



United States Department of the Interior

BUREAU OF MINES

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Denver Research Center
Ground Control Division

November 7, 1983

Mr. John Greeves
Chief, Engineering Branch
Nuclear Regulatory Commission
Millste Building, 6th Floor
Silver Springs, Maryland 20555

WM Record File
R6-334

WM Project 10, 11, 16

Docket No. _____

PDR

LPDR (H.N.S.)

J. Greeves

PT. 10, 11, 16

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Dear Mr. Greeves:

Attached are two trip reports as requested on meetings held in Silver Springs, Maryland and Columbus, Ohio relating to nuclear waste repository in salt deposits.

If you have any questions relating to either, please contact me.

Sincerely,

Edward E. Hollop
Research Supervisor

Attachments

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NUCLEAR REGULATORY COMMISSION

WORKSHOP

Premeeting Repository Design,
In situ Testing and Exploratory
Shaft Design and Construction for Salt

October 12-13, 1983

DENVER RESEARCH CENTER
GROUND CONTROL DIVISION

Trip Report

Traveler: F. F. Hollop, Research Supervisor

Dates of Travel: October 12-13, 1983

Destination: Nuclear Regulatory Commission, Silver Springs, Maryland

Purpose: To attend the NRC Workshop on Repository Design, In Situ Testing and Exploratory Design and Construction for Salt.

Participants:

Mr. Ludwig Hartung	Design Coordinator for Salt Sites
Dr. Jaak Naemen	Golder Associates Inc. (GAI)
Dr. L. Gonano	Golder Associates Inc. (GAI)
Mr. Frank Kendorski	Engineers International (EI)
Mr. Ed Hollop	Bureau of Mines (ROM)
Mr. Kris Wahi	Sandia National Lab. (SNL)
Mr. Robert Johnson	U.S. NRC
Dr. Mysore Nataraja	U.S. NRC
Mr. Jay Rhoderick	U.S. NRC
Mr. Trueman Seamans	U.S. NRC
Mr. David Tiktinsky	U.S. NRC
Ms. Kristin Westhrook	U.S. NRC
Dr. Ernst Zurflueh (Res)	U.S. NRC

Summary of Actions and Accomplishments

At the request of the Nuclear Regulatory Commission (NRC), a pre-meeting was attended at the Willste Building, Silver Springs, Maryland to discuss repository design, in situ testing and exploratory shaft design and construction for salt. The meeting covered subjects relating to an upcoming meeting with the Department of Energy (DOE) and Office of Nuclear Waste Isolation (ONWI) at Columbus, Ohio, November 25-26, 1983.

The Bureau of Mines (ROM) participation was relegated to technical assistance in the area of in situ testing with specific issues related to ground stability, engineered barriers, and stress thermal, mechanical, hydrological and chemical factors. The ROM will initially provide assistance in evaluating in situ testing in the exploratory shaft phase of the program.

The main emphasis for the pre-meeting was to develop a strategy for the NRC/ONWI meeting October 25-26, 1983. The ROM would attend the meeting at the request of NRC in accompaniment of Golder Associates and Sandia National Laboratory.

FOURTH DOE/NRC PRE-SCP MEETING

Repository Design, Exploratory Shaft and In Situ Testing

East Conference Room
Rattelle Memorial Institute
Columbus, Ohio

October 25-26, 1983

DENVER RESEARCH CENTER
GROUND CONTROL DIVISION

Trip Report

Traveler: E. F. Hollop, Research Supervisor

Dates of Travel: October 25-26, 1983

Destination: Rattelle Memorial Institute, Columbus, Ohio

Purpose: To attend the NRC/DOE Fourth Pre-SCP Meeting

Participants:

Nuclear Regulatory Commission
Department of Energy
Office of Nuclear Waste Isolation
Bureau of Mines
Golner Associates
Sandia National Laboratory

Parsons Redpath
Fluor Engineering
State of Texas
State of Louisiana
State of Utah
State of Mississippi
Los Alamos National Laboratory

Summary of Actions and Accomplishments: At the request of the Nuclear Regulatory Commission, the Bureau of Mines (ROM), Department of Interior, provided technical assistance in response to a Site Characterization Plan (SCP) presented to NRC at the Fourth DOE/NRC Meeting relating to the repository, design, exploratory shaft, and in situ testing. The ROM participated as a reviewer of the program presented by the Office of Nuclear Waste Isolation (ONWI) at the above meeting. The main area of review relegated to the ROM was in situ testing.

Specific areas of coverage were:

- (1) Method of shaft sinking.
 - (a) conventional
 - (b) blind drilling
- (2) Shaft liners in relationship to in situ testing.
- (3) In situ testing to define suitability of site.
- (4) Increase of in situ site from 300-700 feet.
- (5) Recommend in situ testing above and below mine horizon.
- (6) Specify pillar design and specific in situ testing.
- (7) DOE should address gassy mine issue in relationship to design changes necessary.

In general, the DOE/ONWI presentation was of a generic nature since a specific site for the repository has not been chosen. Therefore, suggestions and recommendations by the ROM for rock mechanic instrumentation for in situ testing was held to a non-specific status. At present, five sites are under consideration with reduction to three by Spring of 1984. Further meetings will be scheduled as decisions on site location, shaft drilling methods, and in situ testing are made.

The ROM will be included in further meetings as decisions are finalized. Then, specific recommendations will be made as to the in situ testing in salt repository. Past experience of the ROM is relevant to application of nuclear waste burial in salt deposits. Stress and strain measurement devices and the evaluation methods are presently available within the Bureau of Mines.