



U.S. Department of Energy
Office of Civilian Radioactive Waste Management



Yucca Mountain Project Overview

Presented to:

Nuclear Waste Technical Review Board

Presented by:

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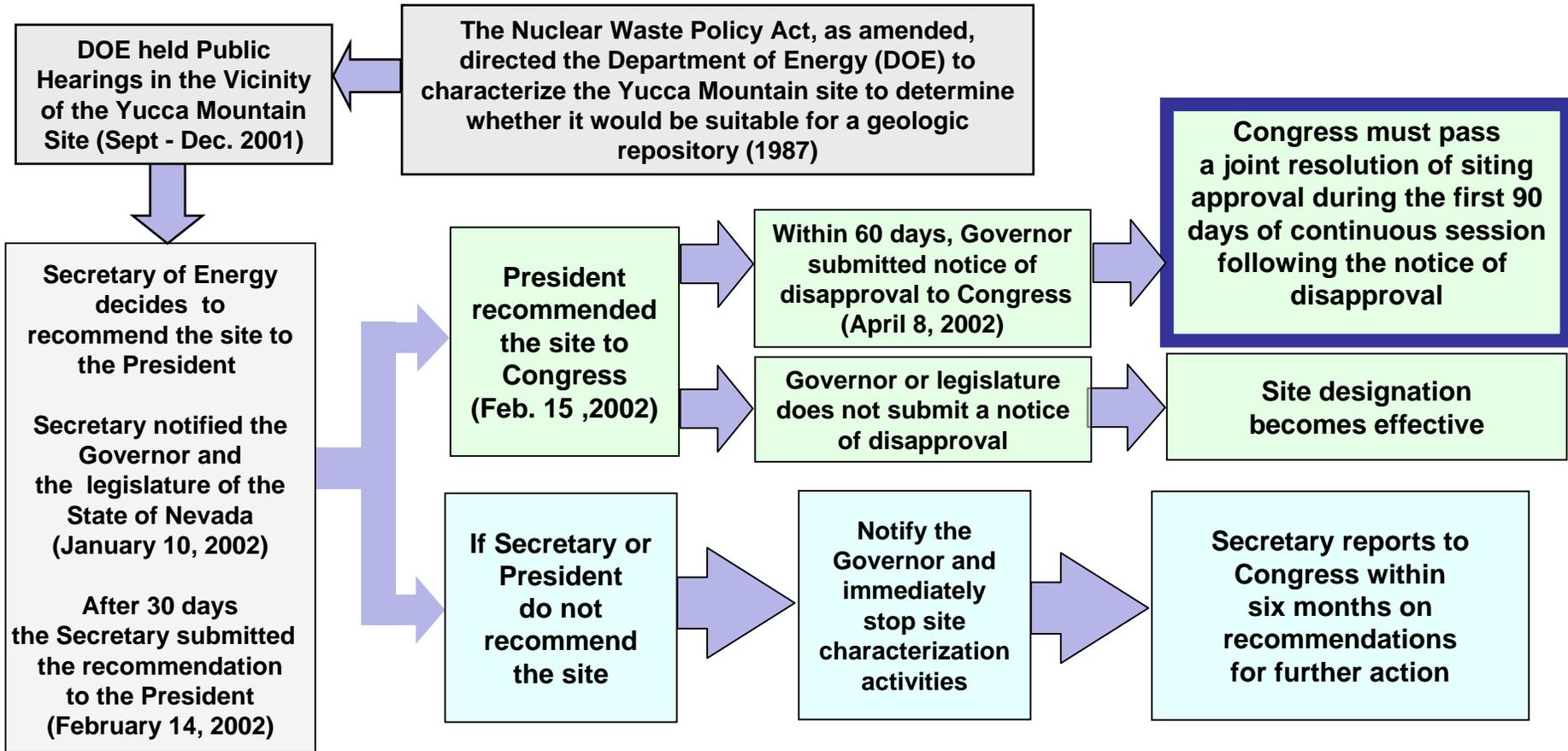
Outline

- **Project Status**
- **Site Recommendation Process and Status**
- **Detailed Work Plan Through License Application**
- **Key Testing and Design Activities**
- **Management Actions**
- **Summary**

