

**DEPARTMENT OF ENERGY****Office of Civilian Radioactive Waste Management****10 CFR Part 960****General Guidelines for the Recommendation of Sites for Nuclear Waste Repositories**

**AGENCY:** Office of Civilian Radioactive Waste Management, Department of Energy.

**ACTION:** Notice of proposed rulemaking and public hearing.

**SUMMARY:** The Department of Energy, Office of Civilian Radioactive Waste Management, today proposes to amend its General Guidelines for the Recommendation of Sites for Nuclear Waste Repositories. The DOE is proposing these amendments to clarify and focus the Guidelines to be used in evaluating the suitability of the Yucca Mountain site in Nevada for development as a repository. This proposal would provide that a total system assessment of the performance of a proposed site-specific repository design within the geologic setting of Yucca Mountain would be compared to the applicable regulatory standards to determine whether this site is suitable for development as a repository.

**DATES:** Written comments (8 copies and, if possible, a computer disk) on the proposed rule must be received by the Department on or before February 14, 1997. Oral views, data and arguments may be presented at a public hearing which is scheduled for the afternoon (12:30 p.m. to 4:30 p.m.) and evening (6 p.m. until there are no longer persons requesting an opportunity to speak) of January 23, 1997. Requests to speak at the hearing should be submitted in writing or by telephone at (800) 967-3477 to the Department no later than 4:30 P.M. on January 17, 1997. The length of each oral presentation is limited to five minutes. The DOE requests public comments only on the amendatory language in this notice and will not consider comments on the current regulation in this rulemaking proceeding.

**ADDRESSES:** Written comments (8 copies) and requests to speak at the public hearing should be addressed to April V. Gil, U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Office, PO Box 98608, Las Vegas, NV 89193-8608, or provided by electronic mail to 10CFR960@notes.ymwp.gov. The public hearing will be held at the following

location: University of Nevada, Las Vegas, 4505 Maryland Parkway, Moyer Student Union, Second Level, Lounge #201, Las Vegas, Nevada. Copies of transcripts from the hearing, written comments, and documents referenced in this Notice may be inspected and photocopied in the Yucca Mountain Science Center, 4101B Meadows Lane, Las Vegas, Nevada, (702) 295-1312, and the DOE Freedom of Information Reading Room, Room 1E-190, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC, (202) 586-6020, between the hours of 8:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays. For more information concerning public participation in this rulemaking see the "Opportunity for Public Comment" section of this proposed rule.

**FOR FURTHER INFORMATION CONTACT:** April V. Gil, U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Yucca Mountain Site Characterization Office, PO Box 98608, Las Vegas, NV 89193-8608, (800) 967-3477.

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**I. Background****A. The Law**

The Nuclear Waste Policy Act of 1982 (hereinafter referred to as the 1982 NWPA), signed into law on January 7, 1983, established a Federal policy and the Department of Energy (DOE) responsibility for the disposal of spent nuclear fuel and high-level radioactive waste in geologic repositories. It established the Office of Civilian Radioactive Waste Management (OCRWM) to carry out these DOE responsibilities, subject to repository licensing by the Nuclear Regulatory

Commission (NRC) and environmental protection standards set by the Environmental Protection Agency (EPA). The 1982 NWPA provided a process and schedule for siting two mined geologic repositories, and the statutory framework by which the DOE would screen, characterize, and select candidate sites. Section 112, "Recommendation of Candidate Sites for Site Characterization," of the 1982 NWPA required the DOE to establish general guidelines for recommendation of sites for repositories (the Guidelines). Section 112(a) required the DOE to "issue general guidelines for recommendation of sites for repositories," following consultation with the Council on Environmental Quality, the Administrator of the EPA, the Director of the Geological Survey, interested Governors, and the concurrence of the NRC. This section also provided that "such guidelines" may be revised from time to time.

The 1982 NWPA provided that the Guidelines would be used by the DOE to identify and nominate at least five sites in different geologic media as suitable for characterization. As part of this screening process, section 112(b) required the Secretary to recommend three of these sites to the President for characterization to determine their suitability for development as a repository.

Section 113, "Site Characterization," of the 1982 NWPA provided that the DOE was to carry out site characterization activities beginning with the candidate sites that had been approved under section 112(b) and that were located in various geologic media. Section 113(b) required the DOE to develop and submit to the Governor of the State, or governing body of the affected Indian tribe, a general plan describing the activities to be conducted in characterizing that site and identifying the criteria, developed pursuant to section 112(a), that would be used to determine the suitability of each site for the location of a repository.

Section 114, "Site Approval and Construction Authorization," of the 1982 NWPA provided that upon completion of public hearings in the vicinity of each site and completion of site characterization at each site, a single site could be recommended to the President for development as a repository. The 1982 NWPA provided that this recommendation by the Secretary to the President was to be accompanied by a final Environmental Impact Statement (EIS) in accordance with the requirements of the National Environmental Policy Act (NEPA), as modified by section 114(f) of the 1982

NWPA. If the recommendation was approved and the designation of the repository site became effective, the DOE was to submit a license application to the NRC for authorization to construct the repository at the designated site.

The 1987 amendments to the 1982 NWPA (the 1982 NWPA, as amended, is hereinafter referred to as the NWPA), provided that site characterization under section 113 and site approval under section 114 could proceed only at the Yucca Mountain site. Section 160 of the NWPA required the DOE to terminate site-specific activities at the other two candidate sites.

#### *B. Development and Application of the Guidelines*

To implement section 112(a) of the 1982 NWPA, the DOE published the proposed "General Guidelines for the Recommendation of Sites for Nuclear Waste Repositories," for review and comment on February 13, 1983 (48 FR 5670). The DOE published the final version of the Guidelines on December 6, 1984 (49 FR 47714), after considering public comments, consulting with the designated agencies, and receiving the concurrence of the NRC, as required by the 1982 NWPA.

The NRC concurred on the Guidelines after the DOE agreed to changes that closely linked the Guidelines to the NRC regulatory requirements of 10 CFR part 60 (49 FR 9650). In response to comments requesting closer alignment of the Guidelines to the EPA and the NRC requirements, the DOE stated that,

"In the event of a conflict between the Guidelines and either 10 CFR part 60 (the NRC regulations) or 40 CFR Part 191 (the EPA regulations), these NRC and EPA regulations will supersede the siting guidelines and constitute the operative requirement in any application of the guidelines." (49 FR 47721)

Consistent with section 112(b) of the 1982 NWPA, the DOE used the Guidelines in nominating five sites as suitable for characterization and in recommending to the President the three sites to be characterized as candidate sites for the first repository. On May 28, 1986, the President approved the three sites recommended for characterization, including the Yucca Mountain site. The 1987 amendments to the 1982 NWPA required the DOE to characterize only the Yucca Mountain site, and to terminate site-specific activities at all other sites.

In accordance with section 113(b) of the NWPA, the DOE prepared a Site Characterization Plan (the SCP) (1) for characterizing the Yucca Mountain

site.<sup>1</sup> The SCP included a description of how the DOE proposed to apply the Guidelines within the scope of the planned site characterization program. The applicability of certain comparative provisions in the Guidelines as a result of the 1987 amendments to the 1982 NWPA was explained in the SCP. The DOE stated that the provision in the Guidelines for comparative evaluations of performance (10 CFR 960.3-1-5) was no longer applicable. The DOE also stated that the provision in 10 CFR 960.5-1(a)(3), the preclosure system guideline for Ease and Cost of Siting, Construction, Operation, and Closure, for comparative evaluation of costs relative to other siting options was no longer applicable.

