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Sandia National Laboratories

Albuquerque, New Mexico 87185

February 17, 1984

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Mr. Peter M. Ornstein  
Geotechnical Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
7915 Eastern Avenue  
Silver Spring, MD 20910

WM Record File

A-1158

WM Project

1011/16

Docket No.

PDR

LPDR (C, N, S)

Distribution:

P. Ornstein

Town-Ticket

P. Hite

(Return to WM, 623-SS)

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Dear Mr. Ornstein:

Enclosed is the monthly report on FIN A-1158, Repository Site  
Description and Technology Transfer for January 1984.

Please feel free to contact me if you have any questions or  
comments.

Sincerely,

*Nestor R. Ortiz*

Nestor R. Ortiz, Supervisor  
Waste Management Systems  
Division 6431

NRO:6431:jm

Enclosure

Copy to:

Office of the Director, NMSS  
Attn: Program Support  
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PDR WMRES EXISANL  
A-1158 PDR

PROGRAM:	Repository Site Data and Technology Transfer	FIN#:	A-1158
CONTRACTOR:	Sandia National Laboratories	BUDGET PERIOD:	10/83 - 9/84
NMSS PROGRAM MANAGER:	P. M. Ornstein	BUDGET AMOUNT:	\$570K
CONTRACT PROGRAM MANAGER:	N. R. Ortiz	FTS PHONE:	844-5644
PRINCIPAL INVESTIGATORS:	R. L. Hunter M. D. Siegel	FTS PHONE:	846-5421 846-5448

#### PROJECT OBJECTIVES

The first objective is to insure through technical support, problem definition, and documentation the timely, thorough, and efficient transfer of the information, analysis techniques, and analysis tools developed for the U.S. Nuclear Regulatory Commission (NRC) by the methodology program. The second objective is to develop reference repositories in media other than bedded salt (i.e., basalt, domed salt, welded tuff, and granite).

#### ACTIVITIES DURING JANUARY 1984

##### Technology Transfer

The draft of the SWIFT II Self-Teaching Curriculum is being prepared by Mark Reeves (Geotrans Inc.) and is expected to be received at Sandia by February 24, 1984. This draft has been somewhat delayed by the simultaneous preparation of the Verification and Validation report for the SWIFT code by M. Reeves under FIN A-1166.

The draft of the SWIFT II Self-Teaching Curriculum will be reviewed by Sandia staff and a draft copy will be forwarded to NRC for their comment.

The camera-ready copy is expected to be available by the end of March, 1984; however, the date is dependent upon the degree of revision required of this draft document.

##### Short Term Technical Assistance

Authorization was received this month to perform three short term TA tasks:

- Task 1. Completion of scoping exercises for sensitivity study to assess the importance of colloid transport of radionuclides.
- Task 2. Calculations of sensitivity of radionuclide discharge to rate constants for reactions between radionuclide species with different retardation factors.
- Task 3. Calculations of radionuclide solubility in basaltic ground water.

During January, no activity was carried out under Task 1. Under Task 2, the analysis presented in the letter completed under the previous short term contract (Letter Report: Calculations of Sensitivity . . . Radionuclide Species, dated December 20, 1983) was continued. A method to include reversible, rapid reactions into the calculations was investigated. A computer program to plot EPA compliance curves as described in the letter report was also improved to use in sensitivity/parametric analyses. No activity was carried out under Task 3 during this month.

#### Repository Site Data (RSD)

The activity on this task remains at a low level pending approval of the program plan for unsaturated tuff.

During January, isopach maps were constructed for the Pah Canyon, Yucca Mountain, and Topopah Spring members of the paintbrush tuff. The Yucca mountain and Pah Canyon maps have 50 foot contour intervals, and the Topopah Spring map has a 100-foot interval.

At NRC's request, K. Wahi participated in a Data Review Visit to Richland, Washington from January 24 through 26, 1984. The visit included presentations by the BWIP staff, visits to the Near Surface Test Facility (NSTF), the rock-mechanics laboratory, and the core-storage area. Appropriate BWIP staff members were available to answer questions on specific tests and to show data to the visiting NRC team. A copy of some material on the NSTF heater tests that were given to Wahi already has been sent to M. Nataraja (NMSS). A copy of the trip report is attached.

A review of ONWI-495 (Application of Integral methods to Prediction of Heat Transfer from a Nuclear Waste Repository) is in progress and is expected to be completed by mid-February.

### Milestones

Pending agreement of program plan for unsaturated tuff RSD with NRC.

### Anticipated Problems

Delays in the approval of the program plan for the unsaturated tuff RSD report require adjustments in the dates of the milestones.

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0976.010  
January 1984

THIS IS AN ESTIMATE ONLY AND MAY NOT MATCH THE INVOICES SENT TO NRC BY SANDIA'S ACCOUNTING DEPARTMENT.

	Month	Current Year-to-Date
I. Direct Manpower (man-months of charged effort)	0.2	1.7
II. Direct Loaded Labor Costs	2.0	17.0
Materials and Services	3.0	3.0
ADP Support (computer)	0.0	0.0
Subcontracts*	5.0	22.0
Travel	0.0	1.0
Other	0.0	0.0
TOTAL COSTS	10.0	43.0

Other = rounding approximation by computer

### III. Funding Status

Prior FY Carryover	FY84 Projected Funding Level	FY84 Funds Received to Date	FY84 Funding Balance Needed
175K	175K	175K	None

\*Geotrans Inc., Raytheon Service Co.

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0976.020  
January 1984

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NRC BY SANDIA'S ACCOUNTING DEPARTMENT.

	Month	Current Year-to-Date
I. Direct Manpower (man-months of charged effort)	1.7	8.0
II. Direct Loaded Labor Costs	15.0	80.0
Materials and Services	0.0	0.0
ADP Support (computer)	0.0	1.0
Subcontracts*	15.0	46.0
Travel	1.0	2.0
Other	<u>0.0</u>	<u>+1.0</u>
TOTAL COSTS	31.0	130.0

Other = rounding approximation by computer

III. Funding Status

Prior FY Carryover	FY84 Projected Funding Level	FY84 Funds Received to Date	FY84 Funding Balance Needed
395K	395K	395K	None

\*Energy Management and Technology; OAO; Nutall and Assoc., Inc.,  
SAI, Raytheon.

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TOTAL FOR 0976.010 and 0976.020

January 1984

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		Month	Current Year-to-Date
I.	Direct Manpower (man-months of charged effort)	1.9	9.7
II.	Direct Loaded Labor Costs	17.0	97.0
	Materials and Services	3.0	3.0
	ADP Support (computer)	0.0	1.0
	Subcontracts	20.0	68.0
	Travel	1.0	3.0
	Other	<u>0.0</u>	<u>1.0</u>
TOTAL COSTS		41.0	173.0

Other = rounding approximation by computer

III. Funding Status

Prior FY Carryover	FY84 Projected Funding Level	FY84 Funds Received to Date	FY84 Funding Balance Needed
570K	570K	570K	None