

Sandia National Laboratories

Albuquerque, New Mexico 87185

October 15, 1987

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 September 1987. Please feel free to contact me at FTS 844-8368 or Charlene Harlan at FTS 844-8164 if you have any questions or comments.

Sincerely,

Robert M. Cranwell

Robert M. Cranwell, Supervisor
Waste Management Systems
Division 6416

RMC:6416

Copy to:
Office of the Director, NMSS
Attn: Program Support
Robert Browning, Director
Division of Waste Management
Philip Justus
Division of Waste Management
Ronald L. Ballard, Branch Chief
Division of High-Waste Management
John Randall
Division of Radiation Programs and
Earth Sciences
6400 R. C. Cochrell
6410 N. R. Ortiz
6416 R. M. Cranwell
6416 P. A. Davis
6416 C. P. Harlan
6416 G. F. Wilkinson

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PDR WMRES EXISANL
A-1158 PDR

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WM Project: WM-10, 11, 16

PDR w/encl

(Return to WM, 623-55)

WM Record File: A-1158

LPDR w/encl

MANAGEMENT ISSUES

The current Statement of Work closes A1158 on September 30, 1987. Our approximate carryover is \$81K. It is our understanding per a letter from the A1158 Program Manager dated October 6, 1987, that a no-cost extension was requested in an NRC Form 173 September 29, 1987, to continue this project until December 31, 1987.

PROGRAM: Task I, Technology Transfer

FIN#: A-1158

CONTRACTOR: Sandia National Laboratories

BUDGET PERIOD: 10/86 -
9/87

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$150K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATOR: C. P. Harlan

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 SEPTEMBER 1987

A camera-ready copy of the NEFTRAN User's Manual, NUREG/CR-4766 was submitted to Sandia publications early September. This work has been funded jointly by A1158 and A1266 (NRC/NRR). A camera-ready copy of the TOUGH User's Guide, NUREG/CR-4645 was submitted to NRC publications the later part of June. Both reports are expected to be printed at any time. This will complete all work under Task I.

Travel costs invoiced during September were incurred by Paul Davis during August. He gave an invited talk to the National Academy of Sciences Water Science and Technology Panel on August 17, 1987 at the NAS Study Center in Woods Hole, Massachusetts. Please refer to the August 1987 progress report for more information on this trip.

A-1158, Task I, Technology Transfer
 0976.020
 SEPTEMBER 1987

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 ---	4.7 ---
II. Direct Loaded Labor Costs	0	37
Materials and Services	0	1
ADP Support (computer)	0	0
Subcontracts	-10	104
Travel	1	1
Other (computer roundoff)	0	1
G & A	-1	-4
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TOTAL COSTS	-10	140

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$ 46K	\$150K	\$104K	\$ OK

PROGRAM: Task II, Maintenance of Computer Codes

FIN#: A-1158

CONTRACTOR: Sandia National Laboratories

BUDGET PERIOD: 10/86 -
9/87

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$174K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATOR: C. P. Harlan

FTS PHONE: 844-8164

PROJECT OBJECTIVE

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

ACTIVITIES DURING SEPTEMBER 1987

Charlene Harlan's time and travel were charged to this task during September for an A1158 Program Review given to the NRC at Silver Spring September 3, 1987. It is anticipated that the travel cost will be invoiced next month. A trip report was provided in the August progress report.

Routine maintenance was performed on the QUALIB system. All on-line documentation was expanded to include a "last update" date to the documentation. The purpose is to provide user's with information on when the last change has occurred to documentation on each code. Routine backups of system changes were also made. In the near future, the same feature will be added to the INEL QUALIB system.

At the close of FY 87, eleven computer codes and their associated data files and procedures are being maintained on the INEL QUALIB system.

These codes are:

- (1) SWIFT
- (2) SWIFT II
- (3) NWFTDVM
- (4) GENNET
- (5) NEFTRAN
- (6) LHS
- (7) DNET
- (8) STEPWISE
- (9) PATH1
- (10) USGS
- (11) TOUGH

In response to your request for more information concerning the preliminary DOE audit of our QA Plan (NUREG/CR-4369), the following suggestions were made for a revised plan. Some of the forms generated for the QA Plan were very specific although as the implementation of the Plan progressed in our current system, better and more thorough techniques have been applied. It was suggested that the intent of these forms be stated in a generic way, but the implementation be allowed to be current with state-of-the-art. The interactive system

referred to on page 9 of the QA Plan was quite specific to hardware available at the time the Plan was being developed. About the time that the report was published, this hardware was removed from Sandia and another computer host made available for QUALIB. A new interactive system was developed in its place, but is not described in the Plan. Other references in the Plan that were appropriate at the time are now obsolete, such as supplying NRC with code changes on cards. Our current implementation of the Code Maintenance Task includes maintaining a QA Library of codes at INEL for the NRC rather than supplying the NRC with tapes or cards containing these codes and leaving the installation, QA and maintenance as their responsibility. In general, it was recommended that the Plan in revision be written in a more generic way, keeping intent but not so specific in implementation. This would require adherence while also providing flexibility in implementation as better techniques are developed.