Although the SCP describes how the DOE would apply the Guidelines during site characterization to evaluate the site in light of the 1987 amendments, a number of entities indicated that they remained unclear as to the DOE's future application of the Guidelines. Because of the continuing confusion in this regard, and because section 112(a) of the NWPA, unchanged from the 1982 NWPA, and the Guidelines themselves contemplate that the DOE may revise the Guidelines from time to time, the DOE instituted an ongoing dialogue with external parties about the Guidelines.

In October 1993, the DOE briefed the representatives of the affected units of local government and the State of Nevada on its plans for activities related to site suitability evaluation. The members of this group noted that because the development of the Guidelines received broad public exposure through publication in the Federal Register, the DOE's review of the Guidelines also should receive broad public exposure. In response, the DOE published a Notice of Inquiry on April 25, 1994 (59 FR 19680) eliciting the views of the public on the appropriate role of the Guidelines in the evaluation of site suitability at Yucca Mountain. The DOE then conducted a public workshop on May 21, 1994, in Las Vegas, Nevada, to discuss the Guidelines and other issues related to the process for the evaluation of site suitability. The DOE also provided the opportunity for the public to submit written comments. The comment period ended on June 24, 1994.

Following the public meeting and the close of the public comment period, and after consideration of the comments

received, the DOE published a notice in the Federal Register on August 4, 1994 (59 FR 39766), announcing, that it would continue to use the Guidelines in 10 CFR part 960, as currently written and as explained in the SCP. The detailed rationale for concluding that the existing Guidelines "should not be amended at this time," was published in a notice in the Federal Register on September 14, 1995 (60 FR 47737). For reasons stated below, the DOE has now determined that the Guidelines should be amended.

## **II. Description of Proposed Action**

### *A. General Discussion*

The DOE is proposing these amendments to clarify and focus the Guidelines to be used in evaluating the suitability of the Yucca Mountain site for development as a repository. The amendments would concentrate the regulatory review on the analyses of overall repository performance. This would enhance the ability of the DOE to provide the public a more understandable conclusion about the suitability of the Yucca Mountain site for development as a repository. To provide this focus, a new subpart would be added to govern the evaluation of the Yucca Mountain site. Other sections of the Guidelines would be revised only as needed to make them consistent with the new subpart. The Guidelines applicable to site screening and comparisons will be preserved should they be needed in the future.

As detailed in the Background section of this Notice, section 112 of the NWPA describes the steps to be taken during site screening and prior to site characterization. The general guidelines required by section 112(a) were developed in 1983 and 1984 when the DOE had only a general understanding of geologic disposal and a mandate to use the general guidelines to screen sites in various geologic media. The DOE then formulated a generic set of guidelines to apply throughout the entire siting process that could be applied to any site, in any type of host rock, and in any geohydrologic setting.

As the DOE recognized in the December 6, 1984, Federal Register notice publishing the Guidelines (49 FR 47714), the decision to recommend sites for the development of repositories must include analyses of expected repository performance. However, because the comparison of characterized sites was then the focal point in the final recommendation decision, the contribution of engineered barriers to the ability of a repository system at each site to contain radioactive waste was

<sup>1</sup> The documents mentioned followed by a number enclosed in parenthesis are fully identified in III. References. Documents are numbered only when first referenced.

minimized (49 FR 47714, 47729). The DOE response to comments that stressed the importance of using system-analysis techniques, rather than treating each factor (e.g., geohydrology) independently, was that "the final comparisons of the sites are to be based on the system guidelines" (49 FR 47714, 47732). The DOE also explained that Part 960 consisted of general guidelines and that site-specific considerations were not appropriate at that time (49 FR 47714, 47734). The DOE has decided that it is now time for a site-specific evaluation of overall system performance at Yucca Mountain.

Initially, the DOE planned a broad characterization program at Yucca Mountain to ensure that all important scientific and technical issues would be identified and addressed. The DOE recognized that the iterative nature of site characterization would drive the broad-based plan into a more narrowly focused program. Section 113c of the NWPA provides that the DOE may conduct only such site characterization activities as it determines are necessary to evaluate the suitability of Yucca Mountain for submitting a construction authorization application to the NRC and to comply with the National Environmental Policy Act of 1969. That Congress intends the DOE to focus the work at Yucca Mountain on only that which is necessary to determine site suitability was recently reinforced in the Conference Report on the Fiscal Year 1996 Energy and Water Development Appropriations Act, H.R. Rep. No. 293, 104th Cong., 1st Sess. 68 (1995). In the Conference Report the conferees directed the Department to refocus the repository program on completing the core scientific activities at Yucca Mountain and provided that the Department's goal should be to collect the scientific information needed to determine the suitability of the Yucca Mountain site.

On June 12, 1996, OCRWM released its revised Program Plan (2) which addressed the direction of Congress in the Fiscal Year 1996 Appropriation legislation. It also recognized the great deal of progress made in the evaluation and understanding of the Yucca Mountain site since implementing the Civilian Radioactive Waste Management Program Plan (3), published in December 1994. Consistent with the policy direction from Congress, the revised Program Plan explained that as part of Fiscal Year 1996 implementation of the restructured repository program, OCRWM would propose amending the Guidelines to provide a more efficient and understandable process for evaluating the Yucca Mountain site. The

revised Program Plan was endorsed in the Conference Report on the Energy and Water Development Appropriations Act, 1997, H.R. Rep. No. 782, 104th Cong., 2d Sess. 82 (1996), by the conferees directing that the appropriated funds be used in accordance with the revised Program Plan.

Based on the DOE's accumulated knowledge, and significantly enhanced understanding of the Yucca Mountain site and geologic disposal, the DOE has now determined that a system performance assessment approach provides the most meaningful method for evaluating whether the Yucca Mountain site is suitable for development as a repository. The performance assessments (4-6) conducted to date have consistently driven the DOE to focus its evaluation of the Yucca Mountain site on those aspects most important to predicting how the overall system will perform in isolating and containing waste.

The DOE now understands that only by assessing how specific design concepts will work within the natural system at Yucca Mountain, and comparing the results of these assessments to the applicable regulatory standards, can the DOE reach a meaningful conclusion regarding the site's suitability for development as a repository. The proposed amendments to the Guidelines would require a comprehensive evaluation focused on whether a geologic repository at the Yucca Mountain site would adequately protect the public and the environment from the hazards posed by high-level radioactive waste and spent nuclear fuel. This approach would include consideration of technical factors in an integrated manner within the system postclosure and preclosure qualifying conditions. Discrete, independent findings on individual technical factors would not be required.

The proposed amendments would focus the site suitability evaluation of Yucca Mountain on a determination of whether the expected system performance will meet both the site-specific public health and safety standards that the EPA is establishing under section 801 of the Energy Policy Act of 1992 and the applicable NRC regulations. Compliance with these requirements is the core of the approach proposed as subpart E to part 960. The proposed amendments are being submitted to the NRC and the DOE will obtain its concurrence in accordance with 10 CFR 960.1.

