



## U.S. NUCLEAR REGULATORY COMMISSION

# STANDARD REVIEW PLAN

### 3.2.1 SEISMIC CLASSIFICATION

#### REVIEW RESPONSIBILITIES

**Primary** - Organization responsible for mechanical engineering reviews

**Secondary** - Organizations responsible for the review of component performance and testing.

#### I. AREAS OF REVIEW

General Design Criterion (GDC) 2 of 10 CFR Part 50, Appendix A, in part, requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of earthquakes without loss of capability to perform their safety functions. The earthquake against which these plant features are designed is defined as the safe shutdown earthquake (SSE) in 10 CFR Part 100, Appendix A, and 10 CFR Part 50, Appendix S. The SSE is based upon an evaluation of the maximum earthquake potential and is that earthquake which produces the maximum vibratory ground motion for which SSCs important to safety are designed to remain functional. Appendix S also requires consideration of surface deformation. Those plant features that are designed to remain functional if an SSE occurs are designated Seismic Category I in Regulatory Guide (RG) 1.29.

Requirements for SSCs whose function is necessary for continued operation during and following an operating basis earthquake (OBE) are discussed in 10 CFR Part 50, Appendix S.

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](mailto:NRR_SRP@nrc.gov).

Requests for single copies of SRP sections (which may be reproduced) should be made to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Reproduction and Distribution Services Section, or by fax to (301) 415-2289; or by email to [DISTRIBUTION@nrc.gov](mailto:DISTRIBUTION@nrc.gov). Electronic copies of this section are available through the NRC's public Web site at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/>, or in the NRC's Agencywide Documents Access and Management System (ADAMS), at <http://www.nrc.gov/reading-rm/adams.html>, under Accession # ML063190002.

---

The specific areas of review are as follows:

1. This SRP section reviews the seismic classification of those SSCs (including their foundations and supports) that are important to safety and are designed to withstand, without loss of function, the effects of a SSE and specified as Seismic Category I by the applicant's safety analysis report (SAR). The review covers identification of SSCs that are not required to remain functional following a seismic event, but whose failure could reduce the functioning of any Category I SSCs to an unacceptable safety level, or could result in incapacitating injury to control room occupants, and therefore must be analyzed and designed to maintain their integrity under seismic loading from the SSE. In addition, the staff reviews the identification of radioactive waste management SSCs that require seismic design considerations as specified in RG 1.143.
2. This review, which is coordinated with each branch that has primary review responsibility for these plant features, is performed for both construction permit (CP) and operating license (OL) applications. The staff review of Seismic Category I items includes the following plant features: structures, dams, ponds, cooling towers, reactor internals, fluid systems important to safety that are identified in RG 1.29, safety-related instrument sensing lines that are identified in RG 1.151, ventilation systems, standby diesel generator auxiliary systems, fuel handling systems, and cranes.
3. The applicant's proposed seismic classification may in part be presented in the form of a table<sup>1</sup> that identifies those SSCs that are designated Seismic Category I. The table should identify all activities affecting the safety-related functions of these seismic Category I plant features that should also meet GDC 1 and the pertinent quality assurance (QA) requirements of 10 CFR Part 50, Appendix B. Details of the seismic classification of these plant features may be shown on plot plans, general arrangement drawings, and piping and instrumentation diagrams. If the applicant has set OBE Ground Motion to the value one-third of the SSE Ground Motion, then the applicant should also provide a list of SSCs necessary for continued safe operation that must remain functional without undue risk to the health and safety of the public and within applicable stress, strain, and deformation, during and following an OBE..
4. Where portions of structures and fluid systems are Seismic Category I, they also must be clearly identified. For fluid systems important to safety, the classification tables in the SAR should identify system components such as pressure vessels, heat exchangers, storage tanks, pumps, piping, and valves, have suitable footnotes defining interfaces, and be in sufficient detail so that there is a clear understanding of the extent of those portions of the system that are classified as Seismic Category I.
5. 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

---

<sup>1</sup>See SRP Section 3.2.2 - "System Quality Group Classification," for guidance.

ITAAC to ensure that all SSCs in this area of review are identified and addressed as appropriate in accordance with SRP Section 14.3.

6. 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.

