http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/.

Please specify the report number NUREG–0800, Section 13.3, Second Draft Revision 3, in your comments, and send your comments by November 13, 2006.

FOR FURTHER INFORMATION, CONTACT: Bruce Musico, Mail Stop O–6H2, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. Telephone: (301) 415–2310; internet: *bjm2@nrc.gov.*

SUPPLEMENTARY INFORMATION: This Standard Review Plan, NUREG–0800, has been prepared to establish criteria that the NRR and NSIR 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, applicants are required to identify differences in design features, analytical techniques, and procedural measures proposed for a facility and corresponding SRP acceptance criteria, and evaluate how the proposed alternatives to the SRP acceptance criteria provide an acceptable method of complying with the NRC's regulations.

The standard review plan sections are keyed to 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. For combined license applications submitted under 10 CFR part 52, the applicability of standard review plan sections will be based on the Regulatory Guide DG–1145, ''Combined License Applications for Nuclear Power Plants (LWR Edition),'' as superceded by the final guide.

The proposed revision is a rewrite of the July 1981 SRP Section 13.3, Revision 2, and provides staff guidance for the review of emergency planning information submitted in license applications under 10 CFR parts 50 and 52. In addition to updating the July 1981 SRP section, the proposed revision includes some of the proposed changes in the April 1996 draft Revision 3 to SRP section 13.3. The proposed revision consists mostly of changes that identify specific regulations and guidance, and provides SRP acceptance criteria for the various applications submitted under both 10 CFR parts 50 and 52. The most significant changes reflect the new application processes allowed by 10 CFR part 52. This also includes the incorporation of Commission policy on the use of emergency planning inspections, tests, analyses, and acceptance criteria (EP–ITAAC), which is addressed in the February 22, 2006, SRM SECY–05–0197, ''Review of Operational Programs in a Combined License Application and Generic Emergency Planning Inspections, Tests, Analyses, and Acceptance Criteria'' (ML052770225). In addition, the proposed revision incorporates experience gained from the first three early site permit (ESP) application reviews, and the standard design certification applications. The license application review processes in both 10 CFR part 50 and part 52 utilize the same existing emergency planning requirements contained primarily in 10 CFR 50.47 and Appendix E to part 50.

While the proposed SRP Section 13.3 revision is a complete rewrite of Section 13.3, it does not contain new or unreviewed staff positions. It does, however, identify a new NUREG/CR report on evacuation time estimates (ETEs). Guidance on the development of ETEs was provided in November 1980 in NUREG–0654/FEMA–REP–1, Revision 1, ''Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,'' and that guidance is still used today. The staff will continue to use the established guidance and criteria in Appendix 4, ''Evacuation Time Estimates Within the Plume Exposure Pathway Emergency Planning Zone,'' of NUREG–0654/FEMA–REP–1, as the basis for compliance with applicable regulations.

The new (January 2005) ETE report, NUREG/CR–6863, ''Development of Evacuation Time Estimate Studies for Nuclear Power Plants,'' is identified in the proposed SRP Section 13.3 revision as providing information relating to performing an ETE analysis. In March 1992, NUREG/CR–4831, ''State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants,'' was written to provide updated information, assumptions, and methods to be used in performing ETE studies. NUREG/CR–6863 updates NUREG/CR–4831 and integrates new technologies in traffic management, computer modeling, and communication systems to identify additional tools useful in the development of new, or updates to existing, ETEs.

Of note, the proposed revision does introduce the option to use EP–ITAAC in an ESP application, which is consistent with the ongoing 10 CFR part 52 rulemaking (see proposed 10 CFR 52.17(b)(3)). Prior to the current 10 CFR part 52 rulemaking, the rules only addressed the use of EP–ITAAC with a combined license (COL) application but not at the ESP stage. The staff's position, which is supported by public comments, is that the extension of EP–ITAAC to ESP applications is not precluded in the existing rules, and is necessary in order to accommodate an applicant's submission of a ''complete and integrated emergency plan'' at the ESP stage, as well as provide an additional level of flexibility for an ESP applicant. Without allowing the use of EP–ITAAC (or other such placeholders) at the ESP stage, the staff would be unable to reach a reasonable assurance finding at the time of application. The use of EP–ITAAC would allow the staff to make its findings based on proposed, and not yet implemented, emergency plans. Table 13.3–1 provides a proposed set of allowable EP–ITAAC (for use at either the ESP or COL application stage). The asterisked/bolded text in the table represents the earlier set of COL EP–ITAAC that was approved by the Commission in SRM SECY–05–0197. Table 13.3–1 reflects a process of review allowed by 10 CFR part 52, and does not contain new or unreviewed staff positions relating to emergency planning requirements.