## 1. Congressional Direction

Since the DOE promulgated the Guidelines, Congress has made major changes to the framework for developing a geologic repository. In 1987, the NWPA designated Yucca Mountain as the only potential repository site to be characterized, thereby eliminating the comparison of multiple characterized sites. Although the DOE did not revise the Guidelines at that time, it recognized in its SCP that not all of the technical factors cited in the Guidelines would be equally significant to the evaluation of the Yucca Mountain site.

In section 801 of the Energy Policy Act of 1992, Congress directed the EPA to promulgate new site-specific health and safety standards for protecting the public from radioactive releases at a repository at Yucca Mountain. These standards will replace the general environmental standard for geologic repositories (40 CFR part 191) for application at the Yucca Mountain site. In the Energy Policy Act of 1992, Congress also directed the NRC to revise its regulations to be consistent with the new EPA standards.

In the Conference Report on the Fiscal Year 1996 Energy and Water Development Appropriations Act, Congress directed the Program to focus on only those activities necessary to assess the performance of a repository at the Yucca Mountain site and to collect the scientific information needed to determine the site's suitability (H.R. Rept. No. 293, 104th Cong., 1st Sess. 68 (1995)). The OCRWM responded by revising its Program Plan. Part of the revised Program Plan approach is the development of a proposal to amend the Guidelines for site-specific application at the Yucca Mountain site. Congress indicated its approval of the revised Program Plan in the Conference Report on the Energy and Water Development Appropriations Act, 1997, H.R. Rep. No. 782, 104th Cong., 2d Sess. 82 (1996), by directing "that the appropriated funds be used in accordance with the Civilian Radioactive Waste Management Draft Program Plan issued by the Department in May 1996 \* \* \*".

The DOE is proposing these amendments now in response to the Congressional direction provided as part of the Fiscal Year 1996 appropriation process. The focused approach in this proposal is part of the revised Program Plan that was developed based on Congressional guidance and the technical understanding gained from characterization work performed at Yucca Mountain.

## 2. Understanding Gained

The DOE has been considering Yucca Mountain as a potential site for a repository since 1978. Formal site characterization studies began following the publication of the SCP in December 1988. The DOE has recently produced results in four major areas fundamental to advancing the ability to evaluate this site, and geologic disposal, to the point that a system approach is now appropriate. These four areas are: (1) Analysis and integration of data collected from the surface-based testing and regional studies; (2) examination of the potential repository horizon made possible by the excavation of the Exploratory Studies Facility (ESF); (3) the site-specific conceptual design of the engineered facilities, both surface and underground; and (4) performance assessment analyses.

The DOE began collecting surface-based test data at the site and from the surrounding region in the late 1970s, as described in the Environmental Assessment (7) and the SCP. In recent years, project scientists have undertaken a concerted effort to analyze and integrate these data in order to formulate a better understanding of the site. Several reports (8–16) issued in 1996 have significantly contributed to that understanding. These analyses involve compiling the data collected and developing process models to describe each of the characteristics of the site. Further, data integration is proceeding from cross-disciplinary discussions among the scientists and through consultations with experts outside of the project. The result is a rapidly evolving understanding of the natural system at the site and how the natural system would function as part of a repository system.

Construction of the ESF has provided the opportunity for direct underground observations and testing. Data obtained from the potential repository host rock, together with the analysis of data from surface-based studies (17–20), have significantly improved the understanding of site conditions. For example, the rock quality at the repository level generally confirms the assumptions upon which the projected area for the statutory limit of 70,000 metric tons of heavy metal was based. No new major faults have been found and some faults, when observed underground, are less structurally significant than expected from surface-based studies.

The DOE has now advanced its site-specific conceptual design (21) to focus on the surface and subsurface facilities, the waste package, and a concept of

operations to describe how an operational repository would function at Yucca Mountain. This focus allows project engineers to develop process models to explicitly analyze such factors as potential repository materials and layout, the thermal load imposed on the system by waste emplacement, and the performance of the engineered barrier system.

The models needed to evaluate repository system performance at the Yucca Mountain site continue to become more detailed and more representative of site conditions and engineered system behavior. Performance assessments are analyses used to predict or estimate the behavior of a system based on a given set of conditions. The assessments take into consideration the inherent uncertainties in the data and models used, and permit the evaluation of the significance of these uncertainties in predicting performance for thousands of years into the future. Performance assessments called "Total System Performance Assessments," were conducted in 1991, 1993, and 1995, and another iteration is underway. The amount of detail in the models and the amount of data available have increased with each iteration.

The results of these performance assessments describe what the repository system will be capable of and how it will function through time. For example, the performance assessments have confirmed that among the most important characteristics of the Yucca Mountain site and its suitability for repository development are the amount of water, the flow pathways, and the rate at which water flows through and away from the repository area. The repository system performance models will enable the DOE to predict, with greater confidence, the way water moves through the site and how this affects repository performance.

By evaluating, through system performance assessments, the conclusions reached from analysis and integration of surface-based test data, the observations and testing in the ESF, and the site-specific advanced conceptual design, the DOE will be able to reach informed conclusions regarding the suitability of the site for development as a repository.

Information on the general approach that the DOE will take in performing this work is available in the 1996 Revision I to the Program Plan. More specific information on the nature and extent of changes to previously planned activities is available in the Progress Reports that the DOE issues semiannually pursuant to section 113(b)(3). The most recently issued

Progress Report (22) was distributed on October 8, 1996.

## B. Proposed Revisions

Because section 160 of the NWPA provides that Yucca Mountain is to be the sole site to be characterized by the DOE under section 113 of the NWPA, the proposed amendments would establish a discrete set of site-specific guidelines for evaluating the suitability of Yucca Mountain for development as a repository. The site-specific guidelines proposed for Yucca Mountain would be added to part 960 in a new subpart E. Subpart B, the "Implementation Guidelines," would be amended to reflect the adoption of the new subpart E and provide the procedure and basis for applying the new guidelines in subpart E. Subparts C and D would be retained for potential future application in the event that it is determined that Yucca Mountain is not suitable for development as a repository and other sites are identified as potential candidate sites for site characterization.

The proposed subpart E would focus on the ability of a repository system at the Yucca Mountain site to protect public health and safety by adequately containing and isolating waste, rather than on evaluating each technical aspect of the site independently. This new subpart would represent a change for evaluating Yucca Mountain from the Guideline's general site screening and comparison approach to a site-specific system performance approach.

The results of integrated assessments of system performance in Subpart E would provide a more meaningful indicator of the ability of a repository to protect public health and safety, before and after permanent closure, than would separate evaluations of individual site characteristics. For example, a geologic structural feature that provides a fast pathway for ground-water flow through the mountain may seem a detriment when considered alone but, when considered in conjunction with a specific repository design, may act beneficially by channeling flow away from the waste and thus reducing the potential for ground-water contact with the waste packages.