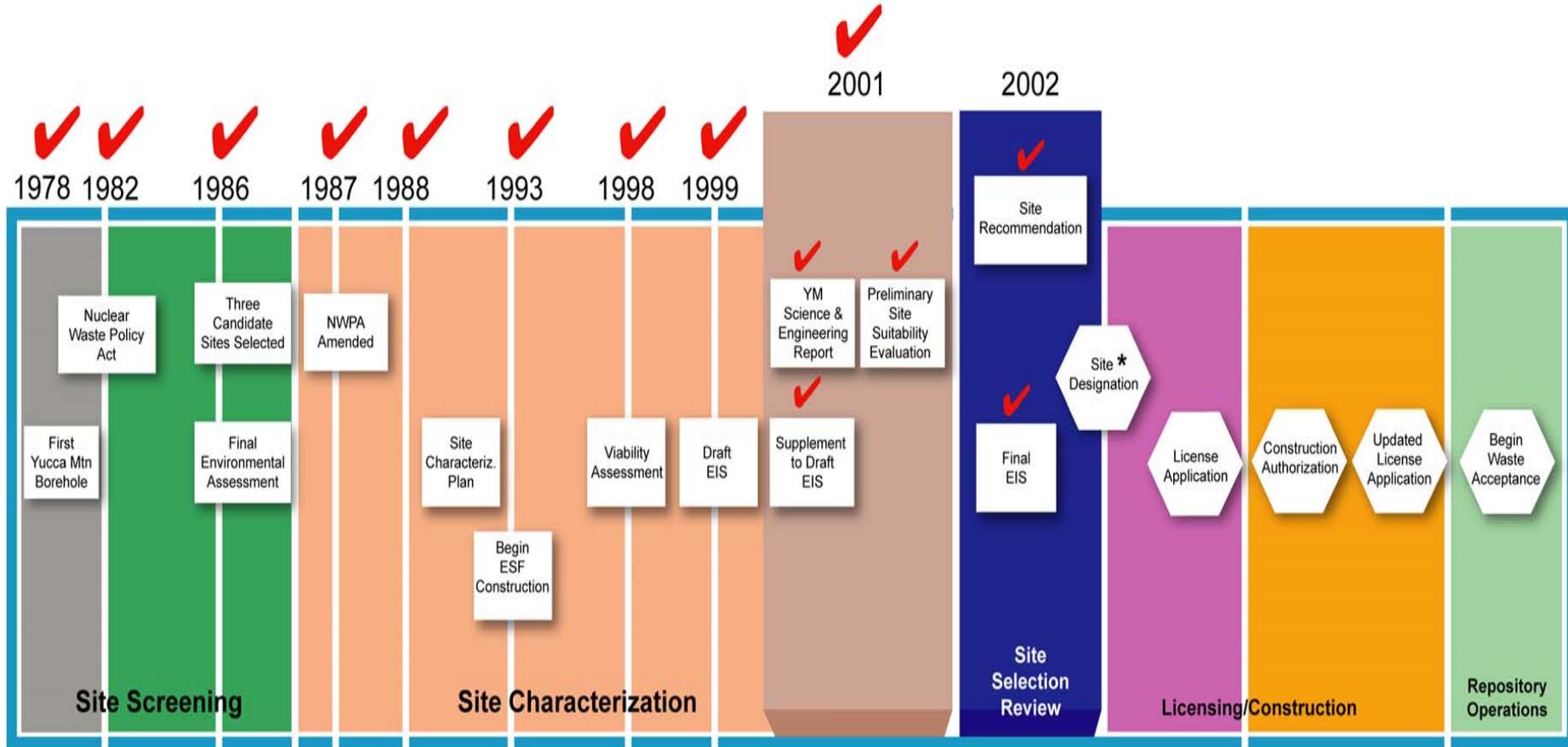
Project Status

- **DOE awaits a national policy decision on radioactive waste management**
- **Anticipating possible direction to continue repository development, planning for the licensing phase is underway**
 - **Multi-year plan through license application (LA) being prepared**
- **Project's primary multi-year objective is a viable LA with the primary focus on**
 - **NRC issues and compliance with NRC regulations**
 - **Clearly articulating uncertainties and plans to address them**
- **Transition from site characterization to licensing will require paradigm and organizational change**

