

Sandia National Laboratories

Albuquerque, New Mexico 87185

WM DOCKET CONTROL CENTER

August 15, 1986

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A1158  
SNL

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

Distribution:  
Coleman  
Hill  
(Return to WM, 623-SS)  
Joan-Licket  
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Neil M. Coleman  
Hydrology Section  
Geotechnical Branch  
Division of Waste Management  
U.S. Nuclear Regulatory Commission  
7915 Eastern Avenue  
Silver Spring, MD 20910

Dear Mr. Coleman:

Enclosed is the monthly report on FIN A-1158, Repository Site Definition and Technology Transfer for July 1986. Please feel free to contact me if you have any questions or comments.

Sincerely,

*Robert M. Cranwell*

Robert M. Cranwell, Supervisor  
Waste Management Systems  
Division 6431

RMC:6431

Enclosure

Copy to:  
Office of the Director, NMSS  
Attn: Program Support  
Robert Browning, Director  
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Philip Justus  
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Enrico Conti, Branch Chief  
Health Siting & Waste Management Division  
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6431 C. P. Harlan  
6431 G. F. Wilkinson

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PDR WMRES EXISANL  
A-1158 PDR

PROGRAM: Repository Site Definitions

FIN#: A-1158  
Task I

CONTRACTOR: Sandia National  
Laboratories

BUDGET PERIOD: 10/85 -  
9/86

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: - 0 -

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATORS: G. F. Wilkinson  
C. P. Harlan

FTS PHONE: 844-0074  
FTS PHONE: 844-8164

PROJECT OBJECTIVE

To develop RSDs for candidate host media and provide data for use in developing and testing performance assessment methodologies for the various media.

ACTIVITIES DURING JULY 1986

No activity.

PROGRAM: Technology Transfer

FIN#: A-1158  
Task II

CONTRACTOR: Sandia National  
Laboratories

BUDGET PERIOD: 10/85 -  
9/86

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$115K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATORS: G. F. Wilkinson  
C. P. Harlan

FTS PHONE: 844-0074  
FTS PHONE: 844-8164

#### PROJECT OBJECTIVE

To provide technical support for the transfer of the capability to use the information, analytical techniques, and tools developed for the NRC under the Performance Assessment Methodology program (FIN A-1266).

#### ACTIVITIES DURING JULY 1986

##### SWIFT II Self-Teaching Curriculum (STC)

Sandia management sign-off was completed, and a camera-ready copy of the SWIFT II STC was transmitted to Pat Larkins of the NRC Publications Department on July 17, 1986. In addition, 500 copies of microfiche containing data input and output of sample problems 1-8 were transmitted for inclusion in the report.

##### SWIFT II Seminar

Preparation continued for the SWIFT II technology transfer seminar. A copy of the agenda was telefaxed to the NRC on August 4. As previously agreed, the course will be held on August 19-22, with 10-15 attendees. On August 6, a partial package of course materials was sent by Federal Express. Receipt was confirmed by Neil Coleman. Sandia staff members participating in the seminar who will charge travel expenses to A-1158 include Charlene Harlan, Paul Davis and Tito Bonano.

##### TOUGH Code Documentation

NRC's comments on the TOUGH code user's guide were received in early August and will be transmitted to Dr. Pruess for incorporation.

PROGRAM: Maintenance of Computer Codes

FIN#: A-1158  
Task III

CONTRACTOR: Sandia National  
Laboratories

BUDGET PERIOD: 10/85 -  
9/86

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$175K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATORS: G. F. Wilkinson  
C. P. Harlan

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FTS PHONE: 844-8164

#### PROJECT OBJECTIVE

To implement a quality assurance program to maintain computer codes, detect and correct errors, document changes, and inform the NRC staff.

#### ACTIVITIES DURING JULY 1986

In conjunction with review of the draft user's guide, the latest version of the TOUGH code was installed on the Sandia NOS operating system. We compiled the code and ran the six sample problems. Output from our runs compared well with that contained in the draft documentation for problems 1,2,4 and 5. Comparisons for some of the results in problems 3 and 6, however, were poor. We plan to discuss these results with Dr. Pruess and resolve this issue.