Dated at Rockville, Maryland, this 25th day of September, 2006.

For the Nuclear Regulatory Commission.

Robert Tregoning,

Branch Chief, New Reactor Infrastructure Guidance, Development Branch, Division of New Reactor Licensing.

[FR Doc. E6–16013 Filed 9–28–06; 8:45 am]

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NUCLEAR REGULATORY COMMISSION

[HLWRS–ISG–01]

Review Methodology for Seismically Initiated Event Sequences; Availability of Final Interim Staff Guidance Document

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of availability.

SUMMARY: The Nuclear Regulatory Commission (NRC) is announcing the availability of final interim staff guidance (ISG) document, ''HLWRS–ISG–01, Review Methodology for Seismically Initiated Event Sequences,'' and NRC responses to the public comments received on that document. The ISG clarifies or refines the guidance provided in the Yucca Mountain Review Plan (YMRP) (NUREG–1804, Revision 2, July 2003). The YMRP provides

guidance to NRC staff for evaluating a potential license application to receive and possess high-level radioactive waste at a geologic repository constructed or operated at Yucca Mountain, Nevada.

ADDRESSES: The document HLWRS–ISG–01 is available electronically at NRC's Electronic Reading Room, at *http://www.nrc.gov/reading-rm/adams.html.* From this site, you can access NRC's Agencywide Documents Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The ADAMS accession number for the ISG is ML062650140. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1–800–397–4209, or (301) 415–4737, or (by e-mail), at *pdr@nrc.gov.*

This document may also be viewed electronically on the public computers located at NRC's PDR, Mail Stop: O1F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents, for a fee.

NRC RESPONSES TO PUBLIC COMMENTS ON HLWRS–ISG–1: In preparing final HLWRS–ISG–01, ''Review Methodology for Seismically Initiated Event Sequences,'' ADAMS ML062650140, the NRC staff reviewed and considered 23 comments received from five different organizations during the public comment period. One commenter had 12 comments recommending specific clarifying changes to the ISG. One commenter questioned NRC using the ISG to clarify its regulatory intent, instead of addressing the issue of seismically initiated event sequences, more appropriately, in the YMRP. Two commenters questioned whether the ISG sets forth a more stringent standard for the seismic design of repository surface facilities than the existing criteria for reactors. One commenter was concerned that a specific methodology described in the ISG would bias the NRC staff's review against other methodologies that the U. S. Department of Energy (DOE) may propose that provide equal or better protection of public health and safety. One commenter was concerned that the specific methodology proposed in the ISG lacks both precedent and scientific support. Two commenters were concerned that the ISG methodology may not produce accurate results over the 100-year plus operating life of the Yucca Mountain repository preclosure operating period. Two commenters raised questions as to whether NRC has adequately considered the geometric consequence of closely spaced, recurring seismic events, in determining the seismic hazard and related failure probability of a structure, system, or component (SSC) important to safety (ITS). One commenter states that ''the ISG totally ignores the existence of Section 63.102(f) of the regulation.'' The following discussion indicates how the comments were addressed, and the changes, if any, made to the ISG as a result of the comments.

Line numbers in the following comments refer to the draft HLWRS–ISG–01, ADAMS ML061170532, which was made available for public comment on May 22, 2006 (71 FR 29369).

1. *Comment.* The commenter recommends that the sentence starting at Line 38 be re-phrased as: ''The mean fragility curve for an SSC ITS may be estimated using: (1) Probability density functions for controlling parameters in a Monte Carlo analysis; (2) simplified methods outlined in Section 4 of Electric Power Research Institute, TR–103959 (Ref. 2); (3) a method that uses the Conservative Deterministic Failure Margin methodology to determine the 1percent probability of failure, and an estimate of the composite logarithmic standard deviation, as described by Kennedy (2001, pp. 44 to 45) and Ravindra (2006, p. 132); or (4) other methods that capture appropriate variability and uncertainty in parameters used to estimate the capacity of the SSCs ITS to seismic events.