### Review Interfaces

Other SRP sections interface with this section as follows:

1. The acceptability of the quality group classification of system components is determined in accordance with SRP Section 3.2.2. This information may be combined with the information in this SRP section so as to result in cross-referencing rather than repetition of the information.
2. Verification is performed on the systems and components important to safety that are designated as Seismic Category I items that are designed in accordance with the regulatory guides, industry codes and standards that are referenced in SRP Sections 3.2.2, 3.9.1 through 3.9.3, 3.10, and 3.11.
3. The adequacy of the qualification and inservice testing program for pumps and valves is determined in accordance with SRP Section 3.9.6.
4. The seismic qualification of equipment is assessed in accordance with SRP Section 3.10.
5. The radioactive waste management SSCs is reviewed in accordance with SRP Sections 11.2 through 11.4.
6. The seismic design of fire protection systems installed in safety-related areas is reviewed in accordance with SRP Section 9.5.1
7. The quality assurance program for design, construction and operation is reviewed in accordance with SRP Sections 17.5.
8. The classification and design of safety-related structures are reviewed in accordance with SRP Sections 3.8.1 through 3.8.5.

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

## II. ACCEPTANCE CRITERIA

### Requirements

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

1. GDC 1, and the pertinent QA requirements of 10 CFR Part 50, Appendix B, as they relate to applying QA requirements to activities affecting the safety-related functions of SSCs designated as Seismic Category I commensurate with their importance to safety.
2. GDC 2, as it relates to the requirements that SSCs important to safety shall be designed to withstand the effects of earthquakes without loss of capability to perform necessary safety functions.
3. GDC 61, as it relates to the design of radioactive waste systems, and other systems that may contain radioactivity, to assure adequate safety under normal and postulated accident conditions.
4. 10 CFR Part 100, Appendix A and 10 CFR Part 50, Appendix S, as it relates to certain SSCs being designed to withstand the SSE and remain functional.
5. 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;
6. 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. To meet the requirements of GDC 2, 10 CFR Part 100, Appendix A, and 10 CFR Part 50, Appendix S regarding seismic design classification are met by using guidance provided in RG 1.29 "Seismic Design Classification." This guide describes an

acceptable method of identifying and classifying those plant features that should be designed to withstand the effects of the SSE. RG 1.151 provides guidance with regard to seismic design requirements and classification of safety-related instrumentation sensing lines.

RG 1.143 provides guidance used to establish the seismic design requirements of radioactive waste management SSCs to meet the requirements of GDC 2 and 61 as they relate to designing these SSCs to withstand earthquakes. The guide identifies several radioactive waste SSCs requiring some level of seismic design consideration.

RG 1.189 provides guidance used to establish the design requirements of fire protection to meet the requirements of GDC 2 as it relates to designing these SSCs to withstand earthquakes. This guide identifies portions of fire protection SSCs requiring some level of seismic design consideration.

### 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. Compliance with GDC 1 and 10 CFR Part 50, Appendix B, requires that SSCs important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions to be performed. GDC 1 requires, in part, that a QA Program be established and implemented in order to provide adequate assurance that SSCs important to safety will satisfactorily perform their safety functions. 10 CFR Part 50, Appendix B, establishes QA program requirements for the design, construction, and operation of SSCs important to safety. The requirements of 10 CFR Part 50, Appendix B apply to activities affecting the safety-related functions of those SSCs, including those SSCs defined by the guidance of RG 1.29 as Seismic Category I SSCs. Specifying and using proven quality standards and requirements for the design of SSCs important to safety minimizes the potential for failures of those SSCs, including Seismic Category I SSCs that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.
2. Compliance with GDC 2 requires that nuclear power plant SSCs important to safety be designed to withstand the effects of natural phenomena, including earthquakes, without loss of capability to perform their safety functions. Also, compliance with 10 CFR Part 100, Appendix A and 10 CFR Part 50, Appendix S, requires that certain SSCs be designed to withstand the SSE and remain functional. The SSCs are those necessary to ensure: (1) the integrity of the reactor coolant pressure boundary; (2) the capability to shut down the reactor and maintain it in a safe shutdown condition; or (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposures of 10 CFR Part 100. RG 1.29 describes an acceptable method of identification and classification of those SSCs that should be designed to withstand the SSE. RG 1.29 states that systems and components required for safe shutdown, including their foundations and supports, are designated as Seismic Category I and should be designed to withstand the effects of the SSE and remain functional. In addition, this guide recommends that systems, other than radioactive waste management systems, that contain, or may contain, radioactive material and whose postulated failure would result in potential offsite whole body (or

equivalent) doses that are more than 0.005 Sv (0.5 rem), should also be classified as Seismic Category I. Compliance with RG 1.29 assures that, by designing the SSCs identified in the guide to withstand the effects of an SSE, a designed-in safety margin is provided for bringing the reactor to a safe, shutdown condition, while also reducing potential offsite doses from seismic events. RG 1.151 positions C.2 and C.3 provide guidance for the proper seismic classification of safety-related instrumentation sensing lines. Application of this guidance ensures that the instrument sensing lines used to actuate or monitor safety-related systems will be appropriately classified and will be capable of withstanding the effects of the SSE. RG 1.189 positions 3.2.1, 6.1.1.2, and 7.1 provide guidance for the proper seismic classification of fire protection systems. Application of this guidance ensures that (1) the fire protection systems for manual firefighting in areas containing safety related equipment, (2) containment penetrations and (3) RCP lube oil will be properly classified and analyzed for safe-shutdown earthquake loads. Compliance with the above requirements and guidance assures that the SSCs important to safety that are required to function during an SSE are properly classified as Seismic Category I and will function during such events enabling accomplishment of the safety functions described above.