In conducting performance assessments, the DOE uses computer and mathematical models to evaluate the ability of the geologic repository to contain and isolate high-level radioactive waste. This may include the use of mathematical models of site processes such as water flow in the geologic setting and engineering processes such as corrosion of the waste packages as part of the assessment of

overall repository system performance. To evaluate potential radiation exposure to the public, performance assessments use biosphere models that describe the pathways by which individuals in the vicinity of Yucca Mountain might receive radiation doses. Performance assessments are iterative, so that insights gained from each assessment, together with new scientific and engineering information and improvements in the models themselves, are used to guide subsequent assessments.

The general provisions of subpart A and the implementation guidelines of subpart B would be revised to reflect the addition of the Yucca Mountain site-specific guidelines in subpart E, and to be consistent with the NWPA. The proposed revisions would preserve the existing portions of the Guidelines that are applicable to site screening and to comparing sites in varied geologic settings as provided in section 112(a) of the NWPA. Additional revisions would be incorporated throughout the Guidelines only as needed to explicitly accommodate the addition of subpart E.

Consistent with the existing structure of the Guidelines, the site-specific guidelines proposed in subpart E would include postclosure and preclosure system guidelines. The postclosure system and preclosure radiological safety system guidelines proposed as "qualifying conditions" in subpart E would be essentially the same as their counterparts in subparts C and D, except that these amendments would recognize the changes in the regulatory standards mandated by the Energy Policy Act of 1992. Because 40 CFR part 191 is no longer the applicable standard for the Yucca Mountain site, the new system performance guidelines would apply the EPA's final rule for site-specific public health and safety standards when they are issued and in effect. The preclosure system guideline would also apply the NRC regulations applicable to Yucca Mountain during the preclosure period.

The original suites of technical guidelines in subparts C and D consider characteristics that might be important at any type of site in any geologic or hydrologic setting and provide a basis for comparing sites. Corresponding technical guidelines are not proposed in subpart E. The performance assessments in subpart E will consider all of the significant technical aspects of the site and demonstrate through sensitivity analyses which characteristics are most important.

The preclosure system guidelines in subpart D, other than the one for radiological safety (§ 960.5-1(a)(1)), were originally intended to provide a

broad basis for site evaluation and for comparisons among multiple characterized sites, prior to site recommendation under the 1982 NWPA. Sections 113 and 160 of the NWPA now direct the DOE to characterize only the Yucca Mountain site to determine its suitability for development as a repository. In the absence of a need to consider siting alternatives, the DOE is not specifying separate system guidelines for environmental, socioeconomic, and transportation considerations in subpart E, as it did in § 960.5-1(a)(2) of subpart D. The DOE will not require or make findings with regard to such considerations as part of any evaluation of the suitability of the Yucca Mountain site for recommendation. The provisions of subpart D, § 960.5-1(a)(3), relating to the feasibility of constructing, operating, and closing a repository at the Yucca Mountain site also are not incorporated in subpart E. Absent the need to develop a broad basis for comparative evaluations, such considerations are most appropriately dealt with as part of the repository design process and in the evaluation of the performance of any design concept with respect to the radiological protection requirements of the preclosure system guideline in subpart E.

The requirement in § 960.5-1(a)(2) of subpart D to adequately protect the public and the environment from hazards posed by the disposal of radioactive waste is the essence of the preclosure system guideline proposed as § 960.6-2. Separately, as part of the Environmental Impact Statement that will be prepared pursuant to section 114 of the NWPA, the DOE will thoroughly explore potential impacts to the environment as a result of developing a repository at Yucca Mountain. The DOE will consider the information presented in the Environmental Impact Statement, and the results of its evaluation of the Yucca Mountain site under subpart E, in making any recommendation that the site be developed.

#### 1. General Provisions (subpart A)

This section of the Guidelines consists of the statement of applicability of the Guidelines and the definitions. Revisions proposed to this section would establish the applicability of the new subpart E to the evaluation of the Yucca Mountain site for development as a repository while preserving the general comparative siting process originally defined in the Guidelines and would remove inconsistencies with the 1987 amendments to the 1982 NWPA and the Energy Policy Act of 1992. Revisions are proposed for some of the

definitions to make the terms consistent with the NWPA and to accommodate programmatic changes instituted since the Guidelines were written.

#### Section 960.1 Applicability

The statement of applicability would establish that these are the Guidelines developed in accordance with sections 112(a) and 113(b)(1)(A)(iv) of the NWPA. It is the intent of these amendments to continue to apply subparts C and D of 10 CFR part 960 as the General Guidelines providing "the primary criteria for the selection of sites in various geologic media" as required by section 112(a). The comparative aspects of the regulation would be preserved for use if the DOE ever needs to use the process to select other sites for characterization through a comparative screening process.

The proposed amendments would account for the 1987 amendments beginning with the insertion of the words "as amended" after "Nuclear Waste Policy Act of 1982" in the first sentence. Section 113(b)(1)(A)(iv) of the Act would also be referenced in the first sentence to indicate that these Guidelines would contain the criteria to determine the suitability of the candidate site for location of a repository. A new second sentence would be inserted to make explicit that subpart B explains the procedure and basis for applying the guidelines in subparts C, D, and E. The second sentence would now state that the Guidelines in subparts C and D will be used for comparative suitability evaluations made pursuant to section 112(b). The final phrase, "and any preliminary suitability determinations required by section 114(f)" would be deleted because this requirement was removed from section 114(f) by the 1987 amendments. This phrase would be replaced by a new fourth sentence stating that "Only subpart E will be used for evaluating the suitability of the Yucca Mountain site pursuant to section 113(b)(1)(A)(iv)."

These revisions would recognize that the EPA standards promulgated under 40 CFR part 191 no longer apply to the Yucca Mountain site. Section 801 of the Energy Policy Act of 1992 requires the EPA to issue site-specific public health and safety standards as "the only such standards applicable to the Yucca Mountain site." Therefore, the third sentence, stating that these guidelines are intended to complement the requirements set forth in the Act, 10 CFR part 60, and 40 CFR part 191, would be deleted. The fifth sentence is revised to more clearly state that the DOE recognizes NRC jurisdiction for the

resolution of differences between the guidelines and the NRC regulations. The sixth sentence would be deleted as unnecessary.

#### *Section 960.2 Definitions*

Revisions to the terms and definitions are proposed to reflect the legislative and programmatic changes since the Guidelines were originally written. The definition of the term "Act" would recognize the 1987 amendments in its use throughout the regulation. The terms "Application" and "Evaluation" would include references to subpart E for the Yucca Mountain site in addition to references to subparts C and D. The definition of "Closure" would include ramps to acknowledge the use of inclined ramps at Yucca Mountain in addition to vertical shafts. The term "Determination" would now apply to subparts C and D for purposes of decisions of suitability for site characterization, and to subpart E for purposes of decisions of suitability for repository development.

#### *2. Implementation Guidelines (subpart B)*

##### *Section 960.3 Siting provisions*

The implementation guidelines in subpart B establish the procedure and basis for applying the postclosure and preclosure guidelines of subparts C and D to the siting process when site recommendation for characterization is to be made from multiple candidate sites. In general, references to subpart E would be added to the implementation guidelines in subpart B wherever subpart C and D are mentioned to ensure consistency and clarity in the distinctions between the two sets of postclosure and preclosure guidelines. Subpart B would be revised only to the extent necessary to accommodate the insertion of subpart E into the regulation.