Response. NRC regulations grant DOE broad flexibility in choosing a method or methods for preclosure safety analysis of hazards at the geologic repository operations area (GROA). Although NRC staff has stated some example methods, in the ISG, for estimating the fragility curve, this does not imply that alternative methods would be unacceptable for demonstrating compliance with regulatory requirements. DOE may use an alternative method, if sufficient technical basis for the use of the method is provided.

No changes were made to the ISG as a result of this comment.

2. *Comment.* The commenter recommends that the following sentence be added at the end of the sentence on line 43:

''Where appropriate, assessment of fragility for an SSC may be based on fragility values for an identical or similar component as found in the literature.''

Response. NRC agrees with the commenter that the fragility data for an SSC, developed and documented in databases and used at other facilities, may be used to estimate fragility for the SSCs at the repository, if the data are shown to be applicable to the repository SSCs.

The ISG has been revised to add the following at the end of the sentence on Line 43:

''An estimate of fragility for an SSC may be based on fragility values for an identical or similar component as found in the literature, provided technical bases for the relevance of the data to the SSC under consideration are established.''

3. *Comment.* The commenter recommends that an explanation be provided to address why the selection of the slope (Lines: 235 to 237, 240 to 241: Page: 8) is appropriate. This explanation may include, for example, that this portion of the hazard curve was selected if it were the interval where the dominant contribution to risk arises. Text could be added at the end of the sentence on Line 241:

''The slope should be selected to focus on the portion of the curve where risk is expected to dominate the convolution.''

Response. NRC agrees with the commenter that an explanation for the selection of the slope between probabilities of exceedance of 10^{-6} and 10^{-5} should be added in the ISG.

The ISG has been revised to add the following at the end of the sentence on Line 241:

''This slope was selected to represent the hazard accurately at probabilities of exceedance values close to the target annual threshold probability of 10^{-6} because this portion of the hazard curve may have a significant contribution to the risk.''

4. *Comment.* The commenter suggests replacing the sentence starting on Line 263, with the sentence: ''For the purposes of illustration, a single response frequency of 10 hertz (Hz) is assumed for this evaluation.'' The commenter also suggests that an explanation of why a single frequency is appropriate should be added.

Response. NRC believes that the essence of the comment, with the suggested change to the ISG, is adequately responded to by the sentences in lines 262 to 264 of the ISG. These sentences state that the evaluation typically would be performed at appropriate structural frequencies, based on the dynamic characteristics of the SSC, and that example evaluation is performed at a single frequency of 10 hertz. A single frequency was chosen in the example for illustration purposes only. As stated in the sentence in line 261, the evaluation typically would have to be performed for a number of structural frequencies of an SSC, based on its dynamic characteristics, to

appropriately assess the probability of failure of an SSC during a seismic event.

No changes were made to the ISG as a result of this comment.

5. *Comment.* The commenter suggests that text be added to include discussion of other non-seismic factors that may influence/mitigate the probability of occurrence of the event sequence. At line 262, a sentence should be inserted to read:

''Other non-seismic factors such as residency times, targeting factors, operational states, and design constraints, which may also influence the probability of occurrence of the complete event sequence, are not considered in this example.''

Response. NRC agrees with the commenter that in the example, design constraints, such as the probability of failure of the canister during a potential drop event, are not considered. This is indicated in Lines 276 to 277 of the ISG, and in the clarifying statement added in the ISG in response to comment 10. NRC believes that the clarifying statement recognizes that if the canister breach probability (given a drop) is demonstrated to be less than 1.0, the appropriate conditional probability of breach may be factored into the quantification of the event sequence. Therefore, NRC believes that a change to the ISG to clarify this factor in determining the probability of occurrence of the event sequences is not necessary. Other non-seismic factors mentioned in the comment appear to be related to the duration of operations at the proposed Yucca Mountain repository. NRC would need specific information on the Yucca Mountain repository operations and the technical bases for determining the values of these factors, to judge whether these factors are appropriate and can be used to calculate event sequence probability of occurrence in the preclosure safety analysis. NRC will review the use of these factors and their technical bases and make a determination of their acceptability during the potential future review of the DOE License Application for the proposed Yucca Mountain repository.

