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ENGINEERS INTERNATIONAL, INC.

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30 October 1986
Ref. No. 1148-07-03
Project Letter No. 083

WM-RES
WM Record File
D1004
EI

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

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

Distribution:
Buckley Jean - ticket
3/11
(Return to Waf, 623-SS) st

Attention: Mr. John T. Buckley, Project Officer, Mail Stop 623-SS

Subject: Contract No. NRC-02-84-002
"Technical Assistance for In Situ Testing"
EI Project No. 1148
Monthly Progress Report Covering the Period of
01 September through 30 September 1986

Dear Mr. Buckley:

Enclosed is one copy of the subject report as required by the contract.
As required, the following persons are being sent copies:

- Office of the Director, NMSS
- Director, Division of Waste Management
- Contracting Officer
- Chief, High-Level Waste Technical Development Branch.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

ENGINEERS INTERNATIONAL, INC.

Madan M. Singh
Project Manager

8611190238 861030
PDR WMRES EECENGI
D-1004 PDR

MMS/SB/bt

Enclosure

cc: Office of the Director, NMSS (Attn: Program Support Branch) - 1
Director, Division of Waste Management - 2
Contracting Officer - 1
High-Level Waste Technical Dev. Branch (Attn: Branch Chief) - 1

17-A

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ENGINEERS INTERNATIONAL, INC.

EI Project No. 1148

NRC Contract No. NRC-02-84-002

TECHNICAL ASSISTANCE FOR IN SITU TESTING

Monthly Report - 01 September through 30 September 1986

1.0 INTRODUCTION

This report covers the activities of Engineers International, Inc. (EI) during the period of 01 September through 30 September 1986. Professional personnel involved are Messers. Peter J. Huck, Swapan Bhattacharya, Anthony W. Laurito, and Robert A. Cummings.

By mutual agreement of the NRC Project Officer and the EI Project Engineer, reports are not submitted on a monthly basis during periods when no Task Orders are active.

2.0 PROJECT OBJECTIVE

This contract is intended to provide technical assistance to the NRC in reviewing plans and procedures for in situ testing that may be carried out in support of siting and design of a geologic HLW repository. Assistance is to be focused on underground stress, geotechnical instrumentation of test areas, rock mass strength, hydrological instrumentation of test areas, thermomechanical effects, excavation methods, and quality assurance for bulk measurements of geologic properties, as these relate to in situ testing.

Ultimately, these efforts are to aid the NRC in its responsibility for ensuring the proper siting, design, construction, operating, and decommissioning of geologic HLW disposal facilities such that the EPA limits for radionuclide release will not be exceeded.

3.0 ACTIVITIES DURING THE REPORTING PERIOD

3.1 Summary of Activities

Task Order 001. Task Order 001 has been completed.

Task Order 002. Task Order 002 has been completed.

Task order 003. Task Order 003 has been completed.

Task Order 004. Task Order 004 has been completed.

Task Order 005. Task Order 005 has been completed.

Task Order 006. Task Order 006 has been completed.

Task Order 007

Mr. Robert A. Cummings attended SRPO document review meetings at the ONWI Headquarters in Columbus, Ohio and Fluor Advanced Technology Division in Irvine, California between 29 September - 3 October 1986. A trip report and expense report was sent out on 22 October 1986.

Reviews of NNWSI documents continued. The status of the document reviews for all three projects is attached.

Task Order 008

Subtask 01. The lists of mining operations in Nevada and California were received and an initial screening of the mines were made on the basis of

- proximity to Yucca Mountain Site
- type of mining - surface or underground
- commodity mined.

A questionnaire sheet was put together that was to be sent to mine operators.

Subtask 02. The VNETPC and CLIMSIM softwares were received and installed on the EI computer system. To check the validity of the program, a test run was performed using known data. The test was successful and the codes appeared to be working right.

Mr. Richard Harig of Parsons Brinckerhoff and Mr. Robert Steinbaugh of Sandia Laboratories were contacted to request a more recent version of the NNWSI ventilation schematic since discrepancies were found in the published version. However, a recent revision is still under management review and not available to the general public. Mr. Steinbaugh informed EI that the schematic presented in the Parson's report was outdated by about three revisions.

A document search was performed to obtain information on projected thermal loading in the repository drifts.

Subtask 03. Work continued on reviewing information related to sealing aspects at BWIP.

4.0 DIFFICULTIES

No difficulties are presently identified.

5.0 ACTIVITIES PLANNED FOR NEXT REPORTING PERIOD

Task Order 007

Document reviews will continue for the NNWSI project. A document review meeting will be held on 08 October 1986 in Silver Spring, MD, and will be attended by Mr. Cummings.

Task Order 008

Subtask 01. The operators of mines selected on the basis of preliminary screening will be contacted and questionnaires will be sent out.

Subtask 02. The ventilation schematics for the vertical and the horizontal emplacement schemes will be developed and input into the computer.

Subtask 03. Work will continue on the preparation of the point paper.

