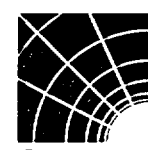


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WM-11(2)
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ITASCA
Consulting Group, Inc.

13 August 1987

David Tiktinsky - SS623
U.S. Nuclear Regulatory Commission
Division of Waste Management
Washington, D.C. 20555

"NRC Technical Assistance
for Design Reviews"
Contract No. NRC-02-85-002
FIN D1016

Dear David:

Enclosed is Progress Report No. 24 for the period 1-31 July 1987
on Task Orders No. 001, 002, 003, 004, and 005, Contract NRC-02-
85-002. Also enclosed is the summary sheet for the July voucher.
Please call me if you have any questions.

Sincerely,

Roger D Hart
Roger D. Hart
Program Manager

*WM-RES
WM Record File
D1016
ITASCA*

WM Project *10, 11, 16*
Docket No. _____
PDR ☒
* LPDR ☒ *(B, N, S)*

Distribution:
* *Tiktinsky* * *Joan-Jicket*
(Return to WM, 623-SS) *JH*

cc: R. Ballard, Engineering Branch
Office of the Director, NMSS
E. Wiggins, Division of Contracts
DWM Document Control Room

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ITASCA MONTHLY PROGRESS REPORT

Progress Report No. 24
NRC Technical Assistance
for Design Reviews

12 August 1987
Contract No. NRC-02-85-002

Reporting Period: 1 - 31 July 1987

1. INTRODUCTION

This progress report summarizes the work performed during July 1987 on NRC Contract No. NRC-02-85-002. During July, work progressed on Task Orders No. 001, 002, 003, 004, and 005.

2. ACTIVITIES DURING THE REPORTING PERIOD

- A. On 2 July, Document Review No. 001-02-34, "Task V, Engineering Study No. 6, Tunnel Optimization" by RKE/PB (SD-BWI-ES-015, Rev. 0, May 1984) was transmitted (Task Order No. 001).
- B. On 8 July, Itasca received authorization to:
 - (1) send a Senior Engineer and the NNWSI Principal Investigator to a 9 July meeting in Silver Spring to discuss NNWSI point papers on in-situ testing and major underground system design components (Task Order Nos. 001 and 003) [Note: Meeting actually held on 16 July—see below.]; and
 - (2) review NNWSI document "Unit Evaluation at Yucca Mountain, Nevada Test Site: Near-Field Thermal and Mechanical Calculations Using the SANDIA-ADINA Code" (SAND83-0030, May 1987) (Task Order No. 001).

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- C. Document Review No. 001-02-32, "Task V, Engineering Study No. 7, Waste Emplacement Optimization" by RKE/PB (SD-BWI-ES-018, May 1984) was transmitted on 8 July (Task Order No. 001).
- D. On 13 July, Progress Report No. 23 and Itasca Invoice No. 023-87-098 were transmitted.
- E. Document Review No. 001-02-037, "Summary Review of Thermomechanical Room-Scale Testing at WIPP" was transmitted on 14 July.
- F. On 16-17 July, L. Lorig and J. Daemen attended a two-day meeting in Silver Spring, Maryland, and Washington, D.C., to discuss strategies for reviewing design/rock mechanics aspects of the NNWSI SCP (Task Orders No. 001 and 003).
- G. Mark Board conducted a two-day training session (22 and 23 July) on the computer codes FLAC and STRES3D. Copies of the codes STRES3D, FLACT, and MUDECT were delivered to the NRC at this time. Additionally, the final draft of the point paper on rockbursting at the Hanford Site was reviewed (Task Order No. 002).
- H. Comments on the final draft of "Identification and Prioritization of Major NNWSI Design Components" were received from J. Peschel on 27 July (Task Order No. 003).

3.0 RESULTS

A. Documents Submitted in July:

- (1) Itasca Document Review No. 001-02-34, "Task V, Engineering Study No. 6, Tunnel Optimization" by RKE/PB (SD-BWI-ES-015, Rev. 0, May 1984) (Task Order No. 001).

Professional labor was completed in June.

- (2) Itasca Document Review No. 001-02-32, "Task V, Engineering Study No. 7, Waste Emplacement Optimization" by RKE/PB (SD-BWI-ES-018, May 1984) (Task Order No. 001).