No changes were made to the ISG as a result of this comment.

6. *Comment.* The commenter recommends that the assumption made in the computation be clarified, and that each branch in the sequence be addressed in the description (Lines: 308 to 323: Page: 12). For instance, at the end of the sentence ending on Line 310, the text should be expanded to mention the other branches:

''Tracing Sequence 3 across the event tree shown in Figure B–1, this sequence also includes the STR–SHWL success branch and the assumed failure of the canister (CANIS–BRCH) * * *'' Additional text on Lines 310 to 323 should include: ''* * * the STR–SHWL success probability is the complement of the fragility of the failure branch * * *'' and ''* * * Therefore, the combined fragility of the three systems in the event sequence can be obtained by * * *.''

Response. NRC agrees with the commenter that the Event Sequence 3, as shown in Figure B–1, implies that the concrete shear wall provides a confinement barrier to the release of radioactive materials before they pass through the Heating, Ventilation and Air-Conditioning (HVAC) system. However, for illustration purposes only, it was assumed in the example that, if the HVAC duct anchor system fails, all radioactive materials released because of the canister breach would be discharged through the HVAC system. To clarify this assumption, the ISG has been revised as follows:

Add the following at the end of the sentence in Line 309:

''For simplicity, it is assumed, in this example, that if the HVAC duct anchor system were to fail, all radioactive materials released because of the potential canister breach would be discharged through the HVAC system, and that the concrete shear wall would be unable to provide a barrier to the release of radioactive materials.''

7. *Comment.* The commenter suggests that Figure B–1 be revised for clarity, making the figure consistent with conventions for the construction of event trees in other NRC documents, such as NUREG–2300. The following changes are suggested to Figure B–1:

(a) The figure be revised to indicate that the initiating event of the sequence is an earthquake;

(b) The figure heading be revised to state the event in terms of success;

(c) The missing branch be shown for the event that the crane does not drop the waste form.

(d) The probability of canister breach, which has been assumed to be 1.0, be indicated.

Response. NRC agrees with the suggested change in item (b), above, regarding revision of the figure headings and stating the event in terms of success, and has revised Figure B–1. Staff, however, does not agree with the other suggested changes because the title of the figure identifies the event sequence as initiated by a seismic event. This is also consistent with Section 11.2.6.2 of NUREG–2300. In addition, adding a success path for the crane not dropping the waste form would be superfluous to this example, and would not add any value to the illustration of the procedure for event sequence probability calculation. The probability of canister breach assumed as 1.0 is stated in section B of Appendix B.

Figure B–1 has been revised as a result of this comment.

8. *Comment.* Assuming that the text in lines 220 to 222 has broader applicability than just as part of the example, the commenter suggests that the sentence starting on Line 220 be deleted from Appendix A, moved to the Discussion section on page 1, and inserted into the text at Lines 54 to 63. The commenter also suggests changes to the text for insertion into the Discussion section on page 1, in comment 9.

Response. NRC agrees with the comment. The ISG has been revised as follows:

(a) The sentence starting on Line 220 and ending on Line 222, ''The technical basis * * * staff review.'', has been deleted.

(b) The following has been added at the end of the sentence on Line 57:

''Technical bases for the development of the SSC ITS fragility curves should be available for staff review.''

9. *Comment.* The commenter suggests that, the following sentence consistent with the Comment 8, should be inserted into the Discussion section on page 1 at Lines 54 to 63:

''It is necessary in developing seismic fragilities that the technical basis for the development of the applicable fragility parameters be available for staff review.''

Response. NRC agrees with the essence of the comment. The ISG has been revised as shown in NRC staff response to comment 8, item (b).

10. *Comment.* The commenter recommends adding the following phrase to the end of Line 277:

''* * * and it is assumed that probability of breach is 1.0 in all cases''. In addition, the commenter recommends adding, in Figure B–1, ''(Pf = 1.0),'' on the branch indicating potential for breach. The commenter also recommends adding text to state that when the probability of a breach (given a drop) is demonstrated to be less than 1.0, the appropriate conditional probability of breach may be factored into the quantification of the event sequence.

