

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Part 60**

**[Docket No. PRM-60-2 and 60-2A]**

**The States of Nevada and Minnesota; Denial of Petition for Rulemaking**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Denial of petition for rulemaking.

**SUMMARY:** The Nuclear Regulatory Commission (NRC) is denying a petition for rulemaking (PRM-60-2 and 60-2A) submitted by the States of Nevada and Minnesota dealing with disposal of high-level radioactive waste (HLW). In PRM-60-2, the petitioners requested that the NRC adopt a regulation governing the implementation of certain generally-applicable environmental standards for HLW that had been proposed by the U. S. Environmental Protection Agency (EPA) in 1982. Subsequently, in PRM-60-2A, the petitioners amended their original petition after EPA issued final standards in 1985. The amended petition was placed on hold pending completion of certain rulemaking activities, including EPA and NRC development of new HLW disposal standards applicable only to a site at Yucca Mountain, Nevada. The NRC is denying the petition because the NRC considered petitioners' concerns in the development of its site-specific standards for a proposed repository at Yucca Mountain, and amending NRC's

generic repository licensing regulations at this time would unnecessarily expend limited Commission resources because there is no current expectation that the generic regulations, in their current form, will be used.

**ADDRESSES:** Copies of the petition for rulemaking, the public comments received, and the NRC's letter to the petitioners may be examined at the NRC Public Document Room, Room O1F23, located at 11555 Rockville Pike, Rockville, MD. These documents also may be viewed and downloaded electronically via the rulemaking website, at <http://ruleforum.llnl.gov>.

The NRC maintains an Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the Internet at <http://www.nrc.gov/NRC/ADAMS/index.html>. 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, 301-415-4737, or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

**FOR FURTHER INFORMATION CONTACT:** Mark Haisfield, telephone (301) 415-6196, e-mail [MFH@nrc.gov](mailto:MFH@nrc.gov) or Timothy McCartin, telephone (301) 415-7285, e-mail [TJM3@nrc.gov](mailto:TJM3@nrc.gov) of the Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

## **SUPPLEMENTARY INFORMATION:**

### The Petition

On April 30, 1985 (50 FR 18267), the NRC published a notice of receipt of a petition for rulemaking (PRM-60-2) filed by the States of Nevada and Minnesota (petitioners) on January 21, 1985. The petition requested that the NRC amend its regulations in 10 CFR Part 60 that govern disposal of HLW in geologic repositories. The petitioners requested that NRC amend its regulations to add assurance requirements proposed by the EPA (40 CFR 191.14) in EPA's proposed rule (47 FR 58196; December 29, 1982) to establish generally-applicable environmental standards for the management and disposal of spent nuclear fuel, HLW and transuranic wastes. EPA published its final environmental standards on September 19, 1985 (50 FR 38066).<sup>1</sup> The final standards included the assurance requirements of concern to petitioners (e.g., institutional controls and post-permanent closure monitoring), but EPA did not impose these requirements on facilities regulated by the NRC (see 40 CFR 191.14 (1985)). The petitioners subsequently filed an amended petition with the NRC on September 30, 1985 (PRM-60-2A) and the NRC published a notice of receipt of the amended petition on December 19, 1985 (50 FR 51701).

The amended petition requested that NRC amend 10 CFR Part 60 to: (1) incorporate regulations that are substantively equivalent to EPA's 1985 assurance requirements, and (2) incorporate regulations pertaining to NRC's potential adoption of the Final Environmental Impact Statement (FEIS) to be prepared by the U.S. Department of Energy (DOE) as part of its

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<sup>1</sup> EPA's final disposal standards at 40 CFR Part 191 were struck down by the U.S. Court of Appeals for the 1<sup>st</sup> Circuit in *NRDC v. EPA*, 824 F.2d 1258 (1<sup>st</sup> Cir. 1987). However, in 1992, Congress, in the Waste Isolation Pilot Plant Land Withdrawal Act, Public Law 102-579, reinstated the standards for sites other than Yucca Mountain, Nevada, except for those portions that were the specific subject of the judicial remand. The assurance requirements, 40 CFR 191.14, were among the reinstated standards.

site recommendation of a potential geologic repository. In the notice of the amended petition, the NRC noted that rulemaking actions currently underway, when finalized, would address the concerns expressed by petitioners (50 FR 51703). The actions included proposed amendments to 10 CFR Part 60 to eliminate inconsistencies between NRC's generic regulations and EPA's 1985 standards, and proposed amendments to 10 CFR Part 51 on the adoption of DOE's FEIS. Accordingly, the notice advised readers that further consideration of the issues raised by petitioners would be deferred for consideration in these rulemakings. On July 3, 1989 (54 FR 27864), the NRC published a final rule, "NEPA Review Procedures for Geologic Repositories for High-Level Waste." In that rulemaking, the NRC denied the portion of the amended petition proposing specific regulations to govern the process for adopting DOE's FEIS, but considered the concerns raised by petitioners on this issue in the process of formulating the final rule (54 FR 27868).

