



Licensing of the Proposed Geologic Repository at Yucca Mountain

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NRC Responsibilities

NRC has a statutory licensing role (Nuclear Waste Policy Act of 1982, as amended) for the proposed geologic repository at Yucca Mountain (YM), NV. Responsibilities include:

- **Serve as independent regulator with oversight responsibilities for YM**
- **Set licensing criteria consistent with U.S. Environmental Protection Agency (EPA) Standards for YM through rulemaking**
- **Complete safety review of DOE License Application (LA)**
- **Make a construction authorization (CA) decision on DOE LA in 3-4 years**
- **Adopt environmental impact statement (EIS), prepared by DOE for YM, to the extent practicable**
- **Develop and maintain Licensing Support Network (LSN)**
- **Conduct formal adjudicatory hearings in regard to DOE LA**



Current NRC Activities

- **Finalize Part 63 based on the final issued EPA YM Standard for radiological dose criteria**
- **Examine resources, policies, and procedures that may be necessary to:**
 - **Make docketing decisions**
 - **Review LA**
 - **Reach decisions about safety and regulatory compliance**
 - **Defend decisions in allotted time frame**
- **Develop LA review strategies to make the process effective and efficient**



Current NRC Activities (Continued)

- **Continue pre-licensing interactions with DOE to prepare for independent review of LA**
 - **Preclosure**
 - **Preclosure Safety Analysis (PCSA) Level of Information and Reliability Estimation (May 2006)**
 - **Seismic Design Methodology and Performance Demonstration (June 2006)**
 - **PCSA Topics (November 2006) - aircraft hazards, preclosure source term and consequences, reliability, human reliability, licensing specifications and training, and preclosure criticality**
 - **Postclosure**
 - **DOE's Critical Decision -1 (CD-1) process (August 2006)**
 - **NRC provided an overview of the Transportation, Aging, and Disposal (TAD) canister regulatory framework to DOE**
 - **NRC is currently reviewing TAD Performance Specifications (High-level Waste Repository Safety and Spent Fuel Storage and Transport Divisions of Nuclear Material Safety and Safeguards Office)**
 - **DOE's Total System Performance Assessment (October 2006)**



Current NRC Activities (Continued)

- **Develop revisions to Yucca Mountain Review Plan, as necessary, in the form of interim staff guidance (ISG)**
 - **HLWRS-ISG-01, *Review Methodology for Seismically Initiated Event Sequences* (September 2006)**
 - **HLWRS-ISG-02, *Level of Information and Reliability Estimation*, (est. March 2007)**
 - **HLWRS-ISG-03, *PCSA – Dose Performance Objectives and Radiation Protection Program* (est. May 2007)**
 - **HLWRS-ISG-04, *PCSA – Human Reliability Analysis* (est. July 2007)**

- **Significant Technical Activities:**
 - **Operating Experience Review**
 - **Identify operating experience data applicable to risk-significant operations**
 - **Visit sites to enhance understanding of typical operations and potential risks (e.g., Idaho National Laboratory, Savannah River, Hanford, handling activities at reactor sites)**

 - **PCSA Phase II Exercise**
 - **Identify potential risk insights for surface facility operations at the YM Geologic Repository Operations Area - particularly handling spent nuclear fuel in a pool**



Current NRC Activities (Continued)

- **Revisions to NRC's Total-System Performance Assessment (TPA) code are in progress**
- **Technical work continues in support of TPA models and parameters, including:**
 - **Waste package and drip shield performance**
 - **Drift degradation and seepage**
 - **Unsaturated and saturated zone flow and transport**
 - **Consequences of disruptive events**



Current NRC Activities (Continued)

- **Maintain Las Vegas Hearing Facility**
- **Continue to supplement and certify supplementation of NRC document collection on the LSN**
- **Continue public outreach to interact with interested stakeholders**
- **Participate in pre-License Application adjudicatory activities on LSN and discovery process**
- **Observe DOE quality assurance audits and inform DOE of observations**
- **Monitor the quality assurance and technical Issues associated with the U.S Geological Survey employee e-mails**



Revising NRC Licensing Criteria

- **Public comment periods on both the EPA Standard and NRC Regulation (Part 63) have ended**
- **NRC staff's goal is to have draft final regulations ready for Commission approval shortly after EPA issues its final Standard**
- **NRC would update its regulatory guidance, as necessary, to be consistent with the revised Part 63**
- **NRC is evaluating its analytical tools to be prepared to conduct a review using the revised regulations**



Anticipated Future NRC Activities

- **Hire and train additional technical staff, judges and support staff**
- **Make decision about adoption of DOE EIS for YM**
- **Complete acceptance review of DOE YM LA**
- **Develop safety evaluation report for YM**



Future NRC Activities (Continued)

- **Respond to, and evaluate, contentions and conduct pre-hearing activities**
- **Continue public outreach to interact with interested stakeholders**
- **Operate and maintain computer-based electronic system to support high-level waste licensing and adjudicatory processes**



Program Uncertainties

- **Establishment of a final regulatory framework**
- **Date of DOE document certification for LSN
(est. December 2007)**
- **Date for submission of DOE LA
(est. June 2008)**
- **Quality of DOE LA and supporting data**
- **Number and complexity of issues for hearing**



SUMMARY

- **NRC has a program in place to conduct a fair and independent review of a DOE LA for a proposed geologic repository at YM**
- **NRC is actively engaging DOE, during the pre-licensing phase, to address technical and regulatory issues relevant to NRC meeting its statutory responsibilities**