Site Recommendation Process



Site Recommendation Status



* Pending Congressional action consistent with NWP A

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* Pending Congressional Action consistent with the NWP A



Detailed Work Plan Through License Application

- **Project endorsed a detailed work plan (DWP) that describes the necessary work scope for submittal of an application to the NRC by late 2004, for authorization to construct a repository**
- **Scientific and performance assessment work scope in the DWP prioritized on the basis of a risk informed, performance based approach that considered three general performance criteria**
 - **Performance related to dose**
 - **Regulatory defensibility**
 - **External acceptance**



Detailed Work Plan Through License Application

(Continued)

- **Design detail in LA will provide sufficient information for NRC review and evaluation of safety**
 - Design will provide basis for eventual development of facility designs to support procurement and construction
- **DWP includes development of a licensing strategy that will define**
 - Approach for preparation of a LA that satisfies NRC regulations and guidance
 - Safety strategies for development of preclosure and postclosure safety cases
 - Approach for communicating safety cases to oversight organizations, stakeholders and public



Detailed Work Plan Through License Application

(Continued)

- Builds on the technical basis that was used for the site recommendation
- Includes work activities to address
 - NRC requirements in 10 CFR Part 63, and 2
 - ◆ Pre- and post-closure safety analyses
 - ◆ Design description and basis
 - ◆ Quality assurance
 - ◆ Licensing Support Network
 - NRC/DOE Key Technical Issue agreements
 - Comments raised by the NWTRB and other oversight groups
 - Updating process models, and development of TSPA for LA
- Guidance in NRC's Draft Yucca Mountain Review Plan will be incorporated into the DWP



Key Testing and Design Activities

- **Model evolution inputs for inclusion in the LA includes**
 - Evaluation of volcanism consequence scenarios
 - Seismic design inputs
 - Flow and transport in the UZ and SZ testing and analysis
 - Coupled processes testing and analysis
 - Waste package material corrosion and environment testing and analysis
- **Refinement of repository design for LA**
 - Continued emphasis on flexibility and constructability
 - Consideration of modular construction
- **Improvement of the technical basis for selecting postclosure thermal conditions**

Continuing the Science Program



Directly characterizing the repository block



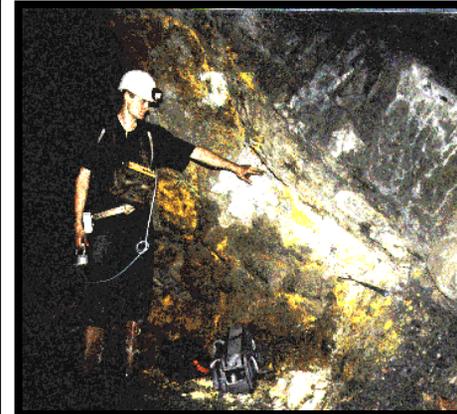
Conducting laboratory tests



Conducting surface-based testing



Studying analogues



Management Actions

- **Management actions are being taken to**
 - **Meet our primary objective of a viable LA**
 - **Ensure the success of the paradigm shift to the licensing phase**
- **Although the Project is transitioning from the site characterization phase, scientific investigations will continue to increase our understanding of natural and engineered system performance, and enhance confidence in the waste management system**
- **Project has established a separate task force to focus on long-term scientific activities that could enhance confidence, improve technologies and promote cost efficiencies in the repository program**

Summary

- **In anticipation of a possible site designation, the Project is transitioning from a site characterization to a licensing focus**
- **Project has completed a DWP that describes work scope to support submittal of a successful LA by late 2004**
 - **Testing, analysis, and design activities focused on preparation of a timely and defensible LA**
- **We are committed to the continuation of scientific investigations at Yucca Mountain to enhance our confidence in projections of long-term performance**
- **Management actions have been taken to ensure the successful transition from the site characterization phase to the licensing phase and to enhance Project performance in effectively meeting its objectives**