

Summary Statement
Regulations for Geological Disposal of High-Level Radioactive Waste

Presented on September 1, 2010 to the
Blue Ribbon Commission on America's Nuclear Future (Disposal Subcommittee)

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Disclaimer: The NRC staff views expressed herein are preliminary and do not constitute a final judgment or determination of the matters addressed or of the acceptability of a license application for a geologic repository at Yucca Mountain

The U.S Nuclear Regulatory Commission (NRC) is an independent government agency whose responsibilities include developing regulations to implement the EPA's safety standards, and for licensing and overseeing the construction and operation of any repository for the geologic disposal of high-level radioactive waste (HLW).

- Legislation and implementing regulations provide for separate roles and responsibilities for concerned Federal agencies
 - EPA is to issue radiation protection standards that a repository must meet
 - DOE is to design, construct, and, if a license is issued, operate the repository (DOE must show the proposed action is safe, satisfies regulatory requirements, and ensure continued compliance with those requirements)
 - NRC is an independent regulatory agency that (1) issues regulations consistent with EPA's standards; (2) conducts pre-licensing interactions with DOE; (3) makes licensing decisions (i.e., grant or deny) based on review of a license application; and (4) conducts inspections and other oversight responsibilities to ensure compliance with NRC regulatory requirements

- Key Provisions of NRC's generic HLW repository regulations at 10 CFR Part 60 (many come from statutory direction in the Nuclear Waste Policy Act of 1982)
 - Phased approach with distinct regulatory decisions (e.g., construction authorization, license to receive and possess high-level radioactive waste, permanent closure)
 - Provide for a system of multiple barriers (quantitative sub-system requirements)
 - Performance confirmation program (prior to decision on permanent closure)
 - Retrieval capability required up to decision on permanent closure
 - Requirements for period after closure (e.g., record keeping, oversight)
 - Integrated release standard (the individual protection standard and separate limits for protection of ground water currently in 40 CFR 191 have not been implemented in 10 CFR Part 60)
 - Compliance period of 10,000 years

- Key aspects of NRC's site specific regulations for Yucca Mountain (10 CFR Part 63)
 - Individual protection standard, dose limit for human intrusion scenario, separate standards for protection of ground water
 - Requirements for conducting performance assessment for initial 10,000 years and for the period after 10,000 years up to period of geologic stability (1 million years)
 - Specification of the characteristics of the biosphere
 - Use of current dosimetry for determining compliance with individual protection limits
 - Demonstration of multiple barriers done within the context of performance assessment (i.e., no separate quantitative sub-system requirements)

- Considerations for potential revisions to NRC's generic regulations for sites other than Yucca Mountain (Commission identified the potential for revisions to generic regulations when Yucca Mountain regulations were proposed; Federal Register Vol. 64 No. 34 page 8640, at page 8643, February, 22, 1999)
 - Application of risk-informed, performance-based approach of Part 63 to Part 60
 - Need to conform to current EPA generic standards for sites other than Yucca Mountain (40 CFR 191)
 - EPA's integrated release standard, the individual protection standard, and the separate standards for protection of ground water represent different levels of risk