

(2) The geologic repository operations area shall be designed to include onsite facilities and services that ensure a safe and timely response to emergency conditions and that facilitate the use of available offsite services (such as fire, police, medical, and ambulance service) that may aid in recovery from emergencies.

(f) *Utility services.* (1) Each utility service system that is important to safety shall be designed so that essential safety functions can be performed, assuming occurrence of the design basis events.

(2) The utility services important to safety shall include redundant systems to the extent necessary to maintain, with adequate capacity, the ability to perform their safety functions.

(3) Provisions shall be made so that, if there is a loss of the primary electric power source or circuit, reliable and timely emergency power can be provided to instruments, utility service systems, and operating systems, including alarm systems, important to safety.

(g) *Inspection, testing, and maintenance.* The structures, systems, and components important to safety shall be designed to permit periodic inspection, testing, and maintenance, as necessary, to ensure their continued functioning and readiness.

(h) *Criticality control.* All systems for processing, transporting, handling, storage, retrieval, emplacement, and isolation of radioactive waste shall be designed to ensure that nuclear criticality is not possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. Each system must be designed for criticality safety assuming occurrence of design basis events. The calculated effective multiplication factor (keff) must be sufficiently below unity to show at least a 5 percent margin, after allowance for the bias in the method of calculation and the uncertainty in the experiments used to validate the method of calculation.

(i) *Instrumentation and control systems.* The design shall include provisions for instrumentation and control systems to monitor and control the behavior of systems important to safety, assuming occurrence of design basis events.

(j) *Compliance with mining regulations.* To the extent that DOE is not subject to the Federal Mine Safety and Health Act of 1977, as to the construction and operation of the geologic repository operations area, the design of the geologic repository

operations area shall nevertheless include such provisions for worker protection as may be necessary to provide reasonable assurance that all structures, systems, and components important to safety can perform their intended functions. Any deviation from relevant design requirements in 30 CFR, Chapter I, Subchapters D, E, and N will give rise to a rebuttable presumption that this requirement has not been met.

(k) *Shaft conveyances used in radioactive waste handling.* (1) *Hoists important to safety shall be designed to preclude cage free fall.*

(2) Hoists important to safety shall be designed with a reliable cage location system.

(3) Loading and unloading systems for hoists important to safety shall be designed with a reliable system of interlocks that will fail safely upon malfunction.

(4) Hoists important to safety shall be designed to include two independent indicators to indicate when waste packages are in place and ready for transfer.

14. In § 60.132, paragraph (c)(1) is revised to read as follows:

§ 60.132. Additional design criteria for surface facilities in the geologic repository operations area.

* * * * *

(c) *Radiation control and monitoring—(1) Effluent control.* The surface facilities shall be designed to control the release of radioactive materials in effluents so as to meet the performance objectives of § 60.111(a).

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15. In § 60.133, the introductory text of paragraph (g) and paragraph (g)(2) are revised to read as follows:

§ 60.133 Additional design criteria for the underground facility.

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(g) *Underground facility ventilation.* The ventilation system shall be designed to:

* * * * *

(2) Assure the ability to perform essential safety functions assuming occurrence of design basis events; and
* * * * *

16. A new undesignated center heading and § 60.136 are added to read as follows:

Preclosure Controlled Area

§ 60.136 Preclosure controlled area.

(a) A preclosure controlled area must be established for the geologic repository operations area.

(b) The geologic repository operations area shall be designed so that, for

Category 2 design basis events, no individual located on or beyond the nearest boundary of the preclosure controlled area will receive the more limiting of a total effective dose equivalent of 0.05 Sv (5 rem), or the sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue (other than the lens of the eye) of 0.5 Sv (50 rem). The eye dose equivalent may not exceed 0.15 Sv (15 rem), and the shallow dose equivalent to skin may not exceed 0.5 Sv (50 rem). The minimum distance from the surface facilities in the geologic repository operations area to the boundary of the preclosure controlled area must be at least 100 meters.

(c) The preclosure controlled area may be traversed by a highway, railroad, or waterway, so long as appropriate and effective arrangements are made to control traffic and to protect public health and safety.

17. In § 60.183, paragraph (b) is revised to read as follows:

§ 60.183 Criminal penalties.