PROGRAM: Code Validation and Verification

FIN#: A-1158  
Task IV

CONTRACTOR: Sandia National  
Laboratories

BUDGET PERIOD: 10/85 -  
9/86

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$87K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATORS: G. F. Wilkinson  
C. P. Harlan

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#### PROJECT OBJECTIVE

To assemble the various tests that have been performed to help validate and verify various portions of relevant codes and recommend any additional feasible tests.

#### ACTIVITIES DURING JULY 1986

We have found that single porosity verification/validation problems for SWIFT II are very complete with respect to flow, heat transfer and contaminant transport. In addition, several verification/validation problems have been run for dual porosity or confining media models. They include contaminant transport for a radionuclide and fluid flow and heat transport in a confining medium. Areas which appear to be lacking verification/validation problems have been identified, and further research is being conducted.

PROGRAM: Short-term Technical Assistance

FIN#: A-1158  
Task V

CONTRACTOR: Sandia National  
Laboratories

BUDGET PERIOD: 10/85 -  
9/86

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$39K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATORS: G. F. Wilkinson  
C. P. Harlan

FTS PHONE: 844-0074

FTS PHONE: 844-8164

PROJECT OBJECTIVE

To provide general technical assistance on waste management matters relating to Tasks I-IV.

ACTIVITIES DURING JULY 1986

No activity.

A-1158, Task I  
 0976.010  
 July 1986

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

	Current Month -----	Year -to- Date ----
I. Direct Manpower (man-months of charged effort)	0.0 ---	0.0 ---
II. Direct Loaded Labor Costs	0	0
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	0	0
Travel	0	0
Other (computer roundoff)	0	0
	---	---
TOTAL COSTS	0	0

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
None	None	None	None

A-1158, Task II  
 0976.020  
 July 1986

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

	Current Month -----	Year -to- Date ----
I. Direct Manpower (man-months of charged effort)	2.4 ---	7.0 ---
II. Direct Loaded Labor Costs	23	62
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	*23	27
Travel	0	0
Other (computer roundoff)	0	1
	-----	-----
TOTAL COSTS	46	90

\* Some of these charges are only accruals and not actual costs.

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
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\$115K

-0-

A-1158, Task III  
 0976.030  
 July 1986

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

	Current Month -----	Year -to- Date ----
I. Direct Manpower (man-months of charged effort)	0.5 -----	8.8 -----
II. Direct Loaded Labor Costs	5	74
Materials and Services	0	0
ADP Support (computer)	3	12
Subcontracts	*26	5
Travel	0	0
Other (computer roundoff)	-1	2
	-----	-----
TOTAL COSTS	33	93

\* Some of these charges are only accruals and not actual costs.

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
	\$175K		-0-

A-1158, Task IV  
 0976.040  
 July 1986

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

	Current Month -----	Year -to- Date -----
I. Direct Manpower (man-months of charged effort)	0.1 ---	1.9 ---
II. Direct Loaded Labor Costs	1	14
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	*24	19
Travel	0	1
Other (computer roundoff)	0	1
	-----	-----
TOTAL COSTS	25	35

\* Some of these charges are accruals and not actual costs.

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
	\$87K		-0-

A-1158, Task V  
 0976.050  
 July 1986

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

	Current Month -----	Year -to- Date ----
I. Direct Manpower (man-months of charged effort)	0.0 ---	0.6 ---
II. Direct Loaded Labor Costs	0	5
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	0	0
Travel	0	0
Other (computer roundoff)	0	0
	-----	-----
TOTAL COSTS	0	5

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
	\$39K		-0-

A-1158

Total for 0976.010, 0976.020, 0976.030, 0976.040 and 0976.050  
July 1986

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

	Current Month -----	Year -to- Date -----
I. Direct Manpower (man-months of charged effort)	3.0 -----	18.3 -----
II. Direct Loaded Labor Costs	29	155
Materials and Services	0	0
ADP Support (computer)	3	12
Subcontracts	* 73	51
Travel	0	1
Other (computer roundoff)	-1	4
	-----	-----
TOTAL COSTS	104	223

\* Some of these charges are accruals and not actual costs.

III. Funding Status

Prior FY Carryover -----	FY 86 Projected Funding Level -----	FY 86 Funds Received to Date -----	FY 86 Funding Balance Needed -----
\$150K	\$486K **	\$336K **	- 0 -

\*\* \$70K of these funds were transferred to A-1755 by NRC Form 173  
dated April 4, 1986.