The first sentence of section 960.3 would be replaced by two sentences. The first would state that the guidelines of subpart B establish the procedure and basis for applying the guidelines in subparts C, D, and E. The new second sentence would explain that the guidelines of subparts C and D apply to comparative evaluations of multiple sites for suitability for characterization. The original second sentence would be revised to include the word comparative in reference to those parts of the siting process that require consideration of various settings and consultation with various affected units of government. A new final sentence would be added to explicitly state that the guidelines of subpart E apply to evaluations of the

suitability of the Yucca Mountain site for development as a repository.

Section 960.3-1 would be revised by replacing a phrase in the final sentence to clarify that § 960.3-1-5, Basis for Site Evaluations, establishes the basis for applying subparts C, D and E. Section 960.3-1-1 to § 960.3-1-4 requires the consideration of various site settings and types in precharacterization screening and describe the types of evidence needed at each step in the sequence of siting decisions. No changes are proposed to these sections because they are already consistent with the proposed amendments to the existing regulation and the proposed addition of subpart E.

Section 960.3-1-5 provides the basis for evaluations of individual sites and comparisons between and among sites. This section provides that the guidelines of subparts C and D apply to the screening and selection of sites through the recommendation of candidate sites for characterization. Because the NWA now requires that only the Yucca Mountain site be characterized and evaluated for suitability for development as a repository, the proposed amendment would refer to subpart E as the basis for this evaluation. This section would be divided into three subsections to make the following two distinctions. First, it would distinguish between evaluations of sites leading to recommendations for characterization and the evaluation of the Yucca Mountain site for development as a repository. Second, it would distinguish the basis for evaluating individual sites from the basis for comparing multiple sites.

The subsection heading "(a) General Provisions," is inserted at the beginning of the section. This newly designated subsection would consist of the first two sentences of § 960.3-1-5 with the following revisions. A proposed addition to the first sentence would specify that the evaluation of the suitability of the Yucca Mountain site for development as a repository would be based on the guidelines in subpart E. The second sentence, assigning primary significance to the postclosure guidelines, except during the screening of potentially acceptable sites (the first of the four decisions in the siting process sequence set forth in § 960.3-1-4), would exempt subpart E from this ranking of the guidelines. The guidelines were ranked to reflect the fundamental purpose of a repository to provide long-term isolation of radioactive waste and to facilitate comparisons of sites where some site attributes under the Guidelines may be similar. The ranking would not apply to

subpart E because it would serve no comparative purpose. To clarify this distinction between evaluating individual sites and ranking the guidelines for comparisons of multiple sites, the word "comparisons" would replace "evaluations" in the second sentence of subsection (a).

The subsection heading "(b) Site Evaluations," would be inserted before the third sentence in § 960.3-1-5 to create a new subsection containing the third through tenth sentences of this section revised as follows. This subsection would separate the process and basis for evaluating individual sites from the process for comparing multiple sites under the proposed subsection (c). The description of the arrangement of the Guidelines would now refer directly to subparts C and D where the system guidelines have corresponding technical guidelines. A sentence would be added for clarity, after the eighth sentence, stating that subpart E does not contain corresponding technical guidelines. This sentence is added because the proposed subpart E use of system guidelines would consider the full range of relevant site conditions embodied in any technical guidelines. The proposed system guideline approach of subpart E would not eliminate or disguise consideration of any specific characteristic of the Yucca Mountain site that may affect repository performance. Indeed, the relevant technical factors in subparts C and D would still be considered; but, rather than each being evaluated against a specific independent technical guideline, the factors would be considered for their role in the system's performance. The ninth (now tenth) sentence of this subsection would be revised to explain that subpart E would be used to evaluate the Yucca Mountain site. The final sentence would be revised to explain that disqualification of a site depends on findings made regarding the "applicable" qualifying or disqualifying conditions. For the characterization work at Yucca Mountain, the "applicable" conditions would be the qualifying conditions in § 960.6.

The subsection heading "(c) Site Comparisons," would be inserted before the eleventh sentence of § 960.3-1-5. The subsection would consist of the remainder of this section revised as follows. The first sentence would now include a specific reference to subparts C and D to avoid confusion with subpart E. The portion of the sentence referencing § 960.3-2-4, "performed to support the recommendation of sites for the development of repositories in § 960.3-2-4," would be deleted. This

deletion would recognize that § 960.3–2–4, “Recommendation of sites for the development of repositories,” would be revised to no longer include comparisons of characterized sites. The next sentence, defining the accessible environment, would be deleted because that term is already defined in § 960.2. The repetition of the definition is unnecessary and potentially confusing.

Section 960.3–2 addresses the four steps in the comparative siting process in §§ 960.3–2–1 through 960.3–2–4. Sections 960.3–2–1 through 960.3–2–3 address the three steps in the process that were completed before the 1987 amendments designated Yucca Mountain as the sole site to be characterized. Although these steps were successfully completed with regard to the Yucca Mountain site, they are still found in section 112 of the NWSA, and could possibly be used to evaluate another or other sites in the future. Therefore, no changes are proposed to these sections.

Section 960.3–2–4, “Recommendation of sites for the development of repositories,” establishes the process for the fourth and final step in the siting process. This section refers to multiple characterized candidate sites for the development of the first repository, or subsequent repositories. It would now recognize Yucca Mountain as the sole candidate site that may be recommended under section 114 of the NWSA. The title would be revised to “Recommendation of a site for the development of a repository.” The first sentence would now explain that the Yucca Mountain site shall be evaluated on the basis of the guidelines in subpart E. Because section 114 of the NWSA now provides only for the recommendation of the Yucca Mountain site if it is found suitable for development as a repository, the final sentence would refer specifically to the Yucca Mountain site and all references to other candidate sites would be deleted. If the Yucca Mountain site is found unsuitable, NWSA subsection 113(c)(3)(F) requires the Secretary to report to Congress recommendations for further action to assure the safe, permanent disposal of spent nuclear fuel and high-level radioactive waste, including the need for new legislative authority.

### 3. Yucca Mountain Site Guidelines (subpart E)

#### *Section 960.6 Yucca Mountain Site Guidelines*

The postclosure and preclosure system guidelines of subpart E would

each contain a single qualifying condition that the geologic repository at Yucca Mountain must meet in order for the site to be found suitable for development as a repository. The qualifying condition in both cases would provide that the geologic repository shall be capable of limiting radioactive releases as required by the site-specific standards to be promulgated by the EPA pursuant to the Energy Policy Act of 1992. The DOE would not reach a determination on the suitability of the Yucca Mountain site under these Guidelines in the absence of the final promulgation of those standards. Because the NRC must conform its regulations to the EPA standards, these guidelines also refer to the NRC regulations implementing those standards.

Section 960.6 would provide that a decision to recommend the site as suitable for development as a repository under the Guidelines must include compliance with both postclosure and preclosure system guidelines. The DOE would evaluate compliance with these guidelines by conducting performance assessments and then comparing the results of those assessments to the applicable standards and regulations.

