

July 19, 1984

Sandia National Laboratories

Albuquerque, New Mexico 87185

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NATARAJA

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Mysore S. Nataraja
Waste Management Engineering Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Spring, MD 20910

Dear Dr. Nataraja:

Enclosed please find a "Trip Report" based on my recent attendance at the 25th Symposium on Rock Mechanics in Evanston, Illinois.

If you have any questions, please contact me at FTS 844-6268.

Sincerely,

Krishan Wahi
Waste Management Systems
Division 6431

KKW:6431:vr

Copy to:
NRC J. Peschel
6431 M. S. Y. Chu

8409060209 840719
PDR WMRES EXISANL
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Trip Report

The twenty-fifth Symposium on Rock Mechanics was held in Evanston, Illinois on June 25-27, 1984. Due to other commitments, I was only able to attend the sessions on June 27. Fortunately, all the papers related to nuclear waste isolation were presented on June 27 (Wednesday).

Due to a much higher interest in waste isolation than was initially anticipated, the program organizers added two more papers and allowed for a panel discussion of one hour at the end of the afternoon session.

John Greeves of NRC presented a paper (with R. Wright as co-author) titled "Reasonable Assurance and its Relationship to In-situ Testing for High-Level Waste Repositories."

The panel consisted of John Greeves, Frank Kendorski, Bill McClain, David Pentz, Jay Rhoderick, and Jim Russell. A large portion of the panel debate was on the issue of what in-situ testing (if any) and what geotechnical data gathering should be completed prior to license application.

In addition to those shown on the enclosed agenda for Wednesday afternoon, the following papers presented at the symposium are considered relevant to high-level waste disposal:

Fuenkajorn, K. and J. Daemen, "Experimental Assessment of Borehole Drilling Damage in Basaltic Rocks."

Mao, N. et al., "Using a Sonic Technique to Estimate In-Situ Stresses."

Teufel, L. and N. Warpinski, "Determination of In-Situ Stress from Anelastic Strain Recovery Measurements of Oriented Core: Comparison to Hydraulic Fracture Stress Measurements in the Rollins Sandstone, Piceance Basin, Colorado."

Lu, P., "Mining-Induced Stress Measurement With Hydraulic Borehole Pressure Cells."

Morgan, H., "Analysis of Borehole Inclusion Stress Measurement Concepts Proposed for Use in the Waste Isolation Pilot Plant (WIPP)."

Kafritsas, J., "Coupled Deformation/Flow Analysis with the Distinct Element Method."

Swolfs, H., "Site Characterization Studies of a Volcanic Cap Rock."

LaPointe, P., "Successful Prediction of In-Situ Fracture Permeability and Stiffness Characteristics Through Statistical Rock Mass Characterization."

Morrow, C. and J. Byerlee, "Frictional Sliding and Fracture Behavior of Some Nevada Test Site Tuffs."

Zimmerman, R. et al., "Ambient Temperature Testing of the G-Tunnel Heated Block."

Abramson, L., "Rock Support for Nuclear Waste Repositories."

Nelson, J. and P. Kelsall, "Prediction of Long Term Creep Closure in Salt."

Abel, J. and F. Djahanguiri, "Design of a Salt Repository Based on Field Verification."

Kim, K. and W. McCabe, "Geomechanics Characterization of a Proposed Nuclear Waste Repository Site in Basalt."

*****REVISED AGENDA*****

WEDNESDAY AFTERNOON - NUCLEAR WASTE ISOLATION: STATUS OF ROCK MECHANICS
(June 27, 81) CONSIDERATIONS

AUDITORIUM

Chairmen: William R. Judd, Purdue University
Francis S. Kendorski, Terraform Engineers, Inc.

(2) 2:00 - 2:20 "Repository Exploration"
David L. Pentz, Golder Associates

(5) 2:20 - 2:40 "Laboratory Testing for Repository Characterization:"
James E. Russell, Neil L. Carter, John Handin,
Texas A&M University

(4) 2:40 - 3:00 "Hydrogeologic Overview of the Nuclear Waste Isolation
Program"
Irwin Remson, Stanford University * * *

3:00 - 3:20 "A Geologic High Level Nuclear Waste Repository
Considered as an "Underground Facility Design Problem"
Francis S. Kendorski, Terraform Engineers, Inc.

3:20 - 3:40 BREAK

3:40 - 4:00 "Policy Questions Related to the Role of Field Testing
in the Establishment of a Radioactive Waste Repository"
William A. Hustrulid, Colorado School of Mines
William C. McClain, RE/SPEC, Inc.

(1) — 4:00 - 4:20 "In Situ Testing Strategy for HLW Repositories" *
Jav Rhoderick, U. S. Department of Energy

4:20 - 4:40 "Reasonable Assurance and Its Relationship to In Situ
Testing for HLW Repositories" *
John T. Greeves and Robert J. Wright,
U. S. Nuclear Regulatory Commission

4:40 - 5:30 Panel Discussion on Nuclear Waste Isolation
Above seven presenters will be panel members
Referee: Bill Judd
Rules: Illinois State Boxing Commission

*****REVISED AGENDA*****

* Papers available before session