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'85 AUG 29 P3:01 BUILDING 20, DENVER FEDERAL CENTER DENVER, COLORADO 80225

Denver Research Center Ground Control Division

July 26, 1985

Mr. David Tiktinsky Engineering Branch Division of Waste Management Office of Nuclear Material Safety & Safeguards Nuclear Regulatory Commission 1920 Norfolk Avenue Bethesda, Maryland 20814

WM-RES WM Record File B-6934 BOM

WM Project 10, 11, 16 Docket No. PDR LPDR B, N, S

Distribution:

Tiktinsky

(Return to WM, 623-SS)

Dear Dave:

Enclosed are review comments on the document entitled "Comments on the Nevada Nuclear Waste Storage Investigations (NNWSI) Exploratory Shaft Conceptual Design Report (LA-9179-MS)."

If we can provide further assistance for this document review, please phone me at FTS 776-0741 or Kanaan Hanna at FTS 776-0760.

Sincerely,

R. L. Mundell R. L. Mundell Supervisory Mining Engineer

Enclosure

cc: D. R. Forshey, Assistant Director--Mining Research Earle B. Amey, Staff Engineer

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NNWSI EXPLORATORY SHAFT DOCUMENT REVIEW

Document: Comments on the Nevada Nuclear Waste Storage Investigations (NNWSI) Exploratory Shaft Conceptual Design Report (LA-9179-MS).

Reviewers: K. Hanna, D. Conover, and R. Kneisley

Date Review Completed: July 25, 1985

Comments

We generally agree with the DOE discussion and conclusions regarding the exploratory shaft construction, testing and sealing techniques, and procedures. However, the DOE conclusions were often based on unavailable references; therefore, our evaluation was limited to the subject document. Additionally, many of the DOE designs and procedures have not been completed; therefore, a thorough evaluation was not possible. Our detailed comments and suggestions are listed below.

Section 1: Shaft and Seal Design Consideration

NRC comment 1 - We generally agree with the conclusions but have not reviewed the reference on which the conclusions were based. Since quantifying water inflows and measurement of hydraulic conductivities is rated highest priority in the sealing program, what are the detailed experimental plans?

NRC comment 2 - The DOE conclusion does not specifically address the sealing technique to be used in the event that perched water is encountered.

NRC comment 3 - What remedial action will be taken or special seal design techniques used to account for excessive overbreak or blast fracturing? Although procedures should adequately monitor and control overbreak, what procedures are planned for occasional excessive conditions?

NRC comment 4 - None.

NRC comment 5 - It is suggested that pressure monitors be emplaced to measure the pressure in the shaft lining because of the possibility of water flow in fractures surrounding the shaft.

NRC comment 6 - None.

Section 2: Construction Plans and Procedures

We feel that conventional construction practices and quality control procedures are adequate, and that DOE has presented an adequate discussion.

Section III: Sealing or Grouting Plans and Procedures

Given the expected minimal sealing requirements at Yucca Mountain, we believe that adequate seals and placement techniques can be developed prior to decommissioning and the DOE discussion is adequate. However, further discussion is required in the event the exploratory facility is to be included with the repository, in which case the extremely long-term sealing capabilities must be substantiated.

Section IV: Construction Testing and Inspection Plans and Procedures
Section V: Plans and Procedures for Gathering Specific Information Related to Site Characterization

We generally agree with the DOE response because the test and/or inspection procedures are either based on standard engineering practice or have not yet been developed.

Section VI: Quality Assurance

No comment.