#### Public Comments on the Petition

The notice of receipt of the petition for rulemaking invited interested persons to submit comments. The comment period closed on July 1, 1985, for PRM-60-2, and February 18, 1986, for PRM-60-2A. The NRC received eight comment letters on the petition and the amendment from seven commenters (one commenter provided comments on both PRM-60-2 and 60-2A). There were six comment letters on PRM-60-2 and two comment letters on PRM-60-2A. Of the seven commenters, five were from States and two were from representatives of the nuclear power industry. The State commenters agreed with petitioners that assurance requirements should be included in NRC regulations whereas the industry commenters believed that assurance provisions should be in guidance rather than the regulations.

## Intervening Actions

Subsequent to submission of the petitions, two events occurred which substantially altered the legal landscape of the Government's program for the disposal of HLW. These events resulted in the Commission's withdrawal of its proposed amendments to conform 10 CFR Part 60 to EPA's 1985 standards (63 FR 66498; December 2, 1998). First, in 1987, Congress amended the Nuclear Waste Policy Act of 1982 (NWPA) in the Nuclear Waste Policy Amendments Act (Public Law 100-203), to provide, among other things, that only the site at Yucca Mountain, Nevada, (YM) would be characterized for possible selection as a geologic repository. Second, in the Energy Policy Act of 1992 (Public Law 102-486), Congress required that EPA issue public health and environmental radiation protection standards that would apply solely to the YM site and that NRC modify its technical requirements and criteria to be consistent with the EPA standards. Pursuant to these statutory changes, the EPA issued its final standards applicable to YM in a new 40 CFR Part 197 on June 13, 2001 (66 FR 32074) and the NRC issued its final conforming requirements in a new 10 CFR Part 63 - "Disposal of High-Level Radioactive Wastes in a Proposed Geologic Repository at Yucca Mountain, Nevada" (66 FR 55732; November 2, 2001). In its rulemaking, the NRC also amended 10 CFR Part 60 to make it clear that this part only applies to the licensing of repositories at sites other than Yucca Mountain.

## Denial of the Petition

The NRC is denying the petition, as amended, for the following reasons:

1. The petitioners' concerns were considered in the rulemaking establishing 10 CFR Part 63 and the regulations in 10 CFR Part 60 no longer apply to a repository at YM. Therefore, the

petition, even if granted, would not affect the regulatory regime now in place for the licensing of a potential repository at the YM site.

The NRC has established a new set of regulations applicable specifically and exclusively to a proposed repository at YM in 10 CFR Part 63. The issues raised by the petitioners were considered in the course of this rulemaking as explained below. However, the petitioners' requested amendments were specifically directed to the provisions contained in 10 CFR Part 60, "Disposal of High-Level Radioactive Wastes in Geologic Repositories." At the time the petition was filed, these regulations were applicable to any potential HLW repository that would be sited, constructed or operated under the NWPAA, including one at YM. However, 10 CFR Part 60 now has been amended, in light of the statutory changes brought about by the 1987 amendments to the NWPAA and by the Energy Policy Act of 1992, to apply to any potential repository except one at YM.

2. There is no immediate need for revising 10 CFR Part 60 and doing so would unnecessarily expend limited Commission resources.

In the rulemaking to establish separate requirements for a repository at YM, the Commission chose to leave its existing generic requirements intact and in place. The Commission acknowledged that if a need arises to apply the existing generic requirements at 10 CFR Part 60, those requirements would need to be revised to account for developments in the capability of technical methods for assessing the performance of a geologic repository. See 64 FR 8641, 8643; February 22, 1999. However, the Commission expressed confidence that it would be afforded adequate time and resources in future years to amend its generic regulations for any additional repository site that might be authorized. Should it become necessary to revise these regulations, petitioners would have ample opportunity to suggest amendments.

Barring such an eventuality, however, there is no immediate need to amend 10 CFR Part 60 and doing so would unnecessarily expend limited Commission resources.