3. Compliance with GDC 61 requires that radioactive waste management systems, and other systems that may contain radioactivity, be designed to assure adequate safety under normal and postulated accident conditions. Postulated conditions considered with respect to seismic design and classification of SSCs include losses of SSC integrity and potential radioactive releases as a result of seismic events. RG 1.143 provides acceptable methods and guidance relative to seismic design and classification for radioactive waste management SSCs. This RG provides classification information and design criteria to assure that components and structures used in radioactive waste management systems are designed, constructed, installed and tested in a manner that protects the health and safety of the public and the plant operating personnel. Designing and constructing the radioactive waste management SSCs to meet the requirements of GDC 61 and the guidance on seismic design and classification contained in RG 1.143 provides assurance that SSCs containing radioactivity will be properly classified and radiation exposures as a result of seismic events will be as low as reasonably achievable.

### 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. RG 1.29, which identifies SSCs of light-water-cooled reactors on a functional basis, is the principal document used for identifying those plant features important to safety which, as a minimum, should be designed to Seismic Category I requirements. RG 1.151 provides guidance for the seismic classification of safety-related instrument sensing lines. RG 1.29 also recommends that systems, other than radioactive waste management systems, that contain, or may contain, radioactive material and whose

postulated failure would result in conservatively calculated potential offsite whole body (or equivalent to any part of the body) doses that are more than 0.005 Sv (0.5 rem), should also be classified as Seismic Category I. RG 1.143 provides seismic design requirements for radioactive waste management system SSCs. Those radioactive waste management systems requiring seismic design considerations should be clearly identified. RG 1.189 provides guidance for seismic classification and analysis of fire protection systems SSCs. Those portions of fire protection systems requiring seismic design considerations should be clearly identified.

The staff review should establish whether the applicant has indicated compliance with Regulatory Guides 1.29, 1.143, 1.151, and 1.189 in the SAR. Where there are differences with respect to the Guides, these differences should be identified.

2. The information in the SAR identifying Seismic Category I SSCs is reviewed for completeness and to assure there is sufficient detail to permit identification of specific items. This may include a review of the SAR text, tables, plot plans, general arrangement drawings, structural drawings, and piping and instrumentation diagrams, as appropriate. Where portions of a system are classified Seismic Category I, the boundary limits of that portion of the system designed to Category I requirements are reviewed on the piping and instrumentation diagrams. For fluid systems that are partially Seismic Category I, the Category I portion of the system should extend to the first seismic restraint beyond the isolation valves that isolate the part that is Seismic Category I from the non-seismic portion of the system. At the interface between Seismic and non-Seismic Category I piping systems, the Seismic Category I dynamic analysis will be extended to either the first anchor point in the non-seismic system or to a sufficient distance in the non-seismic system so as not to degrade the validity of the Seismic Category I analysis. In addition, where portions of a structure are classified Seismic Category I, those portions of the building foundations and supports designed to Category I requirements are identified on the plant arrangement drawings. The interfaces between components and associated support structures designed to Seismic Category I requirements are then checked to assure compatibility.

The reviewer verifies that the seismic classification of safety-related instrumentation sensing lines is in accordance with the guidance in RG 1.151 positions C.2 and C.3.

3. SSCs that are classified Seismic Category I are also reviewed to assure that these plant features are within the scope of an applicant's QA Program. This QA Program should be in compliance with the pertinent QA requirements of 10 CFR Part 50, Appendix B. In accordance with RG 1.29, the pertinent QA requirements of Appendix B to 10 CFR Part 50 should be applied to all activities affecting the safety-related functions of Seismic Category I SSCs. If there are items designated Seismic Category I that are not identified as within the scope of the 10 CFR Part 50, Appendix B, QA Program, then this information is transmitted to the staff for resolution of the issue. The seismic classification review of SSCs important to safety and the review verifying that these plant features are constructed in accordance with a 10 CFR Part 50, Appendix B, QA Program is normally performed concurrently with the quality group classification review of SRP Section 3.2.2.

Other SSCs that may be required for operation of the facility (excluding electrical features) need not be designed to Seismic Category I requirements. Those SSCs not required to be designed to seismic Category I requirements include those portions of Seismic Category I systems such as vent lines, drain lines, fill lines and test lines on the downstream side of isolation valves and those portions of the system not required to perform a safety function.

