

PDR - 1
LPDR - WM - 10 (2)
WM - 11 (2)
WM - 16 (2)

WM Record File D-1016
WM Project 10, 11, 16
Docket No. _____
* PDR
* LPDR B, N, S
Distribution: Tiktinsky * J. Hart
Ticket
(Return to WM, 623-SS)



14 April 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. 20 for the period 1-31 March 1987 on Task Orders No. 001, 002, 003 and 004, Contract NRC-02-85-002. Also enclosed is the summary sheet for the March voucher. Please call me if you have any questions.

Sincerely,

Roger D. Hart
Roger D. Hart
Program Manager

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

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WM DOCKET CONTROL CENTER

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ITASCA MONTHLY PROGRESS REPORT

Progress Report No. 20
NRC Technical Assistance
for Design Reviews

14 April 1987
Contract No. NRC-02-85-002

Reporting Period: 1 - 31 March 1987

1. INTRODUCTION

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

2. ACTIVITIES DURING THE REPORTING PERIOD

- A. L. Lorig and J. Daemen attended an Appendix VII visit for NNWSI from 23 February to 5 March. The trip report for this visit was submitted on 16 March. (Task Order No. 001)
- B. J. Daemen attended a 6 March Appendix VII visit to Sandia National Laboratories. The trip report was submitted on 16 March. (Task Order No. 001)
- C. A Request for Proposal for Task Order No. 005 was received from E. Wiggins on 6 March.
- D. On 11 March, authorization was received from D. Tiktinsky for the following:
 - (1) attendance at the Appendix VII visit to the NNWSI program in Las Vegas (22 February - 5 March) and wrap-up meeting on 6 March at Sandia (Task Order No. 001);
 - (2) completion of the following BWIP document reviews: Task V Engineering Studies Nos. 5-9 and 11 and Draft SCP Chapter 2 (NOTE: These documents were received from J. Buckley on 6 March 1987.) [Task Order No. 001]; and

ITASCA

- (3) attendance at a one-day meeting to discuss the outline of the in-situ testing point paper for salt on 12 March 1987 (Task Order No. 002).
- E. On 12 March, the Task Order No. 005 proposal was sent to M. Little.
- F. R. Hart and L. Lorig attended the 12 March In-Situ Testing Point Paper Outline Review meeting in Silver Spring. The trip report was submitted on 16 March. (Task Order No. 002)
- G. A letter denying change in status from consultant to subcontractor for K. Wahi was received from E. Wiggins on 16 March.
- H. Progress Report No. 19 and Itasca Invoice 019-87-020 were submitted on 17 March.
- I. On 19 March, a list of WIPP documents suggested for review was sent to D. Tiktinsky. (Task Order No. 001)
- J. The final report of "A Review of Thermomechanical Analysis Methodologies for NNWSI, BWIP and SRP" was transmitted on 27 March. (Task Order No. 002)

3.0 RESULTS

A. Documents Submitted in March:

- (1) "A Review of Thermomechanical Analysis Methodologies for NNWSI, BWIP and SRP" (Task Order No. 002)

Professional Labor:	J. Daemen	7 hours
	R. Hart	40 hours

- (2) WIPP Suggested Document Review List (Task Order No. 001)

Professional Labor:	L. Lorig	1 hour
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B. Works in Progress:

- (1) incorporation of creep model into FLAC and MUDEC
(Task Order No. 004)

Professional Labor	B. Farm	8 hours
	R. Hart	8 hours
	M. Mack	57.5 hours

- (2) site technical position on in-situ testing at SRP
(Task Order No. 002)

Professional Labor	R. Hart	13 hours
	L. Lorig	3 hours

- (3) Itasca Document Review No. 001-02-29, "Task V Engineering Study No. 9 — Underground Repository Layout" (SD-BWI-ES-023) [Task Order No. 001]

Professional Labor	M. Board	32 hours
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- (4) Itasca Document Review No. 001-02-33, "Task V Engineering Study No. 5 — Shaft Operation" (SD-BWI-ES-016) [Task Order No. 001]

Professional Labor	M. Board	32 hours
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- (5) documentation of thermal logic in FLAC and MUDEC
(Task Order No. 002)

Professional Labor	M. Mack	20 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) BWIP Task V Engineering Study document reviews (Task Order No. 001);
- (2) site technical position on in-situ testing at NNWSI (Task Order No. 002);
- (3) identification and prioritization of major underground system components for NNWSI (Task No.003); and
- (4) incorporation of creep model into FLAC and MUDEC (Task Order No. 004).

