



ENGINEERS INTERNATIONAL, INC.

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WM Project 10, 11, 18

Docket No.

PDR

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Distribution:

T. Seaman

(Return to WM, 623-SS)

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High Level Waste Technical Development Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
7915 Eastern Avenue
Mail Stop 623-SS
Silver Spring, MD 20910

Attention: Mr. Trueman Seamans, Mail Stop 623-SS, Project Officer

Subject: NRC Contract No. NRC-02-82-030 (EI Project No. 1085)
"Technical Assistance For Design Reviews"
Monthly Technical Report Covering the Period of
01 May to 31 May 1983

Ladies and Gentlemen:

Enclosed please find one (1) 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

Should you have any questions please do not hesitate to contact the undersigned.

Sincerely,

ENGINEERS INTERNATIONAL, INC.

Rajaram

V. Rajaram
Project Manager

VR/ja
Enclosure

cc: Office of the Director, NMSS
(ATTN: Program Support Branch) - 1
Director, Division of Waste Management - 2
Contracting Officer - 1

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ENGINEERS INTERNATIONAL, INC.

EI Project No. 1085

NRC Contract No. NRC-02-82-030

TECHNICAL ASSISTANCE FOR DESIGN REVIEWS

Tenth Monthly Report - 01 May to 31 May 1983

1.0 INTRODUCTION

This progress report covers the activities of Engineers International, Inc. (EI) during the period 01 May to 31 May 1983. Professional personnel involved were Messrs Kendorski, Hambley, Aucutt, Dunn, Cummings, Wilkey, Mark, Ma, A. Mukherjee, S. Mukherjee, Rahim, and Baker, and Dr. Rajaram. The hours spent on the project by both professional and non-professional personnel are given below:

NAME	TITLE	TASK ORDER: 002		003		004	
		TASK I	TASK II	TASK I	TASK II	TASK I	TASK II
V. Rajaram	Project Manager	10	-	21	-	68	-
F. Kendorski	Engineering Manager	-	-	4	-	5	-
D. Hambley	Project Engineer	6	-	4.50	-	87.50	-
D. Aucutt	Quality Assurance Engineer	-	-	16	-	13	-
R. Cummings	Principal Geol. Engineer	-	-	-	-	7	-
P. Wilkey	Principal Civil Engineer	-	-	8	-	1	-
M. Dunn	Senior Mining Engineer	-	-	-	-	30.50	-
S. Mukherjee	Senior Mining Engr	-	-	-	-	24	-
M. Ma	Staff Engineer	-	-	-	-	112	-
C. Mark	Staff Engineer	-	-	22.50	-	100.50	-
A. Mukherjee	Staff Engineer	-	-	-	-	61.50	-
M. Rahim	Staff Engineer	-	-	-	-	39	-
C. Baker	Geologist	-	-	4	-	68.50	-
B. Kruder	Draftsman	-	-	5.75	-	-	-
L. Todryk	Manager of Adm. Ser.	-	-	2.50	-	3.50	-
J. Anderson	Technical Typist	15.50	-	11.75	-	14	-
K. Onarato	Technical Typist	-	-	17	-	-	-
P. Passi	Technician	-	-	11.50	-	-	-
S. Dahl	Librarian	-	-	14	-	7.50	-
A. Oberoi	Technician	1.50	-	-	-	4.50	-
TOTAL		33	-	142.50	-	647	-

2.0 PROJECT OBJECTIVE

The objective of this contract is to provide technical assistance to the NRC in reviewing site characterization plans and other documents related to repository design and construction to ensure the safety of personnel, and the protection of the population and environment from radionuclide release.

3.0 ACTIVITIES DURING THE REPORTING PERIOD

3.1 Summary of Activities

Task Order 002

The Final Letter Report and Appendix were completed and submitted to the NRC.

Task Order 003

The following documents were received from the NRC during the reporting period:

- letter from O. L. Olson, DOE, to R. J. Wright, NRC, with a list of attachments
- response to NRC Comments on BWIP Exploratory Shaft Construction and Sealing, Revision
- specification No. B-314-CX28048, Construction Specification for Casing Cementing
- specification No. B-314-C-X28038, Construction Specification for Casing Field Welding Services

Revisions to the letter report which resulted from the April 1983 meeting were completed and the letter report was submitted. The RRL-2 core logs and report were reviewed to determine if an explanation of the ten-foot core loss could be inferred. The documents received during the reporting period were reviewed.

Task 004

The following documents were received from the NRC during the reporting period:

- Comments on Issues to be Addressed in an Environmental Assessment and Site Characterization Plan regarding the Proposed Nomination of Yucca Mountain as a potential High-Level Radioactive Waste Repository
- SAND 82-2497, Thermal Response to Emplacement of Nuclear Waste in Long Horizontal Boreholes

Review of Nevada Test Site (NTS) design issues continued. Draft site technical positions were developed and submitted concerning:

- completeness of design criteria
- stability of openings
- repository isolation capability
- compliance with NRC technical criteria on release rates
- shaft and borehole sealing
- design of structures, systems and components important to safety
- quality assurance and personnel training

Detailed review of identified concerns including hydrogeology, engineered barriers, shaft grouting, and waste package conveyance safety systems was commenced.

3.2 Results

Task Order 002

The Final Letter Report and Appendix were completed and submitted to the NRC.

Task Order 003

The draft letter report concerning ES construction, sealing and quality assurance aspects was submitted to the NRC for comment.

Comments were prepared concerning the 10-ft core loss zone in hole RRL-2 and the documents received during the reporting period. These comments will be incorporated into a final letter report which is to be prepared when NRC's comments on the submitted draft letter report have been received.

Task Order 004

Site Technical Positions (STP's) were prepared for the following key design issues and submitted to the NRC for review:

- radionuclide release prior to permanent closure
- retrievability
- isolation capability of the underground facility
- radionuclide release from engineered barriers
- shaft and borehole sealing
- stability of repository openings
- design of structures, systems and components important to safety
- quality assurance and training of personnel

In each STP, background for the issue based on 10CFR60 requirements, a technical position statement detailing information needs required to resolve the issue before license application, and a discussion of the basis for the position statement are provided.

4.0 QUALITY ASSURANCE

The quality assurance program initiated by EI is continually being followed. This includes logging all documents received

from the NRC, a document sign-off sheet accompanied by appropriate signatures for EI documents, and a document control log listing all letters and reports sent by EI in chronological order, each having a reference number.

5.0 DIFFICULTIES

None

6.0 ACTIVITIES PLANNED FOR THE NEXT REPORTING PERIOD

Task Order 003

The draft letter report will be revised and submitted after NRC comments have been received. It will also comment on the following areas:

- additional sealing documents received during May 1983
- the 10-ft core loss zone in borehole RRL-2

Task Order 004

A meeting will be held to discuss NRC comments on the submitted draft STP's. Investigations will focus on areas of critical concern including:

- hydrogeology and transport systems in unsaturated media
- geologic characterization of the Yucca Mountain site
- state-of-the-art of pressure grouting and shaft sealing
- in situ thermomechanical testing planned at Yucca Mountain

7.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

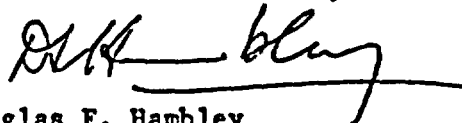
There were no meetings or trips during the reporting period.

8.0 SCHEDULE AND COST PROJECTIONS

Schedule and cost projections for May 1983 are attached.

Respectfully submitted,

ENGINEERS INTERNATIONAL, INC.



Douglas F. Hambley
Project Engineer

DFH/ja