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Albuquerque, New Mexico 87185

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A-1755

WM Project: LO-11,16

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LPDR -B,N,S

July 11, 1984

Distribution:

NATARAJA

HITTA

(Return to WM, 623-SS)

Jean Tinkler

23

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

Dear Dr. Nataraja:

The enclosed monthly report summarizes the activities during the month of June for FIN A-1755.

If you have any questions, please feel free to contact either myself at FTS 844-9931 or Krishan Wahi at FTS 844-6268.

Sincerely,

*Margaret S. Chu*

Margaret S. Chu  
Waste Management Systems  
Division 6431

MSC:6431:jm

Copy to:

6431 R. M. Cranwell

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PDR WMRES EXISANL  
A-1755 PDR

PROGRAM: Coupled Thermal-Hydrological- FIN#: A-1755  
Mechanical Assessments and  
Site Characterization  
Activities for Geologic  
Repositories

CONTRACTOR: Sandia National Laboratories BUDGET PERIOD: 3/84-  
9/84

DRA PROGRAM MANAGER: M. S. Nataraja BUDGET AMOUNT: 250K

CONTRACT PROGRAM MANAGER: R. M. Cranwell FTS PHONE: 844-8368

PRINCIPAL INVESTIGATOR: M. S. Y. Chu FTS PHONE: 844-9931

#### PROJECT OBJECTIVES

To provide technical assistance to NRC in the assessment of coupled thermal-hydrological-mechanical phenomena and site characterization activities for high-level waste repositories.

#### ACTIVITIES DURING JUNE 1984

##### Activities and Accomplishments

Work continued into improving the description of shaft seal failure scenarios for bedded salt. A generalized network flow version of DNET was tested with a sample problem and matched with the results from the fixed network version of DNET. The generalized model permits a variable number of legs in the flow network, unlike the fixed network previously defined by DNET.

The NSTF heater test problem is being designed and the data gathered from literature. A summer student, Margarita Crocker, is assisting SNLA in setting up a coupled thermal-hydrological problem on the STEALTH code that will presumably help in the understanding of near-field coupling mechanisms. This is also expected to shed some light on the definition of the disturbed zone. It is noted that Ms. Crocker's time is free of cost to NRC; however, some computer time and Krishan Wahi's time in guiding her will be charged to this project.

Krishan Wahi and Jaak Daemen attended the 25th Symposium on Rock Mechanics (June 25-27, 84) in Evanston, Illinois. The afternoon session on June 27 was devoted to the subject of "Nuclear Waste Isolation: Some Rock Mechanics Considerations." Dr. John Greeves of NRC presented a paper in that session.

Efforts also continued in reviewing the EAs on various salt sites and other related material such as DOE's Revised Siting

Guidelines. During July, we expect to continue the heater test simulations, limited analysis of the shaft seal failure scenarios, and review of salt EAs. In addition, document reviews will be performed at NRC's request.