B. Work to Be Completed in Next Reporting Period

Itasca Document Reviews Nos. 001-02-29 (Task V Engineering Study No. 9) and 001-02-33 (Task V Engineering Study No. 5) will be submitted. (Task Order No. 001)

C. Planned Trips

1. R. Hart and J. Daemen are scheduled to attend the 5-7 April and 22-24 April meetings on SRP Exploratory Shaft Facility Design in Houston. (Task Order No. 001)
2. L. Lorig and J. Daemen are to attend the meeting on the NNWSI Exploratory Shaft in Las Vegas, 11-15 April (Task Order No. 001).

7.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

A. L. Lorig and J. Daemen made an Appendix VII visit for the NNWSI program in March. Dr. Lorig reviewed the Draft Repository Conceptual Design and visited the Nevada Test Site, 1-5 March. Dr. Daemen participated in this review on 1 March and the Appendix VII visit to Sandia National Laboratories on 6 March. (Task Order No. 001)

Professional Labor	J. Daemen	16 hours
	L. Lorig	36 hours

- B. L. Lorig and R. Hart attended the 12 March meeting to discuss the outline of the SRP In-Situ Testing Point Paper. (Task Order No. 002)

Professional Labor	R. Hart	12 hours
	L. Lorig	10 hours

8.0 SCHEDULE AND COST PROJECTION

A meeting to review the draft "Evaluation of Rockburst Potential at the Hanford Site" (Task Order No. 003) is required in order that we may finalize that report.

The billing summary for the March invoice is attached. As a result of a recent audit by DCAA, our G&A rate has been lowered to 102%. This change is reflected in the invoice. Costs are well within the limit authorized for all four task orders.

Respectfully submitted,



Roger D. Hart
Program Manager
14 April 1987

Attach.
rdh/ks

Apr-87
TASK ORDER 001

TASK LABOR SUMMARY

TASK 2 REVIEW OF DOCUMENTS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	96	40	56
ADMIN MGR	120	110.5	9.5
SR. ENGINEER	980	846.5	133.5
ASST. ENGINEER	300	3	297
SR. REVIEWER	48	0	48
QA	48	18	30
SECRETARIAL	200	319.5	-119.5
TOTAL ITASCA	1792	1337.5	454.5
CONSULTANT			
J. DAEMEN	168	172	-4
I. FARMER	88	80	8
ASST. ENGINEER	208	0	208
R. BARNES	0	20	-20
K. WAHI	0	74	-74
R. RAJARAM	0	50	-50
TOTAL CONSULT	464	396	68
SUBCONTRACTOR-NWC			
PRIN. INVEST.	256	115	141
SR ENGINEER	144	0	144
ENGINEER/GEOL	208	31.5	176.5
DRAFTING	0	2	-2
CLERICAL	100	75	25
TOTAL SUBCONT	708	223.5	484.5
TOTAL TASK	2964	1957	1007

Apr-87
TASK ORDER 001

TASK LABOR SUMMARY

TASK 4 TECHNICAL MEETINGS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	62	37	25
ADMIN MGR	76	79.5	-3.5
PRIN. INVEST.	588	33	555
SR. ENGINEER	1108	452	656
SR REVIEW	0	24	-24
QA	32	13	19
SECRETARIAL	148	106	42
TOTAL ITASCA	2014	744.5	1269.5
CONSULTANT			
J. DAEMEN	588	240	348
I. FARMER	104	61	43
K. WAHI	0	109	-109
R. RAJARAM	0	30	-30
Y. KIM	0	80	-80
TOTAL CONSULT	692	520	172
SUBCONTRACTOR-NWC			
PRIN. INVEST.	588	147	441
CLERICAL	44	28	16
TOTAL SUBCONT	632	175	457
TASK TOTAL	3338	1439.5	1898.5
TASK ORDER TOT	6545	3421	3124