Response. NRC agrees with the comment. The ISG has been revised to clarify that, for the example in Appendix B, it is assumed that the canister probability of failure (given a drop) is 1.0. The comment regarding the use of appropriate conditional probability of canister failure, in the event sequence probability calculation, has been addressed in response to comment 5.

The ISG has been revised to add the following at the end of the sentence in Line 277:

''It is assumed that the canister probability of failure, given a drop, is 1.0.''

11. *Comment.* The commenter suggests adding the following text in the sentence starting on Line 36:

''As a conservative assessment of probability, the probability of occurrence of an event sequence leading to an SSC ITS failure, or seismic performance, can be determined by * * *''

Response. NRC agrees with the essence of the comment, and has added a new sentence to reflect the comment. The ISG has been revised to add the following sentence in Line 36:

''As a conservative assessment of the probability of occurrence of an event sequence, a single SSC ITS may be considered, instead of all SSCs ITS in the event sequence.''

12. *Comment.* The commenter suggests that a brief statement be added at the end of line 232 and in Appendix B, as follows:

''Computations shown in the appendix can be performed either by hand computations or through the use of computer codes. A number of computer codes are available that can be used for probability computations.''

Response. NRC agrees with the commenter that computations for the event sequence probabilities can be performed either by hand computations or through the use of computer codes. However, these options are available to the applicant for any calculations. Although the details of associated quality assurance requirements may be different for the computational method selected, the overall staff review strategy for the DOE analysis is not affected significantly by the computational method selected by DOE. Therefore, staff does not see the need to revise the ISG.

No changes were made to the ISG as a result of this comment.

13. *Comment.* The commenter refers to NRC Chairman Dale E. Klein's statement, on July 1, 2006, that regulatory stability is a crucial element in ensuring that NRC can complete its work in a timely manner, and states that HLWRS ISG–01 has the potential to create regulatory instability. Accordingly, the commenter encourages NRC to take advantage of the opportunity afforded by this comment period to reconsider issuing this ISG and to instead address the issue of seismically initiated event sequences, more appropriately, in the YMRP. The commenter is recommending this course of action for the following five reasons:

(a) ISG is not the most effective means for NRC to clarify its regulatory intent and could lead to unforeseen consequences due to inadequate review (including not being reviewed by the Commission itself).

(b) Use of an ''Interim Guidance,'' a vehicle that was meant to address emerging issues affecting multiple licensed activities, is unnecessary in a situation where there is only a single potential licensee that is not currently conducting any licensed activities.

(c) Draft HLRWS ISG–01 lacks safety focus in that it sets forth a more stringent standard for the seismic design of repository surface facilities than currently exists for reactors, without recognizing the comparatively lower level of risk associated with the repository facilities. In doing this, HLRWS ISG–01 directly contradicts the very regulation (10 CFR Part 63) that it seeks to inform.

(d) Providing guidance to staff that assumes a specific methodology for demonstrating compliance with 10 CFR 63.111 is likely to bias the staff's review against other methodologies, that DOE may propose, which provide equal or better protection of public health and safety. Furthermore, giving DOE the opportunity to first propose an acceptable method for meeting the regulation would allow for a more independent NRC review—avoiding a situation where NRC is both telling DOE how to demonstrate compliance and then determining if compliance was demonstrated as instructed.

(e) The specific methodology proposed in this draft ISG lacks both precedent and scientific support.

Response. Responses to each of the commenter's reasons are provided below:

(a) In the commenter's view, the ISG is not an effective means for NRC to clarify its regulatory intent and could lead to unforeseen consequences because of inadequate review (including not being reviewed by the Commission itself).

The ISG reflects a focused revision of the YMRP, with the scope of the revision limited to a specific technical issue. The ISG process allows for the rapid identification and resolution of specific technical issues that emerge as a result of staff interaction, with DOE, in preparation for the future License Application review. To increase regulatory efficiency and enhance clarity of communication with DOE and the public, NRC anticipates providing incremental updates to the YMRP in the form of ISGs. NRC believes it is unnecessary and inefficient to republish the YMRP, given the narrow scope of the technical issue addressed in the ISG. If re-publication of the YMRP is warranted (*e.g.*, due to a major rule change or accumulation of a number of ISGs), staff will be able to insert the appropriate text directly from the ISG into the YMRP. The ISG remains available to provide background discussion and examples, to supplement text, in the YMRP, at a level of detail not normally found in a Standard Review Plan (SRP). Thus, staff sees the ISG process as an effective, efficient, and appropriate means for revising or supplementing the YMRP.