#### 10 CFR Part 63 and the Petition

Although the Commission is denying the petition for the reasons stated above, the Commission considered the substantive issues raised in the petition in the development of NRC's final 10 CFR Part 63 rule. A summary of how the petitioners' proposals are addressed in 10 CFR Part 63 is provided below:

##### *Post-permanent closure monitoring*

The petitioners proposed revisions to the regulations that provide further specification to the requirements for the monitoring program to be implemented after the repository has been permanently sealed (i.e., post-permanent closure). Generally, the petitioners requested that post-permanent closure monitoring provide substantive confirmatory information regarding long-term repository performance at the time of license termination, post-permanent closure monitoring will not degrade repository performance, and that minimum requirements for the description of the monitoring program be established in the regulation (e.g., parameters to be monitored and monitoring devices). The Commission's new regulations in 10 CFR Part 63 address the petitioners' concerns under the requirements for a performance confirmation program and a program for post-permanent closure monitoring.

Although both the performance confirmation program and the post-permanent closure monitoring program include monitoring, the Commission considers these two programs to be distinctly different because each program addresses very distinct regulatory periods and decisions. The performance confirmation program is conducted up to the time of the decision

to permanently close the repository. Thus, the performance confirmation data is used to inform and increase confidence in the Commission's decision on permanent closure of the repository. Objectives and requirements of the performance confirmation program are specified in Subpart F of Part 63 that are consistent with the petitioners' recommendations (e.g., the performance confirmation program: monitors and evaluates subsurface conditions against design assumptions; confirms natural and engineered barriers are functioning as intended and anticipated; monitors and analyzes changes from the baseline condition of parameters that could affect repository performance; and is conducted in a manner that does not adversely affect repository performance). When DOE files an application to amend the license for permanent closure, it is required, by § 63.51(a)(1), to update its performance assessment of the repository with the performance confirmation data. Consistent with NRC's licensing procedures, this information and associated analyses will be available to all stakeholders.

The program of post-permanent closure monitoring begins after the performance confirmation program ends (i.e., after the time of permanent closure). The program for post-permanent closure monitoring would only occur if the Commission reaches a positive finding on the amendment for permanent closure. If an amendment for permanent closure is granted, it is expected that the performance confirmation program would have provided further information to increase confidence that repository performance is expected to comply with the regulations. Post-permanent closure monitoring is not considered an extension of the confirmation program, but is intended as a more general program expected to monitor a variety of conditions (e.g., land-use controls established under § 63.121(b), safeguards information, and potential release of radionuclides into ground water) to ensure public health and safety is protected. The Commission did not specify details for the post-permanent closure monitoring program in 10 CFR Part 63, as was provided for the performance confirmation program. DOE's



development and NRC review of the post-permanent closure monitoring program, submitted as part of the license amendment for permanent closure, will benefit from the results of the performance confirmation program (anticipated to extend over tens of years). Therefore, the Commission considers the general requirement for a post-permanent closure monitoring program to be appropriate and additional details are neither necessary nor warranted at this time. As part of a license amendment for permanent closure [§ 63.51(a)(2)], the details of the post-permanent closure monitoring program will be subject to regulatory review and the NRC's licensing process.

#### *Institutional controls*

The petitioners provided additional text for 10 CFR Part 60 that would clarify the regulatory approach for institutional controls. First, the petitioners proposed definitions for active and passive institutional controls. The Commission agrees with the concepts for active and passive institutional controls as proposed by the petitioners and has included the essential elements of the petitioner's definitions in 10 CFR Part 63. Specifically, 10 CFR Part 63 includes a definition for passive institutional controls (§ 63.302) and provides specific requirements for active institutional controls in the regulation. Active institutional controls are specific actions required during, and beyond, the operational phase of a potential repository that are more appropriate as regulatory requirements rather than as parts of a definition. Specific aspects of the petitioner's proposed definition for "active institutional control" are provided in 10 CFR Part 63, such as: (1) requirements for ownership and control of interests in land (§ 63.121); (2) program to control and monitor radioactive effluents during operations (§ 63.21); (3) performance confirmation program (Subpart F); and (4) plans for decontamination of surface facilities (§ 63.52). In addition, pursuant to the Energy Policy Act of 1992, DOE is

required to provide post-closure oversight to prevent any activity at the site that poses an unreasonable risk of breaching the repository's engineered or geologic barriers or increasing exposures of the public beyond allowable limits. A detailed description of DOE's post-closure oversight program is required at § 63.51(a)(3).

