U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

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Licensing the Proposed DOE Repository at Yucca Mountain

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NRC Responsibilities

NRC has a statutory licensing role (Nuclear Waste Policy Act of 1982) for the proposed geologic repository at Yucca Mountain (YM), Nevada

Responsibilities include:

- Serve as independent regulator with oversight responsibilities for YM
- Set licensing criteria consistent with EPA standards for YM
- Complete safety review of DOE License Application (LA)
- Make a construction authorization (CA) decision in 3-4 years
- Adopt DOE's environmental impact statement (EIS) to the extent practicable
- Develop and maintain Licensing Support Network (LSN)
- Conduct formal adjudicatory hearings in regard to DOE LA

Schedule of Events - Estimated

DOE publishes draft supplemental EISs	Fall 2007
DOE certifies LSN collection	~ December 2007
DOE submits complete LA	
NRC begins LA docketing review and EIS adoption review	No later than June 2008
NRC determines whether to docket LA and adopt EIS (in full or part)	Last quarter of CY 2008
NRC begins LA safety review	If and when LA is docketed
NRC develops safety evaluation report	18 months from docketing
NRC conducts safety review hearings	24 months from docketing
NRC decides whether to issue construction authorization	3-4 years from docketing

About the Hearing Process

- Formal, trial-type process with witnesses and evidence
- Atomic Safety and Licensing Board presides
- State, Counties, Tribes, and other parties may seek to participate
  - Anyone can seek to participate as a party (intervenor): must have standing and must submit contentions;
  - Affected local governments can seek to participate as interested governments: do not submit contentions, but may take position on admitted contentions.
- NRC staff testifies on its independent evaluation of safety

Initial Timeline - Hearing Process

Day 0	EIS Adoption Position and LA Docketing Decision Announced in *Federal Register*
30 days later	Petitions for permission to intervene are filed - Environmental or safety disputes - Legal or factual issues
70 days later	First Pre-Hearing Conference
100 days later	First Pre-Hearing Conference Order - Identifies participants - Identifies admitted contentions - Sets schedules

Current NRC Activities

- Provide quality and timely feedback to DOE on technical and regulatory issues
- Finalize Part 63 based on final EPA YM standard for radiological dose criteria
- Finalize Part 73.51 rulemaking on security for the Geologic Repository Operations Area
- Focus and revise resources, policies, and procedures needed to:
  - Make docketing decision and EIS adoption determination
  - Review LA
  - Reach decisions about safety and regulatory compliance
- Continue to improve LA review strategies to make the process effective and efficient

Current NRC Activities (Continued)

- Continuing pre-licensing interactions with DOE to prepare for independent review of LA
  - Types of pre-licensing interactions
    - Technical exchanges: public participation at designated times
    - Management meetings: public participation at designated times
    - Information gathering meetings: public observation
  - In 2006:
    - PCSA topics
      - Level of information and reliability estimation
      - Aircraft hazards, source term and consequences, reliability, human reliability, licensing specifications and training, preclosure criticality
    - Seismic design methodology and performance demonstration
    - DOE's Critical Decision -1 process
    - Total System Performance Assessment

Current NRC Activities (Continued)

- 2006 interactions resulted in:
  - additional topics for future interactions
  - further reviews
  - development of refined guidance

- Future Topics
  - GROA security
  - Preclosure facility layout and operations
  - Colloids and in-package chemistry
  - Drift degradation
  - Preclosure source term and consequences
  - Multi-scale thermohydrologic models
  - Emergency planning
  - Human reliability
  - Near field environment

Current NRC Activities (Continued)

- Develop interim staff guidance (ISG) -- revisions to Yucca Mountain Review Plan:

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. June 2007)

HLWRS-ISG-04, PCSA – ***Human Reliability Analysis*** (est. August 2007)

Current NRC Activities (Continued)

- Significant Preclosure Technical Activities
  - Operating Experience Review
    - Identify operating experience data applicable to risk-significant operations
    - Enhance understanding of fuel handling operations and risks (e.g., Idaho National Laboratory, Savannah River, Hanford, handling activities at reactor sites)
  - PCSA Phase II Exercise
    - Identify potential risk insights of surface facility operations at the Geologic Repository Operations Area
      - Focus on hazards of handling SNF in a hypothetical pool;
      - Analyze hazards, initiating events, event sequences, and consequences;
      - Identify risk insights.

Current NRC Activities (Continued)

- Revisions to NRC's Total-System Performance Assessment (TPA) code

- Technical work to support TPA models and parameters
  - 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 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

NRC Regulatory Framework

- Part 63
  - Public comment periods on EPA standard and Part 63 have ended
  - NRC staff's goal: draft final regulations ready for Commission approval shortly after EPA issues its final standard
  - NRC may need to update regulatory guidance for consistency with revised Part 63
  - NRC is evaluating its analytical tools to be prepared to conduct a review using the revised regulations
- Security
  - NRC staff are revising Part 73.51 to update security requirements for the GROA
  - Draft rule for Commission review July 2007

NRC Will be Ready

- Technical readiness
  - Revising Part 63;
  - Revising Part 73.51 for GROA security
  - ISGs;
  - TPA Code update; and
  - Qualified staff.

- Organizational readiness
  - Internal procedures and guidance to maximize effectiveness, create efficiencies, and ensure that tight schedules are met.
  - Knowledge management and transfer program for smooth transitions.

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 Yucca Mountain

- NRC is actively engaging DOE during the pre-licensing phase to address technical and regulatory issues relevant to NRC meeting its statutory responsibilities