An ISG provides guidance to NRC staff on approaches to use during the review of a potential license application. ISG guidance is for illustration purposes only, and does not imply a preferred method or an approach that an applicant must use. An ISG's review approach provides a framework for staff to conduct an efficient review, consistent with regulatory requirements. ISGs, that are revisions or supplements to the SRPs, are issued at the NRC Office Division level, because SRPs do not represent regulatory commitments, or staff interpretations. During the ISG development process, the technical and regulatory basis for the ISG is thoroughly reviewed by appropriate NRC technical, management, and legal staff. Also, the public and shareholders are informed of a proposed draft ISG and afforded the opportunity to comment. Comments from the public and stakeholders are considered in developing the final ISG.

No changes were made to the ISG as a result of this comment.

(b) In the commenter's view, ISGs are not necessary for the Yucca Mountain project because DOE is the only potential licensee for the proposed repository, and no licensing activities are being conducted currently. Although it is true that DOE is the only potential licensee and no licensing activities are currently underway, important technical issues continue to be identified in the complex, one-of-a-kind Yucca Mountain project during the prelicensing interaction with DOE. As these issues are being resolved, the ISG process provides an effective, efficient, and appropriate means for staff to revise or supplement the YMRP, as discussed in response to comment 13(a). The ISG process also allows staff to communicate with potential licensees on the scope of the staff reviews on specific technical issues, as NRC staff prepares to review the potential License Application in an effective and timely manner.

No changes were made to the ISG as a result of this comment.

(c) In the commenter's view, ISG–01 lacks safety focus and sets forth a more stringent standard for the seismic design

of repository surface facilities than for reactors even though the repository facility has a lower level of risk, which appears contradictory to the intent of 10 CFR Part 63. The commenter also questions the purpose of 10 CFR 63.102(f) and how it is accounted for in the draft HLWRS–ISG–01. Another commenter made a similar statement.

NRC does not agree with the commenter that the ISG–01 proposed methodology for seismically initiated event sequences sets forth a more stringent standard for the seismic design of repository facilities than for reactors. NRC also does not agree that the ISG–01 contradicts the intent of Part 63. The methods discussed in the draft ISG do not mandate seismic design requirements, but present approaches that NRC staff could use to review the performance of SSCs ITS for seismically initiated event sequences, as required in Part 63.

The preclosure compliance requirements in Part 63 are performance-based, in that instead of specifying specific design loads and corresponding acceptance criteria (*i.e.*, codes/standards) the regulations in 10 CFR 63.111, for the GROA, specify radiological dose limits to the public and workers. In the preclosure safety analysis (PCSA), DOE must demonstrate that the GROA design will meet these dose limits, taking into consideration credible event sequences.

The ISG–01 provides a methodology to determine if a seismically initiated event sequence is a Category 2 event sequence, as defined in 10 CFR 63.2, or if it is beyond Category 2 and can be screened out from further consideration. If the event sequence is determined to be a Category 2 event sequence, DOE has to demonstrate that the dose limit of 5 roentgen equivalent man (rem) at any point on the boundary of the site is met. These performance-based requirements in Part 63 necessarily result in a different type of compliance demonstration than is traditionally used for reactor licensing.

For reactors, a seismic event is directly related to the characteristics of a specified safe shutdown earthquake (10 CFR Part 50, Appendix S), which is used as the design basis for each of the safety-related SSCs, and demonstration of compliance with regulations. In contrast, Part 63 does not specify seismic or other design bases or SSCs, but instead requires consideration of credible event sequences and their potential consequences. The guidance in the draft ISG shows how the fragilities of one or more SSCs in an event sequence can be combined with the seismic hazard curve to determine the likelihood of an entire event sequence, which is the metric used for compliance in Part 63. Section 63.102(f), which allows initiating events to be considered based on precedents adopted for nuclear facilities with comparable or higher risks, was not used in the ISG–01 because the compliance demonstration for Part 63 requires safe performance of SSCs in seismically initiated event sequences, instead of a single initiating seismic event (*i.e.*, safe-shutdown earthquake) that is traditionally used as a design basis in reactor licensing.