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(b) The regulations in part 60 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 60.1, 60.2, 60.3, 60.5, 60.6, 60.7, 60.8, 60.15, 60.16, 60.17, 60.18, 60.21, 60.22, 60.23, 60.24, 60.31, 60.32, 60.33, 60.41, 60.42, 60.43, 60.44, 60.45, 60.46, 60.51, 60.52, 60.61, 60.62, 60.63, 60.64, 60.65, 60.101, 60.102, 60.111, 60.112, 60.113, 60.121, 60.122, 60.130, 60.131, 60.132, 60.133, 60.134, 60.135, 60.136, 60.137, 60.140, 60.141, 60.142, 60.143, 60.150, 60.151, 60.152, 60.162, 60.181, and 60.183.

Dated in Rockville, Maryland, this 15th day of March, 1995.

For the Nuclear Regulatory Commission.

John C. Hoyle,

Secretary of the Commission.

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NUCLEAR REGULATORY COMMISSION

10 CFR Part 60

[Docket No. PRM-60-3]

Disposal of High-Level Radioactive Wastes in Geologic Repositories

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Partial grant/partial denial of petition for rulemaking.

SUMMARY: In a petition for rulemaking (PRM-60-3) submitted by the U.S.

Department of Energy (DOE), the U.S. Nuclear Regulatory Commission was requested to establish specific dose criteria for design basis accidents at a high-level radioactive waste repository. NRC hereby grants in part, and denies in part, the specific proposals of the petitioner.

ADDRESSES: Copies of the petition for rulemaking, the public comments received, and NRC's letter to the petitioner are available for public inspection or copying, for a fee, in the NRC Public Document Room, 2120 L Street, NW (Lower Level), Washington, DC 20555.

FOR FURTHER INFORMATION CONTACT: Dr. Richard Weller, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 415-7287.

SUPPLEMENTARY INFORMATION:

DOE submitted a petition for rulemaking on April 19, 1990. On July 13, 1990 (55 FR 28771) NRC published a notice of receipt of the petition for rulemaking. The comment period expired on October 11, 1990. The petition requested that the Commission amend 10 CFR part 60 to prescribe certain numerical accident-dose criteria to be applied at the boundary of a "preclosure control area."

Under DOE's proposal, the definition of "important to safety," in 10 CFR 60.2, would be changed to apply a reference dose limit at the preclosure-control-area

boundary, instead of the present unrestricted-area boundary; further, the definition would be amended to add a statement "All engineered safety features shall be included within the meaning of the term 'important to safety.'" The petition also proposed that performance objectives of 10 CFR 60.111 would be revised to incorporate an explicit accident dose limit, at the preclosure control area boundary, of 0.05-Sv (5-rem) effective dose equivalent, or 0.5-Sv (50-rem) committed dose equivalent. DOE indicated its intention that this limit would apply to direct irradiation and inhalation pathways, alone, and not to ingestion of contaminated foodstuffs. The phrase "at all times" would be deleted from 10 CFR 60.111(a), to clarify that the performance objective for the period of operations does not apply to exposure from accidents. Finally, the petition proposed adding new definitions, to 10 CFR 60.2, for the terms "preclosure control area," "committed dose equivalent," "committed effective dose equivalent," and "effective dose equivalent," to support the application of the accident dose criteria described above.

For a fuller statement of the petition for rulemaking, see the **Federal Register** notice cited above.

In response to NRC's publication of notice of receipt of the petition, comments were received from: DOE; Edison Electric Institute and the Utility Nuclear Waste and Transportation

Program (EEI/UWASTE); Intertech Consultants, on behalf of Lincoln County, Nevada, and the City of Caliente, Nevada; and an anonymous "Concerned U.S. Citizen." The Commission, having now considered the petition and comments, grants the petition in part and denies the petition in part, and to that end, the Commission is publishing, concurrently with this notice, a notice of proposed rulemaking.

Under the proposed rule, accident-dose criteria would be applied at the boundary of a newly defined "preclosure controlled area," as recommended by DOE. Further, in response to the petition, the term "important to safety" would be redefined, though not in the form suggested by DOE. The Commission is also proposing to adopt the petitioner's request that the phrase "at all times" be deleted from the performance objective that applies to preclosure operations. In all other respects, the petition is denied.

The reasons for the action, insofar as it both grants and denies parts of the petition, are set out at length in the statement of considerations accompanying the proposed rule.

Dated in Rockville, Maryland, this 15th day of March, 1995.

For the Nuclear Regulatory Commission.

John C. Hoyle,

Secretary of the Commission.

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