Apr-87

TASK LABOR SUMMARY

TASK ORDER 002
TASK 1

SITE SPECIFIC IN-SITU TESTING POINT PAPERS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	72	13	59
ADMIN MGR	96	46.5	49.5
SR. ENGINEER	872	640	232
SR REVIEW	12	16	-4
QA	48	7.5	40.5
SECRETARIAL	126	88.5	37.5
	-----	-----	-----
TOTAL ITASCA	1226	811.5	414.5
CONSULTANT			
	-----	-----	-----
J. DAEMEN	72	42	30
I. FARMER	40	0	40
K. WAHI	72	0	72
	-----	-----	-----
TOTAL CONSULT	184	42	142
SUBCONTRACTOR-NWC			
	-----	-----	-----
PRIN. INVEST.	72	37	35
ASST. PROF.	0	4	-4
CLERICAL	8	18	-10
	-----	-----	-----
TOTAL SUBCONT	80	59	21
	=====	=====	=====
TASK TOTAL	1490	912.5	577.5

Apr-87
 TASK ORDER 002
 TASK 2

TASK LABOR SUMMARY

THERMOMECHANICAL ANALYSES

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	54	22	32
ADMIN MGR	72	55	17
SR. ENGINEER	592	449	143
ASST. ENGINEER	320	595	-275
SR REVIEW	88	0	88
QA	16	8	8
SECRETARIAL	112	227.5	-115.5
	-----	-----	-----
TOTAL ITASCA	1254	1356.5	-102.5
CONSULTANT			

J. DAEMEN	0	31	-31
K. WAHI	80	85	-5
	-----	-----	-----
TOTAL CONSULT	80	116	-36
	=====	=====	=====
TASK TOTAL	1334	1472.5	-138.5
	=====	=====	=====
TASK ORDER TOT	2824	2385	439

Apr-87
TASK ORDER 004

TASK LABOR SUMMARY

TASK 1 THERMOMECHANICAL MODELING FOR SRP, BWIP AND NNWSI

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	20	0	20
ADMIN MGR	20	11	9
SR. ENGINEER	40	14	26
ASST ENGINEER	120	169.5	-49.5
ASSOC./REVIEWER	120	104	16
QA	8	1	7
SECRETARIAL	12	9.5	2.5
	-----	-----	-----
TOTAL ITASCA	340	309	31
	=====	=====	=====
TASK TOTAL	340	309	31
	=====	=====	=====
TASK ORDER TOT	340	309	31

VOUCHER

Payor's Name and Address

U.S. Nuclear Regulatory Commission
Division of Accounting
Office of the Controller
ATTENTION: GOV/COM Accounts Section
Washington, D.C. 20555

Payee's Name and Address

Itasca Consulting Group, Inc.
P.O. Box 14806
Minneapolis, Minnesota 55414

Individual to contact:

John J. Markham (612-623-9599)

- (a) Contract Number: NRC-02-85-002
- (b) Title of Project: Technical Assistance
for Design Reviews of High-Level Waste
Geologic Repositories
- (c) Voucher Number: 020-87-032
- (d) Date of Voucher: April 7, 1987
- (e) Contract Amount: \$1,312,270.80
- (f) Fixed Fee: \$ 104,981.66

(g) This voucher represents reimburseable costs from March 1 thru March 31, 1987

AMOUNT BILLED

	(k) <u>Current Period</u>	(l) <u>Inception to Date</u>
(h) <u>DIRECT COSTS</u>		
(1) Direct Labor	<u>\$ 6,180.52</u>	<u>\$ 90,800.53</u>
(2) Materials, Supplies and Noncapitalized Equipment	<u>-0-</u>	<u>-0-</u>
(3) Consultants	<u>1,546.83</u>	<u>76,552.92</u>
(4) Travel - Domestic	<u>1,272.04</u>	<u>18,603.09</u>
(5) Subcontract	<u>672.36</u>	<u>31,624.85</u>
(6) Other Costs	<u>346.62</u>	<u>5,194.36</u>
TOTAL DIRECT COSTS	<u>10,018.37</u>	<u>222,775.75</u>
(i) <u>INDIRECT COSTS</u>		
G & A Expense 102% of Cost Element (1)	<u>6,304.13</u>	<u>96,001.33</u>
TOTAL DIRECT AND INDIRECT COSTS	<u>16,322.50</u>	<u>318,777.08</u>
(j) FIXED-FEE EARNED	<u>1,305.79</u>	<u>25,502.14</u>
(m) TOTAL AMOUNTS CLAIMED	<u>17,628.29</u>	<u>344,279.22</u>
(n) ADJUSTMENTS	<u>-0-</u>	<u>-0-</u>
(o) GRAND TOTALS	<u>17,628.29</u>	<u>344,279.22</u>

