.7.4, 3.8.4, and 3.8.5.
31.	Current review branch responsibility	Changed to reflect EMEB review responsibility for SRP Sections 3.9.1 through 3.9.3.
32.	Current review branch responsibility	Changed to reflect EMEB review responsibility for SRP Sections 3.2.1 and 3.2.2.
33.	Current review branch responsibility	Changed to reflect EMEB review responsibility for SRP Section 3.9.6.

Item	Source	Description
34.	Current review branch responsibility	Changed to reflect EMEB review responsibility for SRP Section 3.10.
35.	Current review branch responsibility	Changed to reflect ECGB review responsibility for SRP Section 6.6.
36.	Current review branch names and responsibilities	Deleted to move review responsibility of SPLB for SRP Section 9.5.1, TSB for SRP Section 16.0, and HQMB for SRP Chapter 17 elsewhere.
37.	Current SRB review responsibility	Added to reflect PERB review responsibility for SRP Section 11.5.
38.	Current SRB review responsibility	Changed to reflect current PERB review responsibility for SRP Section 12.3.
39.	Current review branch responsibility	Added to reflect TSB review responsibility for SRP Section 16.0.
40.	Current review branch responsibility	Added to reflect HQMB review responsibility for SRP Chapter 17.
41.	Editorial	Simplified for clarity and readability.
42.	Editorial	Added abbreviation "GDC 2."
43.	Editorial	Added abbreviation "GDC 5."
44.	Editorial	Added abbreviation "GDC 60."
45.	Editorial	Revised to conform to SRP Section 9.4.2.
46.	SRP-UDP format item	Added "Technical Rationale" to ACCEPTANCE CRITERIA to describe the bases for referencing the General Design Criteria.
47.	SRP-UDP format item	Added lead-in sentence for the "Technical Rationale."
48.	Conversion to SI units	Added metric units for 0.5 rem.
49.	SRP-UDP format item	Added technical rationale for GDC 2.
50.	SRP-UDP format item	Added technical rationale for GDC 5.
51.	SRP-UDP format item	Added technical rationale for GDC 60.
52.	SRP-UDP format item	Added reference to design certification review per 10 CFR Part 52.

Item	Source	Description
53.	Editorial	Replaced "safety analysis report" with "SRP," which was previously defined.
54.	Editorial	Added to conform to SRP Sections 9.4.1 and 9.4.2.
55.	SRP-UDP format item	Added reference to combined license application per 10 CFR Part 52.
56.	Editorial	Replaced "safety analysis report" with "SRP," which was previously defined.
57.	SRP-UDP format item	Added reference to COL review per 10 CFR Part 52.
58.	Editorial	Revised to conform with SRP Sections 9.4.1 and 9.4.3.
59.	Integrated Impact No. 1411	Added reference to industry standards ANSI/ANS-59.2-1985 and ANSI/ASME AG-1-1985 to REVIEW PROCEDURES.
60.	Editorial	Revised to conform with SRP Section 9.4.1.
61.	Integrated Impact No. 1411	Added reference to industry standard ASTM D3803-89 to REVIEW PROCEDURES.
62.	Editorial	Added paragraph to conform to SRP Sections 9.4.1 and 9.4.2.
63.	Editorial	Revised to conform to SRP Sections 9.4.1 and 9.4.2.
64.	Editorial	Changed to conform to SRP Section 9.4.1.
65.	Editorial	Deleted reference to CP since paragraph is relevant to all licensing actions.
66.	Editorial	Revised to conform to SRP Sections 9.4.2 and 9.4.3.
67.	Editorial	Revised to conform to SRP Section 9.4.3.
68.	SRP-UDP format item	Added reference to design certification reviews.

Item	Source	Description
69.	Editorial	Provided "SER" as initialism for "safety evaluation report."
70.	Conversion to SI units	Added metric units for 0.5 rem.
71.	Editorial	Revised to conform to SRP Section 9.4.2.
72.	Editorial	Spelled out General Design Criterion.
73.	Editorial	Spelled out General Design Criterion.
74.	Editorial	Spelled out General Design Criterion.
75.	Editorial	Added reference to RG 1.52 to conform to SRP Sections 9.4.1, and 9.4.2.
76.	Editorial	Changed "GDCs" to "General Design Criteria" to provide correct form for plural usage.
77.	SRP-UDP format item	Added reference to design certification reviews.
78.	SRP-UDP Guidance, Implementation of 10 CFR 52	Added standard sentence to address application of the SRP section to reviews of applications filed under 10 CFR Part 52, as well as Part 50.
79.	SRP-UDP Guidance	Added standard paragraph to indicate applicability of this section to reviews of future applications.
80.	SRP-UDP format item	Added RG 1.52 to REFERENCES.

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Integrated Impact No.	Issue	SRP Subsections Affected
1411	Revise REVIEW PROCEDURES to include conformance with ANSI/ANS 59.2-1985, ANSI/ASME AG-1-1985, and ASTM D3803-89.	Subsection III, REVIEW PROCEDURES, paragraph 1 Subsection III, REVIEW PROCEDURES, paragraph 2.c