Second, the petitioners requested a new section be added to 10 CFR Part 60 clarifying that institutional controls will not assure compliance beyond 100 years after disposal, however, passive institutional controls may be considered in assessing the likelihood and consequences of processes and events affecting the geologic setting. A more restrictive approach for institutional controls has been implemented in 10 CFR Part 63 than was proposed in the petition. DOE is not allowed to rely on institutional controls to assure compliance and 10 CFR Part 63 does not permit passive institutional controls to be considered in assessing the likelihood and consequences of processes and events. The Commission's approach in 10 CFR Part 63 is based primarily on recommendations by the National Academy of Sciences (NAS).

In 1992, Congress directed EPA, at Section 801 of the Energy Policy Act of 1992, Public Law 102-486 (EnPA), to contract with the NAS to advise EPA on the appropriate technical basis for public health and safety standards governing the Yucca Mountain repository. On August 1, 1995, the NAS published its report entitled "Technical Bases for Yucca Mountain Standards." The EnPA specifically asked the NAS to address the issue of the effectiveness of institutional controls to prevent breaching of the repository's engineered or geologic barriers as a result of human intrusion. The NAS concluded that it was not reasonable to assume that institutional controls will prevent breaching of the repository's barriers. Thus, the NAS recommended a stylized calculation be used to determine whether or not a human intrusion would substantially degrade repository performance as an approach to understand potential impacts to the repository. EPA's final standards in 40 CFR 197 and the NRC's final regulation in 10 CFR

Part 63 adopted the NAS approach. The regulations in 10 CFR Part 63 do not assume institutional controls will last much beyond the time at which the repository is permanently closed (e.g., 100's of years), and include a stylized calculation to evaluate the consequences of a potential intrusion into the repository. The petitioners' recommendation that passive institutional controls could be considered in assessing processes and events affecting the geologic setting is contrary to the NAS recommendations that it is not possible to make scientifically supportable predictions of the probability that a repository's barriers will be breached as a result of human intrusion. The Commission agrees with the NAS and has not included any provisions for the use of active or passive institutional controls to be used in determining the likelihood of processes and events. The NRC's proposed regulations for Yucca Mountain provided further details regarding the NAS recommendations, institutional controls, and human intrusion (64 FR 8640; February 22, 1999).

#### *Multiple barriers*

The petitioners requested performance requirements for the multiple barrier system of the repository specify that each barrier should be designed or selected so that it complements the others and can significantly compensate for uncertainties about the performance of one or more of the other barriers. The regulations in 10 CFR Part 63 require the repository to be comprised of multiple barriers (at least one engineered and one natural) and requires DOE to identify each barrier important to waste isolation, describe each barrier's capability to isolate waste, and provide the technical basis for each barrier's capability. In arriving at this approach, the Commission provided a technical basis in the proposed rule for 10 CFR Part 63 (64 FR 8647; February 22, 1999) and considered public comments in the final rule for 10 CFR Part 63 (66 FR 55758; November 2, 2001). This approach provides the Commission the information

necessary to understand how all components of the repository system work together to ensure that the repository system is robust and not wholly dependent on a single barrier. The petitioners' request to include additional qualifying words such as "significantly compensate for uncertainties" are neither necessary nor warranted to ensure the Commission is provided sufficient information to make its regulatory decision.

### *Siting Criteria*

The petitioners requested that the presence of significant concentrations of any naturally-occurring material not widely available from other sources be added as a potentially adverse condition to be considered under siting criteria. Siting criteria were provided for in 10 CFR Part 60, in part, to provide a basis for comparing different sites. The regulations in 10 CFR Part 63 do not contain such criteria because the need for siting criteria was removed when the Nuclear Waste Policy Amendments Act directed DOE to characterize a single site. Therefore, the petitioners' suggestion is not relevant to 10 CFR Part 63.

*Adoption of the environmental impact statement*

This section of the petition was reviewed by the Commission and denied in the NRC's final rule, "NEPA Review Procedures for Geologic Repositories for High-Level Waste" (54 FR 27864; July 3, 1989).

For the reasons cited in this document, the NRC denies this petition.

Dated at Rockville, Maryland, this \_\_\_\_\_ day of \_\_\_\_\_, 2002.

For the Nuclear Regulatory Commission.

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Annette L. Vietti-Cook,  
Secretary of the Commission.