SUPPORTING INFORMATION

TASK ORDER-001
 TASK 2 DOCUMENT REVIEWS
 (h) DIRECT COSTS

(1) Direct Labor		Hours			
Labor Category	Name	Billed	Rate		Total
-----	-----	-----	-----		-----
Admin. Manager	L. Gaarder	2.0	\$8.89		\$17.78
	J. Markham	3.0	\$25.96		\$77.88
Sr. Engineer	M. Board	64.0	\$23.56		\$1,507.84
	L. Lorig	1.0	\$21.15		\$21.15
Secretarial	K. Sikora	1.0	\$10.34		\$10.34
	L. Gaarder	2.0	\$8.89		\$17.78
QA	K. Sikora	1.0	\$10.34		\$10.34

Total Direct Labor					\$1,663.11

(5) Subcontract					
Nuclear Waste Consultants, Inc.					\$672.36 *

(6) Other Costs					
	Copies	\$40.00			
	Telephone	\$31.52 *			
	Postage	\$11.44			

					\$82.96

TOTAL DIRECT COSTS	\$2,418.43

(i) INDIRECT COSTS		

G & A Expense (1.02 x Direct Labor)		\$1,696.37

TOTAL DIRECT AND INDIRECT COSTS	\$4,114.80
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(j) FIXED FEE EARNED	\$329.18
-----	-----

(m) TOTAL AMOUNT CLAIMED	\$4,443.98
=====	=====

* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-001
 TASK 4 TECHNICAL MEETINGS

(h) DIRECT COSTS

(1) Direct Labor		Hours		
Labor Category	Name	Billed	Rate	Total
Admin. Manager	L. Gaarder	1.0	\$8.89	\$8.89
Sr. Engineer	L. Lorig	36.0	\$21.15	\$761.40
Secretarial	K. Sikora	6.5	\$10.34	\$67.21
	L. Gaarder	1.0	\$8.89	\$8.89
Total Direct Labor				\$846.39

(3) Consultants Labor	J. Daemen	16.0	\$57.75	\$924.00 *
Total Consultant Labor				\$924.00

Expenses/Travel

From	To	Traveller	Costs	
3/5/87	3/6/87	J. Daemen	1) Airfare	\$128.00 *
	Destination		2) Hotel	\$53.90 *
			3) Meals	\$35.68 *
From	To	Purpose	4) Transportation	\$1.00 *
Tucson	Albuquerque	Appendix VII Visit		\$218.58
Total Consultant Travel				\$218.58
Total Consultant Labor & Expenses				\$1,142.58

(4) Travel

From	To	Traveller	Costs	
3/1/87	3/5/87	L. Lorig	1) Airfare	\$308.00 *
	Destination		2) Hotel	\$265.36 *
			3) Meals (4.5 days)	\$148.50
From	To	Purpose	4) Transportation	\$43.00 *
Mpls, MN	Las Vegas	Conceptual Design Report Review		\$764.86

SUPPORTING INFORMATION

TASK ORDER-001

TASK 4 TECHNICAL MEETINGS

Total Itasca Travel \$764.86

TOTAL DIRECT COSTS -----
\$2,753.83

(i) INDIRECT COSTS

G & A Expense (1.02 x Direct Labor) \$863.32

TOTAL DIRECT AND INDIRECT COSTS \$3,617.15

(j) FIXED FEE EARNED \$289.37

(m) TOTAL AMOUNT CLAIMED \$3,906.52
=====

* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-002

TASK 1 SITE SPECIFIC INSITU TESTING POINT PAPERS

(h) DIRECT COSTS

(1) Direct Labor		Hours			
Labor Category	Name	Billed	Rate		Total
-----	-----	-----	-----		-----
Admin. Manager	L. Gaarder	1.0	\$8.89		\$8.89
	J. Markham	2.0	\$25.96		\$51.92
Sr. Engineer	L. Lorig	13.0	\$21.15		\$274.95
	R. Hart	25.0	\$24.04		\$601.00
Secretarial	K. Sikora	2.5	\$10.34		\$25.85
	L. Gaarder	1.0	\$8.89		\$8.89