6.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

Mr. Robert A. Cummings traveled to Columbus, OH and Irvine, CA for a document review meeting during 29 September - 03 October 1986.

7.0 SCHEDULE AND COST PROJECTIONS

The cost summaries to 30 September 1986, broken down by Task Order, are attached. The costs to date, and the cost projections for the next month, are also attached.

Respectfully submitted,

ENGINEERS INTERNATIONAL, INC.


Swapan Bhattacharya
Senior Engineer

SB/bt

Attachments

18-A

ENGINEERS INTERNATIONAL, INC.

CONTRACT NO. NRC-02-84-002

PROJECT COSTS THROUGH SEPTEMBER 1986

<u>Task</u>	<u>Current Month</u>	<u>Cumulative to Date</u>			<u>Total To Date</u>	<u>Cost Projection for September 1986</u>	<u>Total Contract Limit</u>
		<u>FY 1984</u>	<u>FY 1985</u>	<u>FY 1986</u>			
003	- 0 -	\$88,050.59	\$8,505.23	- 0 -	\$96,555.82	- 0 -	\$100,274.00
004	- 0 -	\$65,896.26	\$3,275.74	- 0 -	\$69,172.00	- 0 -	\$109,702.00
005	- 0 -	\$58,486.72	- 0 -	- 0 -	\$58,486.72	- 0 -	\$ 64,952.00
007	\$4,083.17	- 0 -	\$3,436.74	\$62,381.23	\$65,817.97	\$ 5,000.00	\$240,658.00
008	\$7,683.42	- 0 -	- 0 -	\$11,135.21	\$11,135.21	\$10,000.00	\$ 51,710.00

ENGINEERS INTERNATIONAL, INC.

STATUS - 1148 TASK 007

<u>Assign- ment</u>	<u>Subtask</u>	<u>Project</u>	<u>Description</u>	<u>Date Assigned</u>	<u>Date Sent to NRC</u>
01	02	SPRO	Draft EA review	4/17/86	4/07/86
01	02	SPRO	FEA & SCP Planning Meeting	4/17/86	4/10/86
02	01	NNWSI	Binnall et al 1985 - Crit Param		5/09/86
02	01	NNWSI	Langkopf & Gnirk - Rock Mass Class		5/09/86
03	01	SPRO	Bechtel - WIPP Prelim Design	4/20/86	6/19/86
03	01	SPRO	USDOE - Summary WIPP Site/Validation	4/20/86	
03	01	BWIP	FEA Doc Review - Chap 1 - 4	4/20/86	6/18/86
03	01	BWIP	FEA Doc Review - Chap 5 - 7	4/20/86	6/18/86
03	01	NNWSI	FEA Doc Review - Chap 1 - 4	4/20/86	6/16/86
03	01	NNWSI	FEA Doc Review - Chap 5 - 7	4/20/86	6/16/86
03	01	SPRO	FEA Doc Review - Chap 1 - 4	4/20/86	6/27/86
03	01	SPRO	FEA Doc Review - Chap 5 - 6	4/20/86	6/27/86
03	01	SPRO	FEA Doc Review - Chap 7	4/20/86	6/27/86
03	03	BWIP	FEA Doc Review Meeting	4/20/86	6/17/86
03	03	NNWSI	FEA Doc Review - Chap 1 - 4	4/20/86	6/11/86
03	03	NNWSI	FEA Doc Review - Chap 5 - 7	4/20/86	6/16/86
03	03	SPRO	FEA Doc Review - Chap 1 - 6	4/20/86	6/27/86
03	03	SPRO	FEA Doc Review - Chap 7	4/20/86	6/27/86
04	01	BWIP	SD-BWI-TI-274	5/13/86	8/25/86 (Projected)
04	01	BWIP	SD-BWI-ER-012 Rev. 2	5/13/86	6/17/86
04	01	BWIP	SD-BWI-DP-011 Rev. 2	5/13/86	8/25/86
04	01	BWIP	SD-BWI-ER-006	5/13/86	8/25/86
04	01	BWIP	RHO-BWI-SA-123	5/13/86	8/25/86
04	01	BWIP	S.J. Mitchell - Eval DRZ	5/13/86	8/25/86
04	01	BWIP	SD-BWI-DP-041 - Rock Data	5/13/86	8/25/86
04	01	BWIP	J. Vasey - Design/Support Excav	5/13/86	8/25/86
05	01	NNWSI	Keystone 6310-85-1	4/29/86	6/27/86
06	01	BWIP	SD-BWI-TI-299	6/10/86	8/25/86
06	01	BWIP	RHO-BW-ST-73P	6/10/86	
06	01	NNWSI	SAND-84-2620	6/10/86	10/30/86 (Projected)
07	01	NNWSI	Sealing Letter Response	9/11/86	9/17/86
08	01	NNWSI	Draft SCP Chapter 2	8/28/86	10/03/86
09	02	SRPO	Doc Review Meetings Columbus & Irvine	9/11/86	
10	02	SRPO	Doc Review Meeting Shaft Grouting	9/23/86	