In § 960.6–1, “Postclosure system guideline,” the DOE would recognize that a geologic repository at Yucca Mountain shall be evaluated against the site-specific EPA standards and the NRC regulations implementing them. The key differences between the postclosure guidelines under subpart C and this section would be that this section would not include technical guidelines and would require using the site-specific EPA standards being promulgated pursuant to section 801 of the Energy Policy Act of 1992 and the NRC regulations implementing those standards. Compliance with the postclosure system guideline in this section would be determined through a performance assessment that evaluates the ability of the repository system to allow for the containment and isolation of radioactive waste after permanent closure.

Section 960.6–2, “Preclosure radiological safety system guideline,” would provide for compliance with the EPA site-specific standards and the NRC radiation protection standards applicable during construction, operation and closure of the repository. The preclosure radiological safety system guideline in subpart D calls for compliance with 10 CFR parts 20 and 60, and 40 CFR part 191. This preclosure guideline would recognize

that the EPA site-specific standards, rather than 40 CFR part 191, apply to Yucca Mountain. It would also recognize the application of the requirements of 10 CFR part 20, “Standards for Protection Against Radiation,” which generally apply to licensed, operational nuclear facilities throughout the United States, and 10 CFR Part 60, “Disposal of High-Level Radioactive Wastes in Geologic Repositories,” or successor provisions. Thus, the main difference between the subpart D preclosure radiological safety system guideline and the preclosure evaluation conducted under this section is that this section would apply the Yucca Mountain site-specific EPA standards being developed pursuant to the Energy Policy Act of 1992.

### 4. Appendix III

#### *Appendix III—Application of the System and Technical Guidelines During the Siting Process*

The introductory text in this appendix would be amended by adding a single sentence to clearly establish that this appendix does not apply to the guidelines of Subpart E for the evaluation of the Yucca Mountain site for its suitability for development as a repository. The distinctions between lower-level and higher-level findings have been preserved for their use in the comparative siting process.

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#### IV. Opportunity for Public Comment

##### A. Participation in Rulemaking

Interested persons are invited to participate in this proposed rulemaking by submitting written data, views, or comments with respect to the subject set forth in this notice. The Department encourages the maximum level of public participation possible in this rulemaking. Individuals, coalitions, states or other government entities, and others are urged to submit written comments on the proposal. The Department also encourages interested persons to participate in the public hearing to be held at the time and place indicated at the beginning of this notice.

##### B. Written Comment Procedures

The DOE requests public comments only on the proposed amendatory language in this notice and will not consider comments on the current regulation in this rulemaking proceeding. Written comments (eight copies) should be identified on the outside of the envelope, and on the comments themselves, with the designation: "General Guidelines NOPR, Docket Number RW-RM-96-100" and must be received by the date specified at the beginning of this notice in order to be considered. In the event any person wishing to submit a written comment cannot provide eight copies, alternative arrangements can be made in advance by calling (702) 794-5578. Additionally, the Department would appreciate an electronic copy of the written comments to the extent possible. The Department is currently using WordPerfect 6.1 for Windows. All comments received on or before the date specified at the beginning of this notice and other relevant information will be considered by the DOE before final action is taken on the proposed rule. All comments submitted will be available for examination in the Rule Docket File in the Yucca Mountain Science Center in Las Vegas, Nevada, and the DOE's Freedom of Information Reading Room. In addition, a transcript of the proceedings of the public hearing will be filed in the docket. The transcript and additional material will be available by electronic mail at the following URL address: <http://www.ympp.gov>. Pursuant to the provisions of 10 CFR 1004.11 any person submitting information or data that is believed to be confidential, and which may be exempt by law from public disclosure, should submit one complete copy, as well as two copies from which the information claimed to be confidential has been deleted. The Department of Energy will make its own



determination of any such claim and treat it according to its determination.

### C. Public Hearing Procedures

The time and place of the public hearing are indicated at the beginning of this notice. The Department invites any person who has an interest in the proposed regulation or who is a representative of a group or class of persons which has an interest to make a request for an opportunity to make an oral presentation at the hearing. Requests to speak should be sent to the address or phone number indicated in the **ADDRESSES** section of this notice and be received by the time specified in the **DATES** section of this notice. The person making the request should briefly describe his or her interest in the proceedings and, if appropriate, state why that person is a proper representative of the group or class of persons that has such an interest. The person also should provide a phone number where they may be reached during the day. Each person selected to speak at a public hearing will be notified as to the approximate time that they will be speaking. They should bring eight copies of their oral statement to the hearing. In the event any person wishing to testify cannot meet this requirement, alternative arrangements can be made in advance by calling (702) 794-1322. The length of each presentation will be limited to five minutes, or based on the number of persons requesting to speak. Persons planning to speak should address their comments to the proposed amendatory language contained in this notice. The DOE will not consider testimony on the language in the current regulation in this rulemaking proceeding. A Department official will be designated to preside at the hearing. The hearing will not be a judicial or an evidentiary-type hearing, but will be conducted in accordance with 5 U.S.C. 553 and section 501 of the Department of Energy Organization Act. 42 U.S.C. 7191. At the conclusion of all initial oral statements, each person will be given the opportunity to make a rebuttal or clarifying statement. These statements will be given in the order in which the initial statements were made. Any further procedural rules needed for the proper conduct of the hearing will be announced by the Presiding Officer at the hearing. If the DOE must cancel the hearing, the DOE will make every effort to publish an advance notice of such cancellation in the Federal Register. Notice of cancellation will also be given to all persons scheduled to speak at the hearing. Hearing dates may be canceled

in the event no public testimony has been scheduled in advance.

### V. Compliance With the National Environmental Policy Act (NEPA)

The issuance of these amendments to the Guidelines is a preliminary decision making activity pursuant to section 112(d) and 113(d) of the NWPA and therefore does not require the preparation of an environmental impact statement pursuant to section 102(2)(C) of the NEPA or any other environmental review under section 102(2) (E) or (F) of the NEPA.

### VI. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, was enacted by Congress to ensure that small entities do not face significant negative economic impact as a result of Government regulations. The DOE certifies that the rule amending the Guidelines will not have a significant impact on a substantial number of small entities. The rule will not regulate anyone outside of the DOE. It merely articulates proposed considerations for the Secretary of Energy to undertake in determining whether the Yucca Mountain site is suitable to be recommended for development as a repository. Accordingly, no regulatory flexibility analysis is required under the Regulatory Flexibility Act.

### VII. Review Under the Paperwork Reduction Act

The DOE has determined that this proposed rule contains no new or amended recordkeeping, reporting, or application requirements, or any other type of information collection requirements subject to the Paperwork Reduction Act (Pub. L. 96-511).

### VIII. Review Under Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) generally requires Federal agencies to closely examine the impacts of regulatory actions on State, local, and tribal governments. Section 101(5) of Title I of that law defines a Federal intergovernmental mandate to include any regulation that would impose an enforceable duty upon State, local, or tribal governments, except, among other things, a condition of Federal assistance or a duty arising from participating in a voluntary federal program. Title II of that law requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and tribal governments, in the aggregate, or to the private sector, other than to the extent

such actions merely incorporate requirements specifically set forth in a statute. Section 202 of that title requires a Federal agency to perform a detailed assessment of the anticipated costs and benefits of any rule that includes a Federal mandate which may result in costs to State, local, or tribal governments, or to the private sector, of \$100 million or more. Section 204 of that title requires each agency that proposes a rule containing a significant Federal intergovernmental mandate to develop an effective process for obtaining meaningful and timely input from elected officers of State, local, and tribal governments.