Total Direct Labor					\$971.50

(4) Travel

From	To	Traveller	Costs	
-----	-----	-----	-----	
3/12/87	3/13/87	R. Hart	1) Airfare	\$149.00 *
	Destination		2) Hotel	\$68.20 *
	-----		3) Meals	\$33.00
From	To	Purpose		
-----	-----	-----		
Mpls, MN	Wash D.C.	SRP Insitu Test Outline Review		----- \$250.20

From	To	Traveller	Costs	
-----	-----	-----	-----	
3/12/87	3/13/87	L. Lorig	1) Airfare	\$98.34 *
	Destination		2) Hotel	\$68.20 *
	-----		3) Meals	\$33.00
From	To	Purpose	4) Transportation	\$55.69 *
-----	-----	-----	5) Parking	\$1.75
Mpls, MN	Wash D.C.	SRP Insitu Test Outline Review		----- \$256.98

Total Itasca Travel \$507.18

(6) Other Costs

Copies	\$60.00	
Telephone	\$20.52 *	
		\$80.52

TOTAL DIRECT COSTS \$1,559.20

SUPPORTING INFORMATION

TASK ORDER-002

TASK 1 SITE SPECIFIC INSITU TESTING POINT PAPERS

(i) INDIRECT COSTS

G & A Expense (1.02 x Direct Labor) \$990.93

TOTAL DIRECT AND INDIRECT COSTS \$2,550.13

(j) FIXED FEE EARNED

\$204.01

1) TOTAL AMOUNT CLAIMED

===== \$2,754.14 =====

* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-002
 TASK 2 THERMOMECHANICAL ANALYSIS

(h) DIRECT COSTS

(1) Direct Labor		Hours			
Labor Category	Name	Billed	Rate		Total

Admin. Manager	L. Gaarder	2.0	\$8.89		\$17.78
	J. Markham	3.0	\$25.96		\$77.88
Sr. Engineer	R. Hart	40.0	\$24.04		\$961.60
Asst. Engineer	M. Mack	20.0	\$12.50		\$250.00
Secretarial	K. Sikora	26.0	\$10.34		\$268.84
	L. Gaarder	1.0	\$8.89		\$8.89
QA	K. Sikora	1.0	\$10.34		\$10.34

Total Direct Labor					\$1,595.33

(3) Consultants					
Labor					
	J. Daemen	7.0	\$57.75		\$404.25 *

Total Consultant Labor					\$404.25

Total Consultant Labor & Expenses \$404.25

(6) Other Costs					
	Copies		\$77.96 *		
	Postage		\$74.38 *		

					\$152.34

TOTAL DIRECT COSTS **\$2,151.92**

(i) INDIRECT COSTS					

G & A Expense (1.02 x Direct Labor)					\$1,627.24

TOTAL DIRECT AND INDIRECT COSTS **\$3,779.16**

(j) FIXED FEE EARNED					\$302.33

(m) TOTAL AMOUNT CLAIMED					\$4,081.49
=====					

* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-004
 TASK 1 THERMOMECHANICAL MODELING

(h) DIRECT COSTS

(1) Direct Labor		Hours			
Labor Category	Name	Billed	Rate		Total
<hr/>					
Admin. Manager	L. Gaarder	1.0	\$8.89		\$8.89
	J. Markham	2.0	\$25.96		\$51.92
Sr. Engineer	R. Hart	8.0	\$24.04		\$192.32
Asst. Engineer	M. Mack	57.5	\$12.50		\$718.75
	B. Farm	8.0	\$8.50		\$68.00
Secretarial	K. Sikora	3.5	\$10.34		\$36.19
	L. Gaarder	2.0	\$8.89		\$17.78
QA	K. Sikora	1.0	\$10.34		\$10.34
					<hr/>
Total Direct Labor					\$1,104.19

(6) Other Costs

Copies \$30.80

\$30.80

TOTAL DIRECT COSTS

\$1,134.99

(i) INDIRECT COSTS

G & A Expense (1.02 x Direct Labor)

\$1,126.27

TOTAL DIRECT AND INDIRECT COSTS

\$2,261.26

(j) FIXED FEE EARNED

\$180.90

(m) TOTAL AMOUNT CLAIMED

\$2,442.16