

NUCLEAR REGULATORY COMMISSION

**FINAL DECISION RELATED TO THE
U.S. DEPARTMENT OF ENERGY'S GENERAL GUIDELINES
FOR THE RECOMMENDATION OF SITES FOR NUCLEAR
WASTE REPOSITORIES (10 CFR PART 960) AND
ITS YUCCA MOUNTAIN SITE SUITABILITY GUIDELINES
(10 CFR PART 963)**

AGENCY: Nuclear Regulatory Commission.

ACTION: Concurrence on the U.S. Department of Energy's revision of its general guidelines for the recommendation of sites for nuclear waste repositories, and on its guidelines for determining the suitability of the site at Yucca Mountain, Nevada.

SUMMARY: This final decision sets forth the reasons of the U.S. Nuclear Regulatory Commission ("NRC" or the "Commission") for concurring on the revised "General Guidelines for the Recommendation of Sites for Nuclear Waste Repositories" and on the "Yucca Mountain Site Suitability Guidelines," designated 10 CFR Part 963, proposed by the U.S. Department of Energy ("DOE" or the "Department"). These draft final guidelines were submitted by DOE to the Commission for review and concurrence on May 4, 2000.

EFFECTIVE DATE: (insert date)

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SUPPLEMENTARY INFORMATION:

I. Introduction

Section 112(a) of the Nuclear Waste Policy Act of 1982 (NWPA) directed DOE to develop general siting guidelines for the recommendation of sites for characterization as potential repositories for the disposal of spent nuclear fuel and other high-level radioactive wastes (HLW). Section 112(a) also called for NRC to concur on those guidelines. DOE issued its final guidelines, in the form of 10 CFR Part 960, on December 6, 1984 (49 FR 47715). The DOE guidelines defined the technical requirements that candidate sites must meet, and specified how DOE would implement its HLW repository site-selection process. The guidelines also recognized NRC jurisdiction for the resolution of differences between the guidelines and NRC's regulations governing the disposal of HLW in geologic repositories at 10 CFR Part 60 and provided that DOE would obtain NRC concurrence on future revisions to the siting guidelines. NRC concurred on DOE's general siting guidelines in July 1984 (49 FR 28130).

In 1987, Congress amended the NWPA and directed DOE to characterize only the Yucca Mountain site, in Nye County, Nevada. In 1992, in the Energy Policy Act (EnPA – Public Law 102-486), Congress directed the National Academy of Sciences (NAS) to conduct a study to provide findings and recommendations on reasonable standards for protection of the public health and safety, from releases of radioactive materials stored or disposed of in a repository at the Yucca Mountain site. The EnPA also required the U.S. Environmental Protection Agency (EPA) to issue public health and safety standards consistent with the findings and recommendations of the NAS, and the NRC to modify its technical requirements and criteria to be consistent with EPA's standards. The NAS published its recommendations in August 1995.

On December 16, 1996, DOE published proposed modifications to its original 1984 guidelines (61 FR 66158). DOE's proposed amendments would have created a new subpart to Part 960, addressing only the Yucca Mountain site, and were designed to concentrate the regulatory review on the analyses of overall repository performance. EPA published its final site-specific radiation standards for Yucca Mountain (40 CFR Part 197) on June 13, 2001 (66 FR 32073). After publication of proposed site-specific disposal regulations for public comment on February 22, 1999 (64 FR 8640), NRC considered and affirmed NRC's final regulations on September 7, 2001.

II. DOE's Revised Siting Guidelines

In 1999, DOE decided to issue a revised proposal amending its general guidelines, in lieu of finalizing the 1996 proposed revised guidelines. Its revised proposal limited the general guidelines to the preliminary screening of potential sites for a nuclear waste repository, and added a new Part 963 for determining the suitability of the Yucca Mountain site for a potential geologic repository (64 FR 67054).

DOE gave three principal reasons for its new proposal: (a) the need to provide more specificity for the criteria and methodology to be used in evaluating the suitability of the Yucca Mountain site and to better explain the legal bases for the proposal; (b) DOE's issuance, in December 1998, of the report entitled, "Viability Assessment of a Repository at Yucca Mountain," which sets forth the bases for the site suitability criteria DOE is proposing to use and the methodology for applying the criteria to a design for a proposed repository at the Yucca Mountain site; and (c) the need for better alignment with EPA's and NRC's site-specific regulations, under development at the time. See 64 FR 67054, 67055. The public comment period for the proposed rule ended on February 14, 2000. In addition, DOE conducted two public hearings in Nevada as part of the public comment process. Overall, DOE received about 125 comments, questions, and concerns on its proposal from 45 entities and members of the public, including comments from the NRC staff, dated March 3, 2000.

In the new Part 963, DOE proposes two separate determinations for evaluating the suitability of the Yucca Mountain site. Using information and data developed through its site characterization programs to date, DOE would conduct both a *preclosure* and a *postclosure safety evaluation*. The two separate, risk-based assessments are consistent with NRC's final site-specific regulation for the proposed Yucca Mountain site, 10 CFR Part 63, which calls for an *Preclosure Safety Assessment* and *Total System Performance Assessment* for the two respective phases of repository activities. DOE would compare the results from each of the two analyses with the applicable EPA standards and the NRC regulations. 10 CFR Part 963 also specifies the evaluation methods and criteria to be used, as well as the specific determinations to be reached by DOE. Although the revised draft final siting guidelines at Part 963 are closely linked to certain licensing criteria and requirements in NRC's Part 63 regulation, DOE has noted that meeting Part 963 would not be the equivalent of a determination that the candidate site and

the proposed design will meet all the NRC licensing requirements necessary to receive authorization to construct the proposed repository at Yucca Mountain.