This proposed rule is not likely to result in the promulgation of any final rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments in the aggregate, or by the private sector, of \$100 million or more in any one year. Further, the Guidelines in 10 CFR part 960 and the proposed amendments to part 960 in this rule largely incorporate requirements specifically provided in sections 112 and 113 of the NWPA. Moreover, sections 112, 113 and 114 of the NWPA provide for meaningful and timely input from elected officials of State, local and tribal governments. Accordingly, no assessment or analysis is required under the Unfunded Mandates Reform Act of 1995.

### IX. Review Under Executive Order 12612

Executive Order 12612, 52 FR 41685, requires that regulations, rules, legislation, and any other policy actions be reviewed for any substantial direct effect on States, on the relationship between the Federal government and the States, or in the distribution of power and responsibilities among various levels of government. If there are substantial effects, then the Executive Order requires a preparation of a Federalism assessment to be used in all decisions involved in promulgating and implementing policy action. The rule proposed in this notice will not have a substantial direct effect on the institutional interests or traditional functions of the States. Accordingly, no assessment or analysis is required under Executive Order 12612.

### X. Review Under Executive Order 12866

Section 1 of Executive Order 12866 ("Regulatory Planning and Review"), 58 FR 51735, establishes a philosophy and principles for Federal agencies to follow in promulgating regulations. Section 1(b)(9) of that Order provides:

"Wherever feasible, agencies shall seek views of appropriate State, local, and tribal officials before imposing regulatory requirements that might significantly or uniquely affect those governmental entities. Each agency shall assess the effects of Federal regulations on State, local, and tribal governments, including specifically the availability of resources to carry out those mandates, and seek to minimize those burdens that uniquely or significantly affect such governmental entities, consistent with achieving regulatory objectives. In addition, agencies shall seek to harmonize Federal regulatory actions with regulated State, local and tribal regulatory and other governmental functions."

Section 6 of Executive Order 12866 provides for a review by the Office of Information and Regulatory Affairs (OIRA) of a "significant regulatory action," which is defined to include an action that may have an effect on the economy of \$100 million or more, or adversely affect, in a material way, the economy, competition, jobs, productivity, the environment, public health or safety, or State, local, or tribal governments. The Department has concluded that this rule is not a significant regulatory action that requires a review by the OIRA.

#### XI. Review Under Executive Order 12875

Executive Order 12875 ("Enhancing Intergovernmental Partnership"), provides for reduction or mitigation, to the extent allowed by law, of the burden on State, local and tribal governments of unfunded Federal mandates not required by statute. The analysis under the Unfunded Mandates Reform Act of 1995, above, satisfies the requirements of Executive Order 12875. Accordingly, no further analysis is required under Executive Order 12875.

#### XII. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, "Civil Justice Reform," 61 FR 4729 (February 7, 1996), imposes on Executive agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; and (3) provide a clear legal standard for affected conduct rather than a general standard and promote simplification and burden reduction. With regard to the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive

agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. The DOE has completed the required review and determined that, to the extent permitted by law, the proposed regulations meet the relevant standards of Executive Order 12988.

#### List of Subjects in 10 CFR Part 960

Environmental protection, Geologic repositories, Nuclear energy, Nuclear materials, Radiation protection, Waste disposal.

Issued in Washington, DC, on December 9, 1996.

Daniel A. Dreyfus,

*Director, Office of Civilian Radioactive Waste Management.*

For the reasons set out in the preamble, part 960 of title 10 of the Code of Federal Regulations is proposed to be amended as follows.

### PART 960—GENERAL GUIDELINES FOR THE RECOMMENDATION OF SITES FOR NUCLEAR WASTE REPOSITORIES

1. The authority citation for 10 CFR part 960 is revised to read as follows:

Authority: 42 U.S.C. 2011 *et seq.*, 42 U.S.C. 5801 *et seq.*, 42 U.S.C. 7101 *et seq.*, 42 U.S.C. 10101 *et seq.*

#### Subpart A—General Provisions

2. Section 960.1 is revised to read as follows:

##### § 960.1 Applicability.

These guidelines were developed in accordance with the requirements of sections 112(a) and 113(b)(1)(A)(iv) of the Nuclear Waste Policy Act of 1982, as amended, for use by the Secretary of Energy in evaluating the suitability of sites for the development of repositories. Subpart B of this part explains the procedure and basis for applying the guidelines in subparts C, D and E of this part. The guidelines in subparts C and D of this part will be

used for comparative suitability evaluations and determinations made pursuant to section 112(b). Only subpart E of this part will be used for evaluating the suitability of the Yucca Mountain site pursuant to section 113(b)(1)(A)(iv). In the event of an inconsistency between the guidelines and the applicable NRC regulations, the NRC regulations would apply. The DOE contemplates revising the guidelines from time to time, as permitted by the Act, to take into account revisions made to the NRC regulations and to otherwise update the guidelines as necessary. The DOE will submit the revisions to the NRC and obtain its concurrence before issuance.

3. Section 960.2 is amended by revising the definitions of "Act," "Application," "Closure," "Determination," and "Evaluation," as follows:

##### § 960.2 Definitions.

\* \* \* \* \*

*Act* means the Nuclear Waste Policy Act of 1982, as amended.

\* \* \* \* \*

*Application* means the act of making a finding of compliance or noncompliance with the qualifying or disqualifying conditions specified in the guidelines of subparts C and D of this part, in accordance with the types of findings specified in appendix III to this part, or with the qualifying conditions specified in the guidelines of subpart E of this part.

\* \* \* \* \*

*Closure* means the final closing of the remaining open operational areas of the underground facility and boreholes after termination of waste emplacement, culminating in the sealing of shafts and ramps.

\* \* \* \* \*

*Determination* means a decision by the Secretary that a site is suitable for characterization consistent with the guidelines of subparts C and D of this part or that the Yucca Mountain site is suitable for development as a repository consistent with subpart E of this part.

\* \* \* \* \*

*Evaluation* means the act of carefully examining the characteristics of a site in relation to the requirements of the qualifying or disqualifying conditions specified in the guidelines of subpart C and D or subpart E of this part.

4. Section 960.3 is revised to read as follows:

##### § 960.3 Implementation guidelines.

The guidelines of this subpart establish the procedure and basis for applying the guidelines in subparts C, D

and E of this part. The postclosure and the preclosure guidelines of subparts C and D of this part, respectively, apply to comparative evaluations of the suitability of multiple sites for characterization. As may be appropriate during the comparative siting process, this procedure requires consideration of a variety of geohydrologic settings and rock types, regionality, and environmental impacts and consultation with affected States, affected Indian tribes, and Federal agencies. The postclosure and preclosure guidelines of subpart E of this part apply to evaluations of the suitability of the Yucca Mountain site for development as a repository.

5. Section 960.3-1 is amended by revising the final sentence of the section to read as follows:

**§ 960.3-1 Siting provisions.**

\* \* \* Section 960.3-1-5 establishes the basis for site evaluations against the postclosure and the preclosure guidelines of subparts C, D and E of this part.

