

acceptance criteria in the Yucca Mountain Review Plan provide sufficient guidance to evaluate DOE's treatment of uncertainty against the requirements of 10 CFR part 63.

Suggested editorial changes were made to the Yucca Mountain Review Plan in response to these comments.

5.5 Compliance With Postclosure Public Health and Environmental Standards

Issue: What is the expected groundwater contamination from the repository?

Comment. One commenter expressed concern that the proposed repository at Yucca Mountain could have long-term impacts on groundwater quality.

Response. The groundwater pathway is a potential exposure pathway as identified in previous DOE and NRC performance assessments for a proposed high-level waste repository at Yucca Mountain. Groundwater will be protected provided DOE can demonstrate that the groundwater protection standard in 10 CFR part 63.331 and 63.332 are met.

Several Sections 4.2.1.3.6, "Flow Paths in the Unsaturated Zone," 4.2.1.3.7, "Radionuclide Transport in the Unsaturated Zone," 4.2.1.3.8, "Flow Paths in the Saturated Zone," and 4.2.1.3.9, "Radionuclide Transport in the Saturated Zone," of the draft Yucca Mountain Review Plan provide specific review methods and acceptance criteria to evaluate whether DOE's abstraction of groundwater flow and radionuclide transport satisfies the postclosure performance objectives at 10 CFR 63.113. In addition, as discussed in the "Statement of Considerations" for 10 CFR part 63 (66 FR 55758, November 2, 2001):

The Commission has commented previously that an individual, all-pathway dose limit of either 0.15-mSv (15-mrem) or 0.25-mSv (25-mrem) TEDE ensures that the risks from all radionuclides and all exposure pathways, including the ground-water pathway, are acceptable and protective. The EPA itself acknowledged, in publishing final standards for Yucca Mountain, that an " * * * Individual Protection Standard is adequate in itself to protect public health and safety." However, ultimately, the EPA had to make the decision whether to include separate requirements for groundwater protection and the final EPA standards for Yucca Mountain include such requirements for the purpose of protecting groundwater. Therefore, as required by law, final Part 63 requirements incorporate final U.S. Environmental Protection Agency standards for Yucca Mountain at 40 CFR part 197, including separate ground-water protection requirements. These requirements, sections 197.30 and 197.31, appear in the final 10 CFR

part 63 regulations as sections 63.331 and 63.332, respectively.

The Yucca Mountain Review Plan has been revised to ensure consistency with the groundwater protection standards in 10 CFR 63.331 and 10 CFR 63.332. These changes, combined with the review methods and acceptance criteria in Section 4.2.1.3, "Model Abstraction," of the draft Yucca Mountain Review Plan, will ensure that the NRC review of DOE's license application takes into account DOE's demonstration of compliance with the applicable postclosure performance objective and groundwater protection standards.

5.6 Postclosure Monitoring

Issue: Would there be control over the Yucca Mountain site after permanent closure and license termination?

Comment. Several commenters expressed concern about the extent of NRC oversight activities after permanent closure of a high-level waste repository at Yucca Mountain. One commenter asked about plans for monitoring ambient radiation in the drifts and tunnels after permanent closure. Another commenter requested information on security and physical protection plans for the repository after permanent closure. Other commenters asked NRC to provide a postclosure plan for waste retrieval and whether the Yucca Mountain Review Plan addressed possible postclosure terrorist problems and the postclosure performance assessment.

Response. If DOE is granted a license, it may seek an amendment under 10 CFR 63.51 for permanent closure of a high-level waste repository at Yucca Mountain. As part of its amendment request, DOE must submit its program for continued oversight, including a description of a program for postclosure monitoring of the repository, and a detailed description of measures to regulate or prevent activities that could impair the long-term performance of the repository. NRC will review the adequacy of DOE's programs for continued oversight following permanent closure and decontamination of surface facilities.

DOE may also apply for license amendment to terminate the license pursuant to 10 CFR 63.52. NRC will terminate the license if it finds that final waste disposition conforms to DOE's plan, as amended and approved as part of the license, and the geologic repository operations area conforms to plans for permanent closure and decontamination or decontamination and dismantlement of surface facilities.

Section 122 of the Nuclear Waste Policy Act provides for retrieval of any

spent fuel for any reason pertaining to public health and safety, or the environment, or for the purpose of permitting the recovery of the economically valuable contents of spent fuel. The implementing regulations at 10 CFR part 63 provide for retrieval of waste before permanent closure of the repository. During a period of waste disposal that may extend over several decades, DOE is required by license to maintain performance confirmation, monitoring, and security programs to ensure that the natural and engineered components assumed to operate as barriers during permanent closure of the repository are functioning as intended and anticipated at the time of license application. Thus, it is DOE that must legally provide security for the Yucca Mountain site. NRC staff will evaluate whether the security measures would be adequate to protect the site.

NRC will conduct an inspection program to ensure that DOE complies with its license. DOE is not required to have plans in place for retrieval or security after permanent closure of the repository.

The draft Yucca Mountain Review Plan Section 4.5.8, "Controls to Restrict Access and Regulate Land Uses," examines compliance with the requirements for ownership and control of interests in land. The scope of these regulatory requirements includes, among others, land acquisition and withdrawal, acceptability of controls through and for permanent closure, control over surface and subsurface estates, and design of monuments to identify the site. Draft Yucca Mountain Review Plan Section 4.5.9, "Uses of the Geologic Repository Operations Area for Purposes Other Than Disposal of Radioactive Wastes," examines procedures for conduct and continuing oversight of proposed activities. These two sections of the Yucca Mountain Review Plan enable NRC staff to determine whether adequate security would be provided for the site after permanent closure.

No changes were made to the Yucca Mountain Review Plan in response to this comment.

6 Research and Development Program To Resolve Safety Issues

6.1 Scope of the Research and Development Program To Resolve Safety Questions

Issue: What is the appropriate scope of the research and development program to resolve safety issues?

Comment. One commenter expressed concern about the text in the "Areas of Review" for Section 4.3, "Research and