

U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

**NUCLEAR WASTE TECHNICAL REVIEW BOARD  
FULL BOARD MEETING**

**SUBJECT: PROGRAM APPROACH TO  
REPOSITORY LICENSING**

**PRESENTER: DR. STEPHAN J. BROCOUM**

**PRESENTER'S TITLE  
AND ORGANIZATION: ASSISTANT MANAGER, SUITABILITY AND LICENSING  
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**SALT LAKE CITY, UTAH  
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# **Nuclear Waste Policy Act (NWPA)**

- **Required NRC to establish criteria for approving or disapproving construction, operation, and closure of repositories**
- **Required NRC comment on the DOE's Site Characterization Plan**
- **Requires DOE to report to NRC semi-annually on the progress of site characterization**
- **Requires NRC to provide preliminary comments on the sufficiency of site characterization and design information for inclusion in a license application prior to site recommendation by DOE**
- **Requires NRC to act on DOE's license application and to approve or disapprove construction within 3 years (1 year extension, if justified)**
- **Requires NRC to adopt DOE's EIS to the extent practicable**

# Program Approach

- **Realigns the program with what we believe was the intent of the NWPA for a program that provides sufficient information for decision-making in a manner that meets rational cost and schedule expectations:**
  - **A decision by DOE on the suitability of the site**
  - **Findings by the NRC for construction of a repository, with later findings for operation and closure supported by additional information**
- **The Program Approach reflects**
  - **Our views of the information needed for DOE decisions**
  - **Our interpretation of what information is needed to support the NRC's reasonable assurance findings**

# Licensing Paradigm

- **The "reactor model," leads to expectations that detailed regulatory requirements and guidance are necessary and can be developed now**
  - **". . . unlike a reactor, which is largely a manufactured product, the predominant aspects of repository design and its relationship to the geologic setting cannot be determined in advance of information gained from site characterization, testing, and analyses" \***
- **". . . development of a first-of-a-kind geologic repository cannot be undertaken in the same manner as the siting and construction of a nuclear reactor" \***
  - **The regulatory framework for nuclear reactors is based on over 40 years of operational experience and the precedents of over 100 licensing proceedings**
  - **We do not have, nor can we reasonably expect to develop, the precedents to establish such a framework for a repository**

*\*OCRWM Director, Statement of Record for the Commission, 6/9/95*

# Licensing Approach

- **It is incumbent upon us to define our program and to develop the information we believe is needed to address issues in a manner that meets rational cost and schedule expectations**
  - We will describe what can be done within the constraints imposed on us and then decide if it is good enough
- **The repository evaluation and design process is heuristic**
  - Knowledge and understanding will be developed over time and cannot be specified in detail in advance
  - We are not yet at the point where we can confidently set forth a credible compliance argument
- **In our license application, we will demonstrate, consistent with the NRC's reasonable assurance standard, that our repository design and its geologic setting will protect public health and safety and the environment**

# Pre-Licensing Interactions

- **We will plan and conduct our program, inform the NRC of our plans, and present the best case we can for evaluation by the NRC**
- **Prior to submittal of the license application, we seek regulatory feedback and resolution of issues**
- **The license application annotated outline (AO) and topical reports have been proposed by DOE and accepted by NRC as two means for obtaining this feedback**
- **NRC has discussed development of pre-licensing evaluation reports (PERs) for AO sections submitted for review**
  - **Timely feedback regarding technical adequacy in a regulatory context would be more helpful than detailed guidance would be at this point**

# DOE Expectations

- **NRC, as the regulator, will comment on our plans and submittals in a timely manner and will evaluate the regulatory sufficiency of information we provide in the context of NRC licensing requirements**
- **NRC comments and actions should not create expectations regarding the level of proof required for licensing that cannot be satisfied**
  - **This is a first-of-a-kind facility**
  - **Uncertainties will be associated with demonstrating waste isolation performance over thousands of years**
  - **“For such long-term objectives and criteria, what is required is reasonable assurance, making allowance for the time period, hazards, and uncertainties involved, that the outcome will be in conformance with those objectives and criteria.”**
  - **[10 CFR 60.101(a)(2)]**

# Summary

- **We are engaged in a dynamic planning process**
- **We will maintain sufficient flexibility to accommodate new information and understanding**
- **We will not be driven to premature conclusions concerning major strategic issues**
- **We will define approaches, investigate them objectively, and refine them as we gain new understanding**
- **We expect to modify our approach on the basis of information we obtain and feedback we receive from NRC and other parties**
- **We will describe what can be done within the constraints imposed on us, and then we and the NRC will decide if it is good enough**