DOE will need to design to a level of performance sufficient to meet the requirements of Part 63, for seismically initiated event sequences. DOE is given broad flexibility in selecting a preferred design basis, and determining the degree of defense-in-depth contained within the GROA system. Although DOE must provide the basis for its proposed designs, compliance with Part 63 will be determined by the performance of the design during credible seismically initiated event sequences, not by adherence to a predetermined design basis for a seismic event.

No changes were made to the ISG as a result of this comment.

(d) In the commenter's view, the specific methodology in the ISG–01 may bias the staff's review against other methodologies that DOE may propose, even if these alternatives provide equal or better protection of public health and safety. The commenter also raises the concern that NRC should not dictate to DOE how to demonstrate compliance with regulations because it does not allow for a more independent review of the future DOE License Application. NRC does not agree with the comment that providing a methodology for seismically initiated event sequences in ISG–01 may preclude DOE from proposing other methodologies for complying with Part 63. Similar to the YMRP, ISGs are prepared to provide guidance to the staff for review of any future License Application, from DOE, for the proposed Yucca Mountain repository, and are not mandatory. DOE has the option of proposing alternative methodologies to comply with the regulations, which the staff would evaluate during its review of the License Application. As discussed in response to Comment 1, presenting an example methodology in an ISG does not imply a preference for that method in licensing, and does not restrict the ability of an applicant to use an alternative method.

No changes were made to the ISG as a result of this comment.

(e) In the commenter's view, the specific methodology proposed in the draft ISG–01 lacks both precedent and scientific support. The commenter raises the concern that applying technical analysis to seismic events with probability of exceedance lower than one in 10,000 per year to establish design bases is unprecedented, and that it would result in stringent design criteria. Staff disagrees with the commenter's concern because ISG–01 does not provide guidelines on the design bases or design criteria for the SSCs, of the GROA, at the repository, but provides one method for NRC staff to use in reviewing demonstration of compliance with the performance requirements for the SSCs in the PCSA. Additionally, the methodology proposed in the draft ISG has precedent in the mixed-oxide fuel fabrication facility at the Savannah River Site in South Carolina, where the applicant used a methodology similar to the one outlined in the draft ISG to demonstrate performance of the facility during seismic event sequences.

NRC disagrees with the comment that the methodology proposed in ISG–01 lacks scientific support. The proposed ISG–01 methodology to evaluate seismic performance of an SSC ITS is consistent with the performance-based methodology in the consensus standard ASCE 43–05. The methodology has the scientific support of the experts in the industry, and is not beyond the state-of-the-art for performance evaluation of SSCs for seismic hazard.

No changes were made to the ISG as a result of this comment.

14. *Comment.* Two commenters stated that NRC's decision to approve the use of the methodology that is similar to the one outlined in ASCE 43–05 appeared to be based on the method's recent use in licensing of the mixed-oxide fuel fabrication facility at the Savannah River Site. The MOX facility has a projected operating life of 20–40 years and it is assumed that the NRC operating license is for the same period of time. The commenters are concerned about the ability of ASCE 43–05 to appropriately account for uncertainty over the longer time-frame for Yucca Mountain, given that the preclosure operating period for the repository project could be 100 years or longer. The commenter adds that NRC should address this issue in the final staff guidance.

Response. The commenters raise a concern that the ISG–01 methodology, as suggested by ASCE 43–05, may not produce accurate results over a potential 100-year or longer operating life of the Yucca Mountain repository preclosure

operating period. The preclosure operating period of the Yucca Mountain repository may affect the ISG–01 methodology results in two ways: (i) In categorization of seismically initiated event sequences (*e.g.*, one chance in 10,000 of occurrence during the preclosure period specified in Part 63 for category 2 event sequences); and (ii) in development of the SSCs ITS seismic fragility curves, with potential changes in material properties resulting from degradation during the preclosure period. Staff believes that the uncertainties, considered in the seismic hazard and SSCs ITS fragility curves development, would sufficiently account for potential materials degradation during the preclosure period.

No changes were made to the ISG as a result of this comment.

15. *Comment.* Two commenters stated that the example provided in Appendix A raises questions as to whether NRC has adequately considered the geometric consequence of closely spaced, recurring, seismic events in determining the mean seismic hazard and related failure probability of an SSC ITS. HLWRS–ISG–01 and/or the YMRP may need to be revised to ensure that such characteristics of seismic hazard and related failure probability are appropriately considered in computing SSC ITS probability of failure during a seismic event.