Professional Labor	M. Board	17 hours
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- (3) Itasca Document Review No. 001-02-037, "Summary Review of Thermomechanical Room-Scale Testing at WIPP" (Task Order No. 001)

Professional Labor	R. Hart	3 hours
	L. Lorig	8 hours

- (4) FLACT/Creep code documentation (Task Order No. 004)

Professional Labor	M. Mack	16 hours
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- (5) MUDECT code documentation (Task Order No. 002)

Professional Labor	M. Mack	34.5 hours
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- (6) STRES3D code review (Task Order No. 001)

Professional Labor	M. Board	8 hours
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- (7) FLACT code documentation (Task Order No. 002)

Professional Labor	M. Christianson	5 hours
	M. Mack	4 hours

B. Works in Progress:

- (1) Document Review No. 001-02-28, "Task V, Engineering Study No. 11, Shaft Casing Design Criteria and Methodology" by RKE/PB (SD-BW-ES-028, April 1986) (Task Order No. 001)

Professional Labor	M. Board	32 hours
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- (2) Document Review No. 001-02-38, "Unit Evaluation at Yucca Mountain, Nevada Test Site: Near-Field Thermal and Mechanical Calculations Using the SANDIA-ADINA Code" by Roy L. Johnson and Stephen J. Bauer (SAND83-0030, May 1987) (Task Order No. 001)

Professional Labor	L. Lorig	17 hours
	M. Mack	0.5 hours

- (3) "Site Technical Position on In-Situ Testing at NNWSI" (Task Order No. 002)

Professional Labor	B. Brady	3 hours
	J. Daemen	22 hours
	L. Lorig	22.5 hours

- (4) "Site Technical Position on In-Situ Testing at SRP" (Task Order No. 002)

Professional Labor	L. Lorig	1 hour
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- (5) "Identification and Prioritization of Major NNWSI Design Components" (Task Order No. 003)

Professional Labor	J. Daemen	18.5 hours
	L. Lorig	11.5 hours

- (6) "Analysis of Continuum vs Discontinuum Modeling for BWIP" (Task Order No. 005)

Professional Labor	M. Board	26 hours
	B. Brady	2 hours

- (7) "Sensitivity Analyses of Key Joint Parameters at BWIP" (Task Order No. 005)

Professional Labor	M. Christianson	4 hours
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- (8) Thermomechanical Analysis for BWIP (Task Order No. 005)

Professional Labor	M. Christianson	55.5 hours
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- (9) Mechanical and Thermomechanical Analyses of DOE's Proposed Conceptual Design for SRP (Task Order No. 005)

Professional Labor	R. Hart	2 hours
	M. Mack	53.5 hours

- (10) "Evaluation of Rockburst Potential at the Hanford Site" (Task Order No. 003)

Professional Labor	M. Board	8 hours
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4.0 QUALITY ASSURANCE

Correspondence logs were monitored and BWIP, NNWSI and SRP documents were received and catalogued.

5.0 DIFFICULTIES

No specific difficulties were encountered during this reporting period.

6.0 ACTIVITIES PLANNED FOR THE NEXT REPORTING PERIOD

- A. Work will continue on preparation of the following tasks:

- (1) continuum versus discontinuum modeling for BWIP (Task Order No. 005);
- (2) sensitivity analysis for key joint parameters for BWIP (Task Order No. 005);
- (3) thermomechanical analysis for SRP (Task Order No. 005);
- (4) "Site Technical Position on In-Situ Testing at NNWSI" (Task Order No. 002); and
- (5) "Evaluation of Rockburst at the Handford Site" (Task Order No. 003).

B. Work to Be Completed in Next Reporting Period

- (1) Final Report, "Identification and Prioritization of Major NNWSI Design Components" (Task Order No. 003); and
- (2) Document Review No. 28, "'Task V Engineering Study No. 11 — Shaft Casing Design Criteria and Methodology" by RKE/B (SD-BW-ES-02, April 1986).

C. Planned Trips

Mark Mack is tentatively scheduled to visit Silver Spring to complete training on the use of the creep logic in FLAC and MUDEC. No specific date has yet been arranged (Task Order No. 004).

7.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

- A. L. Lorig and J. Daemen attended a two-day meeting in Silver Spring and Washington, D.C., 16-17 July, to discuss strategy for reviewing design/rock mechanics aspects of the NNWSI SCP (Task Orders No. 001 and 003)

Professional Labor	J. Daemen	15 hours
	L. Lorig	15 hours

- B. M. Board attended a two-day meeting in Silver Spring, 22-23 July, to review the final draft of the point paper "Evaluation of Rockburst at the Hanford Site" and to train NRC staff in the use of the computer codes FLAC and STRES3D (Task Orders No. 001 and 002).

Professional Labor	M. Board	16 hours
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8.0 SCHEDULE AND COST PROJECTION

The billing summary for the July invoice is attached. Also included are a labor hour summary by task and a summary of the expenditures versus budgets for each task and task order. During July, Task 2 (Document Review) of Task Order No. 001 went overbudget by \$2,129; Task 2 (Identification and Prioritization of Major NNWSI Design Components) of Task Order No. 003 exceeded budget by \$129. In both cases, the total task orders remain within the limits authorized.

Respectfully submitted,



Roger D. Hart
Program Manager
12 August 1987

Attach.
rdh/ks

ITASCA