

Summary Highlights of NRC/DOE Technical Exchange and Management Meeting on Range of Operating Temperatures

August 2, 2001
Rockville, Maryland

Introduction and Objectives

This Technical Exchange and Management Meeting on Range of Operating Temperatures is one in a series of meetings related to the U.S. Nuclear Regulatory Commission (NRC) key technical issue (KTI) and sufficiency review, and the potential U.S. Department of Energy (DOE) site recommendation. The objectives for this meeting were for DOE to (1) summarize the Supplemental Science and Performance Analyses (SSPA) model supplements since the Science and Engineering Report and (2) discuss differences between higher-temperature and lower-temperature operating modes based on process models. This was the first of two separate meetings on this topic. The second meeting, currently scheduled for September 2001, will focus on the NRC staff's questions pertaining to DOE's SSPA.

Consistent with NRC regulations on prelicensing consultations and a 1992 agreement with the DOE, staff-level resolution can be achieved during prelicensing consultation. The purpose of issue resolution is to assure that sufficient information is available on an issue to enable the NRC to docket a proposed license application. Resolution at the staff level does not preclude an issue being raised and considered during the licensing proceedings, nor does it prejudice what the NRC staff evaluation of that issue will be after its licensing review. Issue resolution at the staff level, during prelicensing, is achieved when the staff has no further questions or comments at a point in time regarding how the DOE is addressing an issue.

Summary of Meeting

DOE provided a general briefing on the Yucca Mountain thermal design history, the current thermal management methodology, and the scope of the SSPA and comparison of the thermal operating modes. No NRC/DOE agreements were reached at this Technical Exchange and Management Meeting. The agenda and the attendance list are provided in Attachments 1 and 2, respectively. Copies of the presenters' slides are provided in Attachment 3. Highlights from the Technical Exchange and Management Meeting are listed below.

Highlights

1) DOE's Yucca Mountain Project - Thermal Design History

DOE discussed the changes in DOE's thermal goals since the Viability Assessment (see "YMP Thermal Design History" presentation given by Paul Harrington). DOE then discussed its next steps in moving toward a possible license application and stated its license application design would include a fixed design with flexible operational modes. DOE further stated that it would be formulating the decision process for selecting the licensing operating mode. This process would establish the thermal operating mode, determine appropriate thermal limits, and select operational ranges or parameters for licensing. The NRC staff had several questions related to

the design. These questions will be more fully discussed during the next meeting on this subject.

2) DOE's Current Thermal Management Methodology

DOE discussed its Yucca Mountain methodology for thermal management and the effects of this methodology on the design process (see "Current Thermal Management Methodology" presentation given by Gene Rowe). DOE discussed the design presented in the Science and Engineering Report and the SSPA and stated that it represents a single design which will work over the full range of thermal modes. DOE then discussed these different thermal modes and the potential range of operational variables. DOE stated that some of the attributes of flexible operations are: (1) ability to operate under various thermal modes, (2) ability to accommodate variations in waste stream characteristics, (3) ability to accommodate changes in receipt and emplacement rates, and (4) ability to provide for checks and balances for problem detection and corrective action. The NRC staff had several questions related to the methodology. These questions will be more fully discussed during the next meeting on this subject.

3) Scope of the SSPA and Comparison of Thermal Operating Modes

DOE discussed the scope of the SSPA and the comparisons between the thermal operating modes (see "Scope of the SSPA and Comparison of Thermal Operating Modes" presentation given by James Blink and Robert Howard). DOE discussed the organization and scope of the SSPA and provided a summary of the supplemental modes and analyses made since the Science and Engineering Report. DOE then went into a little more detail on these changes. The NRC staff had a number of questions regarding the updated scientific information, uncertainty analysis changes, and how certain changes impacted the cooler thermal operating mode. These questions will be more fully discussed during the next meeting on this subject.

4) Public Comments

Ms. Judy Treichel (Nevada Nuclear Waste Task Force) commented that the second meeting of this subject should not occur during the Nuclear Waste Technical Review Board meeting scheduled for September 10-12, 2001. The NRC stated that it was aware of this meeting and would try to avoid scheduling it on the same days.

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