4. Classification guidelines for selected BWR main steam system SSCs are addressed in SRP Section 3.2.2 Appendix A. For General Electric BWR/6 main steam lines and main feedwater lines, an acceptable alternate seismic classification to that currently specified in Position C.1.e of RG 1.29 is provided in Figure B-1 attached to Appendix B of SRP Section 3.2.2. For BWRs that do not include a main steam isolation valve leakage control system, and for which main steam line fission product hold-up and retention is credited in the analysis of design basis accident radiological consequences, an acceptable alternative seismic classification for the main steam lines and associated systems is provided in Appendix A of SRP Section 3.2.2.
5. The information in the SAR is reviewed to identify SSCs whose continued function is not required following a seismic event, but whose failure could reduce the functioning of any Seismic Category I feature to an unacceptable safety level, or could result in incapacitating injury to control room personnel, to assure that such items will be analyzed and designed to maintain their integrity under seismic loading from the SSE.

The information in the SAR is also reviewed to identify radioactive waste management system and fire protection SSCs to assure that those SSCs requiring seismic design considerations have been identified consistent with those systems specified in RG 1.143 and RG 1.189.

6. In the event an applicant intends to take exception to Regulatory Guides 1.29, 1.143, 1.151, and/or 1.189 but has not provided an adequate justification for resultant proposed seismic classifications, the staff prepares questions whose answers may require additional documentation or analysis to establish an acceptable basis for the proposed seismic classification. The staff may also prepare comments requesting clarification in order to assure a clear understanding of the seismic classification assigned to a system by the applicant.

If the staff's questions are not resolved in a satisfactory manner, a staff position is taken requiring conformance to Regulatory Guides 1.29, 1.143, 1.151, 1.189 and with the positions discussed in the above Review Procedures.

7. 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.

SSCs (excluding electrical features) that are important to safety and that are required to withstand the effects of an SSE and remain functional have been classified as Seismic Category I items and have been identified in an acceptable manner in Tables 3.X.X and 3.X.X, and on system piping and instrumentation diagrams in the SAR. Other SSCs not identified as Seismic Category I, but whose failure could reduce the functioning of any Seismic Category I feature to an unacceptable safety level or injure control room personnel, are identified for analysis to assure the SSE will not cause such failures.

The staff concludes that the SSCs important to safety that are within the scope of this review have been properly classified, are within the scope of the applicant's QA Program, and thus meet the relevant requirements of General Design Criteria 1, 2, and 61, 10 CFR Part 50, Appendix B, 10 CFR 50.34(a)(1), and 10 CFR Part 100, Appendix A, "Seismic and Geologic Siting Criteria for Nuclear Power Plants."

This conclusion is based on:

1. The applicant's having met the requirements of GDC 1 by providing a commitment in the SAR that Seismic Category I SSCs will be designed, constructed and operated under a QA Program, in compliance with the requirements of 10 CFR Part 50, Appendix B.
2. The applicant's having met the requirements of GDC 2, 10 CFR Part 100, Appendix A and 10 CFR 50, Appendix S, by having properly classified SSCs important to safety as Seismic Category I items in accordance with the positions of RG 1.29, "Seismic Design Classification," RG 1.151, "Instrument Sensing Lines" and RG 1.189 "Fire Protection for Nuclear Power Plants." The identified SSCs are those plant features necessary to assure (1) the integrity of the reactor coolant pressure boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent and mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposures of 10 CFR Part 100.
3. Those SSCs not identified as Seismic Category I, but whose failure could reduce the functioning of any Seismic Category I feature to an unacceptable safety level or result in incapacitating injury to control room personnel, having been identified for analysis to assure they will not fail during a SSE.

4. Radioactive waste system and fire protection SSCs requiring seismic design considerations having been identified consistent with the positions of RG 1.143. and RG 1.189.
5. (For Boiling Water Reactors (BWRs)), the applicant's having properly classified the main steam and associated systems in accordance with the guidance contained in Appendices A and B of SRP Section 3.2.2.

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 Part 50, Appendix A, General Design Criterion 1, "Quality Standards and Records."
2. 10 CFR Part 50, Appendix A, General Design Criterion 2, "Design Bases for Protection Against Natural Phenomena."
3. 10 CFR Part 50, Appendix A, General Design Criterion 61, "Fuel Storage and Handling and Radioactivity Control."
4. 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants."
5. 10 CFR Part 100, Appendix A, "Seismic and Geologic Siting Criteria for Nuclear Power Plants."
6. Regulatory Guide 1.29, "Seismic Design Classification."
7. Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants."

8. Regulatory Guide 1.151, "Instrument Sensing lines."
9. Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants."
10. 10 CFR 50, Appendix S, "Earthquake Engineering Criteria for Nuclear Power Plants."

---

**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.

---