A-1158, Task II, Maintenance of Computer Codes
 0976.030
 SEPTEMBER 1987

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)	1.2 ---	10.4 ---
II. Direct Loaded Labor Costs	8	81
Materials and Services	0	0
ADP Support (computer)	0	12
Subcontracts	0	21
Travel	0	0
Other (computer roundoff)	1	1
G & A	1	15
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TOTAL COSTS	10	130

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$108K	\$174K	\$ 66K	\$ OK

PROGRAM: Task III, Code Validation and Verification FIN#: A-1158

CONTRACTOR: Sandia National Laboratories BUDGET PERIOD: 10/86 -
9/87

NMSS PROGRAM MANAGER: N. M. Coleman BUDGET AMOUNT: \$50K

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

PRINCIPAL INVESTIGATOR: C. P. Harlan FTS PHONE: 844-8164

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 SEPTEMBER 1987

No activity. Task III is complete.

A-1158, Task III, Code Validation and Verification
 0976.040
 SEPTEMBER 1987

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 ---	0.3 ---
II. Direct Loaded Labor Costs	0	3
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	0	41
Travel	0	0
Other (computer roundoff)	0	0
G & A	0	6
	---	---
TOTAL COSTS	0	50

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$ 50K	\$ 50K	\$ OK	\$ OK

PROGRAM: Task IV, T. A. in Numerical Modeling

FIN#: A-1158

CONTRACTOR: Sandia National Laboratories

BUDGET PERIOD: 10/86 -
9/87

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$65K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATOR: C. P. Harlan

FTS PHONE: 844-8164

PROJECT OBJECTIVE

Provide expert opinion input to NRC reviews of DOE site screening, site characterization, and technical development programs. Work includes numerical modeling assessments and participation in technical meetings, site visits and workshops.

ACTIVITIES DURING SEPTEMBER 1987

During September work continued on editing and incorporating the figures into the BWIP report. In addition, review comments were received from G. Winter of Roy Williams and Associated. We reviewed these comments and will address them in October.

Paul Davis' time and travel were charged to this project during September for an A1158 Program Review given to the NRC at Silver Spring on September 3, 1987. It is anticipated that the travel cost will be invoiced next month. A trip report was provided in the August progress report.

A-1158, Task IV, T. A. in Numerical Modeling
 0976.060
 SEPTEMBER 1987

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 ---	1.9 ---
II. Direct Loaded Labor Costs	4	16
Materials and Services	0	0
ADP Support (computer)	0	0
Subcontracts	14	40
Travel	0	0
Other (computer roundoff)	0	1
G & A	2	6
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TOTAL COSTS	20	63

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$ OK	\$ 65K	\$ 65K	\$ OK

PROGRAM: Task V, Short-term Technical Assistance

FIN#: A-1158

CONTRACTOR: Sandia National Laboratories

BUDGET PERIOD: 10/86 -
9/87

NMSS PROGRAM MANAGER: N. M. Coleman

BUDGET AMOUNT: \$25K

CONTRACT PROGRAM MANAGER: R. M. Cranwell

FTS PHONE: 844-8368

PRINCIPAL INVESTIGATOR: C. P. Harlan

FTS PHONE: 844-8164

PROJECT OBJECTIVE

To provide general technical assistance on waste management matters relating to Tasks I, II, III, and IV.

ACTIVITIES DURING SEPTEMBER 1987

No activity.

A-1158, Task V, Short-term Technical Assistance
 0976.050
 SEPTEMBER 1987

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
G & A	0	0
	---	---
TOTAL COSTS	0	0

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$ 20K	\$ 25K	\$ 5K	\$ 0K

A-1158
 Total for A1158 (Case 0976)
 SEPTEMBER 1987

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)	1.8 ---	17.3 ---
II. Direct Loaded Labor Costs	12	137
Materials and Services	0	1
ADP Support (computer)	0	12
Subcontracts	4	206
Travel	1	1
Other (computer roundoff)	1	3
G & A	2	23
	-----	-----
TOTAL COSTS	20	383

III. Funding Status

Prior FY Carryover -----	FY 87 Projected Funding Level -----	FY 87 Funds Received to Date -----	FY 87 Funding Balance Needed -----
\$224K	\$464K	\$240K	\$0K

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CENTER

'87 OCT 26 P2:34

WM-RES
WM Record File
A1158
SNL

WM Project 10, 11, 16
Docket No. _____

PDR ☒
XLPDR ☒ (B, N, S)

Distribution:

Coleman

* Joan-ticket

(Return to WM, 623-SS)