6. Section 960.3-1-5 is revised to read as follows:

**§ 960.3-1-5 Basis for site evaluations.**

(a) *General provisions.* Evaluations of individual sites and comparisons between and among sites shall be based on the postclosure and preclosure guidelines specified in subparts C and D of this part, respectively, except that the evaluation of the suitability of the Yucca Mountain site for development as a repository shall be based on the guidelines in subpart E of this part. Except for screening for potentially acceptable sites as specified in § 960.3-2-1 and in the implementation of subpart E of this part, such comparisons shall place primary significance on the postclosure guidelines and secondary significance on the preclosure guidelines, with each set of guidelines considered collectively for such purposes.

(b) *Site evaluations.* Both the postclosure and the preclosure guidelines of subparts C and D of this part consist of a system guideline or guidelines and corresponding groups of technical guidelines. The postclosure guidelines of subpart C of this part contain eight technical guidelines in one group. The preclosure guidelines of subpart D of this part contain eleven technical guidelines separated into three groups that represent, in decreasing order of importance, preclosure radiological safety; environment, socioeconomic, and transportation; and ease and cost of siting, construction, operation, and closure. The relative

significance of any technical guideline to its corresponding system guideline is site specific. Therefore, for each technical guideline, an evaluation of compliance with the qualifying condition shall be made in the context of the collection of system elements and the evidence related to that guideline, considering on balance the favorable conditions and the potentially adverse conditions identified at a site. Similarly, for each system guideline, such evaluation shall be made in the context of the group of technical guidelines and the evidence related to that system guideline. The guidelines of subpart E of this part contain two system performance guidelines without corresponding technical guidelines. For purposes of recommending the Yucca Mountain site for development as a repository, such evidence shall include analyses of expected repository performance to determine the ability of the site to comply with the standards set forth in subpart E of this part. A site shall be disqualified at any time during the siting process if the evidence supports a finding by the DOE that an applicable disqualifying condition exists or an applicable qualifying condition cannot be met.

(c) *Site comparisons.* Comparisons between and among sites shall be based on the system guidelines in subparts C and D of this part, to the extent practicable and in accordance with the levels of relative significance specified above for the postclosure and the preclosure guidelines. Such comparisons are intended to allow comparative evaluations of sites in terms of the capabilities of the natural barriers for waste isolation and to identify innate deficiencies that could jeopardize compliance with such requirements. If the evidence for the sites is not adequate to substantiate such comparisons, then the comparisons shall be based on the groups of technical guidelines under the postclosure and the preclosure guidelines, considering the levels of relative significance appropriate to the postclosure and the preclosure guidelines and the order of importance appropriate to the subordinate groups within the preclosure guidelines. Comparative site evaluations shall place primary importance on the natural barriers of the site. In such evaluations for the postclosure guidelines of subpart C of this part, engineered barriers shall be considered only to the extent necessary to obtain realistic source terms for comparative site evaluations based on the sensitivity of the natural barriers to such realistic engineered barriers. For a

better understanding of the potential effects of engineered barriers on the overall performance of the repository system, these comparative evaluations shall consider a range of levels in the performance of the engineered barriers. That range of performance levels shall vary by at least a factor of 10 above and below the engineered-barrier performance requirements set forth in 10 CFR 60.113, and the range considered shall be identical for all sites compared. The comparisons shall assume equivalent engineered-barrier performance for all sites compared and shall be structured so that engineered barriers are not relied upon to compensate for deficiencies in the geologic media. Furthermore, engineered barriers shall not be used to compensate for an inadequate site; mask the innate deficiencies of a site; disguise the strengths and weaknesses of a site and the overall system; and mask differences between sites when they are compared. Site comparisons shall evaluate predicted releases of radionuclides to the accessible environment. Releases of different radionuclides shall be combined by the methods specified in appendix A of 40 CFR part 191. The comparisons specified above shall consist of two comparative evaluations that predict radionuclide releases for 100,000 years after repository closure and shall be conducted as follows. First, the sites shall be compared by means of evaluations that emphasize the performance of the natural barriers at the site. Second, the sites shall be compared by means of evaluations that emphasize the performance of the total repository system. These second evaluations shall consider the expected performance of the repository system; be based on the expected performance of waste packages and waste forms, in compliance with the requirements of 10 CFR 60.113, and on the expected hydrologic and geochemical conditions at each site; and take credit for the expected performance of all other engineered components of the repository system. The comparison of isolation capability shall be one of the significant considerations in the recommendation of sites for the development of repositories. The first of the two comparative evaluations specified above shall take precedence unless the second comparative evaluation would lead to substantially different recommendations. In the latter case, the two comparative evaluations shall receive comparable consideration. Sites with predicted isolation capabilities that differ by less than a

factor of 10, with similar uncertainties, may be assumed to provide equivalent isolation.

7. Section 960.3-2-4 is revised to read as follows:

**§ 960.3-2-4 Recommendation of a site for the development of a repository.**

After completion of site characterization and non-geologic data gathering activities at the Yucca Mountain site, the site shall be evaluated on the basis of the guidelines specified in subpart E of this part. Together with any recommendation to the President to approve the Yucca Mountain site for the development of a repository, the Secretary shall make available to the public, and submit to the President, a comprehensive statement of the basis of such recommendation pursuant to the requirements specified in section 114(a)(1) of the Act, including an environmental impact statement prepared in accordance with the provisions of sections 114(a)(1)(D) and 114(f) of the Act.

8. Subpart E is added to read as follows:

**Subpart E—Yucca Mountain Site Guidelines**  
Sec.

960.6 Yucca Mountain site guidelines.

960.6-1 Postclosure system guideline.

960.6-2 Preclosure radiological safety system guideline.

**Subpart E—Yucca Mountain Site Guidelines**

**§ 960.6 Yucca Mountain site guidelines.**

The guidelines in this subpart specify the qualifying conditions that a geologic repository at Yucca Mountain shall meet for the site to be determined suitable for development as a repository. The guidelines are separated into postclosure and preclosure system guidelines. Compliance with the postclosure system guideline shall be determined by the ability of a geologic repository to meet the applicable standards through a postclosure system performance assessment. Compliance with the preclosure radiological safety system guideline shall be determined by the ability of a geologic repository to meet the applicable standards through a preclosure performance assessment.

**§ 960.6-1 Postclosure system guideline.**

*Qualifying condition.* The geologic repository shall allow for the

containment and isolation of radioactive waste after permanent closure in accordance with the EPA standards established specifically for the Yucca Mountain site and the NRC regulations implementing those standards.

**§ 960.6-2 Preclosure radiological safety system guideline.**

*Qualifying condition.* During construction, operation, and closure, the geologic repository shall perform in accordance with the EPA standards established specifically for the Yucca Mountain site and the applicable safety requirements set forth in 10 CFR parts 20 and 60 or their successor provisions.

9. Appendix III is amended in the introductory text of paragraph number 1 by adding a new sentence immediately after the first sentence of that paragraph to read as follows:

Appendix III—Application of the System and Technical Guidelines During the Siting Process

1. \* \* \* This appendix does not apply to the guidelines of subpart E for the evaluation of the Yucca Mountain site for its suitability for development as a repository. \* \* \*

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