Response. The example of Appendix A is based on a hypothetical seismic hazard curve selected only for illustrative purpose. However, for the development of the Yucca Mountain site-specific mean seismic hazard curves (Reference, Section 6.4), DOE's current approach evaluates the potential of closely spaced, recurring, seismic events by considering simultaneous multiple ruptures on parallel dipping faults, and increasing the ground motion parameters for a given probability of exceedance value. Since the effects of the closely spaced, recurring, seismic events are considered in the seismic hazard curve, staff believes that the ISG–01 methodology would result in an appropriate value of the failure probability of an SSC ITS, and that ISG–01 or the YMRP need not be revised.

[Reference: Civilian Radioactive Waste Management System, Management and Operating Contractor (CRWMS, M&O), 1998, Probabilistic Seismic Hazard Analyses for Fault Displacement and Vibratory Ground Motion at Yucca Mountain, Nevada (I. G. Wong and J. C. Stepp, coordinators), report prepared for U. S. Geological Survey, 3 Volumes]

No changes were made to the ISG as a result of this comment.

16. *Comment.* It is unclear to the commenter whether the guidance directs NRC staff to use the suggested methodology or merely offers an alternative among possible methods. To reduce uncertainty, the commenter suggests that it would be helpful if NRC provided explicit guidance as to how the selection of an appropriate methodology would be made, and when, if at all, a given methodology might be unacceptable for use. The commenter believes that the discretion in choice of methods appears to introduce unwarranted ambiguity and uncertainty.

Response. An ISG provides guidance to NRC staff on suggested methodologies to use during the review of a potential license application, and do not imply a preferred methodology that an applicant must use. The review approach in an ISG provides a framework for staff to conduct an efficient review, consistent with regulatory requirements. DOE has the option of proposing alternative methodologies to comply with the regulations, which the staff would evaluate during its review of the License Application. Methodologies that demonstrate compliance with the regulations, and have adequate technical bases, would be acceptable for staff review.

No changes were made to the ISG as a result of this comment.

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Dated at Rockville, Maryland, this 22nd day of September 2006.

For the Nuclear Regulatory Commission.

N. King Stablein,

Chief, Project Management Section B, Division of High-Level Waste Repository Safety, Office of Nuclear Material Safety and Safeguards.

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NUCLEAR REGULATORY COMMISSION

Notice of Availability of Draft Interim Staff Guidance Document HLWRS–ISG–02, Preclosure Safety Analysis—Level of Information and Reliability Estimation

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of availability.

FOR FURTHER INFORMATION CONTACT: Jon Chen, Project Manager, Project Management Section B, Division of High-Level Waste Repository Safety, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20005–0001. *Telephone:* (301) 415–5526; *fax number:* (301) 415–5399; *e-mail: jcc2@nrc.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction

The Yucca Mountain Review Plan (YMRP) (July 2003, NUREG–1804, Revision 2) provides guidance for U.S. Nuclear Regulatory Commission (NRC) staff to evaluate a U.S. Department of Energy license application for a geologic repository. NRC has prepared Interim Staff Guidance (ISG) to provide clarifications or refinements to the guidance provided in the YMRP. NRC is soliciting public comments on Draft HLWRS–ISG–02, which will be considered in the final version or subsequent revisions to HLWRS–ISG–02.

II. Summary

The purpose of this notice is to provide the public with an opportunity to review and comment on draft HLWRS-ISG–02, which is to supplement the YMRP for the NRC staff review of design and operation information and reliability estimates required for the preclosure safety analysis. This ISG supplements sections 2.1.1, 2.1.1.2, 2.1.1.4, 2.1.1.6, and 2.1.1.7 of the YMRP. This guidance also provides examples that illustrate commonly used approaches for estimating reliability and the level and types of supporting design and operation information that would be necessary for structures, systems, and components (SSCs) at the geologic repository operations area. A sufficient level of information and adequate technical bases for reliability estimates are needed to demonstrate compliance with the performance objectives in *Code of Federal Regulations,* Title 10, Part 63, Section 63.111 (10 CFR 63.111).