In a letter dated May 4, 2000, DOE sent to the Commission, for its review and concurrence, the revised draft final siting guidelines, in the form of a proposed *Federal Register* notice amending Part 960 and containing the new Part 963. Also included as part of the proposed *Federal Register* notice were a DOE analysis and response to the comments.

III. Concurrence Criteria

The Commission considered what criteria were appropriate for its concurrence in its 1984 decision-making on DOE's siting guidelines and believes that these criteria should continue to be used, to the extent that they are still appropriate. The 1984 concurrence criteria were:

1. The siting guidelines must not be in conflict with NRC's geologic disposal regulations.
2. The siting guidelines must not contain provisions that might lead DOE to select sites that would not be reasonable alternatives for an Environmental Impact Statement (EIS).
3. The siting guidelines should not contain provisions that are in conflict with NRC responsibilities embodied in NWPA, as amended.

The Commission finds that the first and the third criteria remain relevant. The second criterion is no longer relevant because the 1987 amendments to the NWPA eliminated the need for consideration of alternative repository sites in an EIS. Moreover, in providing its 1984 concurrence, DOE agreed to meet seven conditions, of which the principal two¹ were:

1. DOE was to amend its siting guidelines to recognize NRC jurisdiction over resolution of differences between the Department's siting guidelines and NRC's geologic disposal regulations.

¹ The remaining conditions pertained to specific language changes in the siting criteria, themselves, as well as clarifications and additional specificity regarding their application.

2. DOE was to commit to obtain NRC concurrence on future siting guideline revisions.

These two conditions remain valid for the present concurrence decision.

IV. Commission Decision

The NRC staff raised three issues in its March 3, 2000, comments on DOE's 1999 proposed revised guidelines. First, the staff pointed out that there appeared to be no discussion addressing the potential matter of a conflict between the proposed revisions and the applicable NRC regulations and recommended that this issue be addressed in the statement of considerations (SOC) for the guidelines. Second, the staff noted that the SOC inappropriately included a reference to NRC's quality assurance (QA) criteria of Appendix B in 10 CFR Part 50 as "considerations" rather than as "pass/fail standards" in DOE's discussion of how it has defined "criteria." Staff underscored that NRC's QA criteria are factors that must be present if DOE's QA program is to be judged adequate and that any implication that NRC's QA criteria are not required should be avoided, lest confusion result as to their standing as regulatory requirements. Third, the staff noted that DOE's proposed definition of "cladding" conveyed the inaccurate notion that all cladding is corrosion-resistant, whereas, in reality, some spent nuclear fuels are clad in aluminum, which is not generally considered corrosion-resistant.

DOE has addressed these comments in its draft final revisions to its guidelines. With respect to the first comment, DOE has added material in its SOC explaining that the necessary consistency between the DOE and NRC regulations is obtained through the careful crafting of its regulation to conform to pertinent parts of NRC's Part 63, and that any conflicts between the two are resolved through the concurrence process. With respect to the second comment, DOE's SOC now acknowledges that NRC's QA criteria are factors that must be present for anyone's QA program to be judged adequate, and that NRC's QA criteria are mandatory despite their lack of quantitative, pass-fail references. Finally, DOE has revised its definition of "cladding" to indicate that it is generally made of corrosion-resistant zirconium alloy or stainless steel, thereby eliminating the implication that it is always made of such material. The Commission finds that DOE acceptably addressed the NRC staff's comments.

Further, the Commission has not identified anything in DOE's revised siting guidelines that conflicts with NRC's 10 CFR Part 63 regulation, as modified to be consistent with the final EPA standard for Yucca Mountain, nor has the Commission identified anything in DOE's revised siting guidelines that would conflict with NRC's responsibilities under the NWPA, as amended. With respect to the two conditions, DOE has responded acceptably, as described above, to the concerns that NRC jurisdiction be recognized for the resolution of any potential conflicts between DOE and NRC regulations. Regarding the second condition, DOE continues to commit [see 10 CFR 963.10(b)] to seek NRC concurrence on future revisions, if any, to its siting guidelines.

In summary, the Commission has determined that DOE has acceptably addressed the issues raised by the NRC staff in its March 3, 2000, letter. Further, the Commission finds: (a) that the siting guidelines are not in conflict with NRC's geologic disposal regulations at 10 CFR Part 63; and (b) the siting guidelines do not contain provisions that are in conflict with NRC responsibilities embodied in the NWPA, as amended. Therefore, the Commission concurs on DOE's revised general guidelines for the recommendation of sites for nuclear waste repositories (Part 960) and on its guidelines for determining the suitability of the Yucca Mountain site (Part 963).

The Commission recognizes that DOE could make further changes to its revised draft final siting guidelines submitted to the Commission, for concurrence, prior to the publication of the guidelines. Consequently, the Commission's concurrence is conditional on DOE's agreement to notify NRC of any changes to the draft final guidelines (including changes to the *Supplemental Information*) and its agreement to retransmit the revised rulemaking package to the Commission, if any substantive changes are made, for a determination as to whether re-concurrence is needed.²

V. Commission Concurrence Process

² We also note that DOE needs to modify the reference to "the quality assurance (QA) criteria of Appendix B in 10 CFR Part 50 ..." in the *Supplemental Information* of its May 4, 2000, proposed *Federal Register* notice. This reference is no longer warranted in light of the incorporation of applicable Part 50 QA criteria in the final Part 63 rule.

