

**Sandia National Laboratories**

Albuquerque, New Mexico 87185

October 15, 1986

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 1986. 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 6431

RMC:6431

Enclosure

Copy to:  
Office of the Director, NMSS  
Attn: Program Support  
Robert Browning, Director  
Division of Waste Management  
Philip Justus  
Division of Waste Management  
Enrico Conti, Branch Chief  
Health Siting & Waste Management Division  
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6400 R. C. Cochrell  
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6431 C. P. Harlan  
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8611200129 861024  
PDR WMRES EXISANL  
A-1158 PDR

PROGRAM: Task I, Repository Site Definitions

FIN#: A-1158

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 INVESTIGATOR: C. P. Harlan

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 SEPTEMBER 1986

No activity.

PROGRAM: Task II, Technology Transfer

FIN#: A-1158

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 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 1986

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

Corrections to the camera ready copy of the report are being prepared. When complete, it will be transmitted to NRC for reprint of the document.

##### TOUGH User's Guide

Comments to the report are being finalized. Minor modifications to the sample problems may occur as a result of the review.

PROGRAM: Task III, Maintenance of Computer Codes

FIN#: A-1158

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 INVESTIGATOR: C. P. Harlan

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 SEPTEMBER 1986

##### USGS 3-D Model Code

QA of the three sample problems on the Sandia computing system continued. Although results are currently being generated, small discrepancies exist between our output and the USGS User's Manual.

##### TOUGH Code

All sample problems from the User's Manual have been reproduced on the Sandia computing system. This exercise provided additional comments that are being incorporated into the manual. The sample problems may be slightly modified by the author, requiring one final rerun before QA is complete.

##### Ongoing QA of Standard Computer Codes

During FY 86 ongoing sampling of existing codes on the open partition continued. In addition, several standard codes were moved from the CYBER76 computer in the secure partition to the open side as a result of the removal of the CYBER76 computer. QA of these codes was performed to ensure their integrity in the open partition. Backup of all files is maintained on tape.

PROGRAM: Task IV, 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 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 1986

##### SWIFT II Verification/Validation

During September, work continued on the letter report for SWIFT II verification/validation problems. During October, a rough draft of the report should be completed summarizing existing verification and validation problems, along with recommendations of additional areas to be developed.

PROGRAM: Task V, Short-term Technical Assistance

FIN#: A-1158

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 INVESTIGATOR: C. P. Harlan

FTS PHONE: 844-8164

PROJECT OBJECTIVE

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

ACTIVITIES DURING SEPTEMBER 1986

No activity.

A-1158

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

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

|  | Current<br>Month<br>-----  | Year<br>-to-<br>Date<br>---- |
|--|--|------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 3.6<br>---   | 26.8<br>---                  |
| II. Direct Loaded Labor Costs                        | 18   | 207                          |
| Materials and Services                               | 0  | 0                            |
| ADP Support (computer)                               | 2  | 16                           |
| Subcontracts   | -109   | -38                          |
| Travel   | 3  | 4                            |
| Other (computer roundoff)                            | -1   | 3                            |
|  | -----  | -----                        |
| TOTAL COSTS  | -87  | 192                          |
|  | (in addition to 192K costed<br>for FY86, outstanding<br>invoices total 90-95K) |                              |

III. Funding Status

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

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

A-1158, Task I  
0976.010  
September 1986

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

|  | Current<br>Month<br>----- | Year<br>-to-<br>Date<br>---- |
|--|---------------------------|------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 0.0<br>---                | 0.0<br>---                   |
| 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<br>Carryover<br>----- | FY 86 Projected<br>Funding Level<br>----- | FY 86 Funds<br>Received to Date<br>----- | FY 86 Funding<br>Balance Needed<br>----- |
|--------------------------------|---|--|--|
| None                           | None                                      | None                                     | None                                     |



A-1158, Task II  
0976.020  
September 1986

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

|  | Current<br>Month<br>----- | Year<br>-to-<br>Date<br>---- |
|--|---------------------------|------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 0.6<br>---                | 11.6<br>---                  |
| II. Direct Loaded Labor Costs                        | 3                         | 93                           |
| Materials and Services                               | 0                         | 0                            |
| ADP Support (computer)                               | 0                         | 0                            |
| Subcontracts   | -47                       | -14                          |
| Travel   | 3                         | 3                            |
| Other (computer roundoff)                            | 0                         | 1                            |
|  | ---                       | ---                          |
| TOTAL COSTS  | -41                       | 83                           |

### III. Funding Status

| Prior FY<br>Carryover<br>----- | FY 86 Projected<br>Funding Level<br>----- | FY 86 Funds<br>Received to Date<br>----- | FY 86 Funding<br>Balance Needed<br>----- |
|--------------------------------|---|--|--|
|                                | \$115K                                    |  | -0-                                      |

A-1158, Task III  
 0976.030  
 September 1986

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

|  | Current<br>Month<br>----- | Year<br>-to-<br>Date<br>---- |
|--|---------------------------|------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 2.7<br>---                | 12.2<br>---                  |
| II. Direct Loaded Labor Costs                        | 14                        | 93                           |
| Materials and Services                               | 0                         | 0                            |
| ADP Support (computer)                               | 2                         | 16                           |
| Subcontracts   | -31                       | -19                          |
| Travel   | 0                         | 0                            |
| Other (computer roundoff)                            | -1                        | 2                            |
|  | ---                       | ---                          |
| TOTAL COSTS  | -16                       | 92                           |

### III. Funding Status

| Prior FY<br>Carryover<br>----- | FY 86 Projected<br>Funding Level<br>----- | FY 86 Funds<br>Received to Date<br>----- | FY 86 Funding<br>Balance Needed<br>----- |
|--------------------------------|---|--|--|
|--------------------------------|---|--|--|

\$175K

-0-

A-1158, Task IV  
0976.040  
September 1986

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

|  | Current<br>Month<br>----- | Year<br>-to-<br>Date<br>---- |
|--|---------------------------|------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 0.3<br>---                | 2.4<br>---                   |
| II. Direct Loaded Labor Costs                        | 1                         | 16                           |
| Materials and Services                               | 0                         | 0                            |
| ADP Support (computer)                               | 0                         | 0                            |
| Subcontracts   | -31                       | -6                           |
| Travel   | 0                         | 1                            |
| Other (computer roundoff)                            | 0                         | 1                            |
|  | ---                       | ---                          |
| TOTAL COSTS  | -30                       | 12                           |

### III. Funding Status

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

A-1158, Task V  
0976.050  
September 1986

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

|  | Current<br>Month<br>----- | Year<br>-to-<br>Date<br>----- |
|--|---------------------------|-------------------------------|
| I. Direct Manpower (man-months<br>of charged effort) | 0.0<br>---                | 0.6<br>---                    |
| 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<br>Carryover<br>----- | FY 86 Projected<br>Funding Level<br>----- | FY 86 Funds<br>Received to Date<br>----- | FY 86 Funding<br>Balance Needed<br>----- |
|--------------------------------|---|--|--|
|--------------------------------|---|--|--|

\$39K

-0-