

0-1016

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

WM-RA
WM Record File
D-1016
ITASCA

WM Project 10, 11, 16
Docket No. _____
PDR
LPDR BNS



Distribution: Jean Tiktinsky
* Tiktinsky
(Return to WM, 623-SS)

17 March 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. 19 for the period 1-28 February 1987 on Task Orders No. 001, 002, 003 and 004, Contract NRC-02-85-002. Also enclosed is the summary sheet for the February voucher. Please call me if you have any questions.

Sincerely,

[Signature]
Roger D. Hart
Program Manager

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

WM DOCKET CONTROL CENTER
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Encl.
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ITASCA MONTHLY PROGRESS REPORT

Progress Report No. 19
NRC Technical Assistance
for Design Reviews

17 March 1987
Contract No. NRC-02-85-002

Reporting Period: 1 - 28 February 1987

1. INTRODUCTION

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

2.0 ACTIVITIES DURING THE REPORTING PERIOD

- A. On 6 February, R. Hart transmitted the draft outline for the point paper on in-situ testing at Deaf Smith to N. Tanious and D. Tiktinsky (Task Order No. 002).
- B. The computer code MUDECT was transmitted to D. Tiktinsky on 12 February (Task Order No. 002).
- C. Progress Report No. 18 and Invoice No. 018-87-015 were submitted on 17 February.
- D. The final report "In-Situ Testing at the Hanford Site" was transmitted to D. Tiktinsky on 20 February (Task Order No. 002).
- E. L. Lorig and J. Daemen attended an Appendix 7 visit to NNWSI from 23 February to 5 March (Task Order No. 001).

3.0 RESULTS

A. Documents Submitted in February:

1. Final Report "In-Situ Testing at the Hanford Site" (Task Order No. 002)

Professional Labor:	M. Board	88	hours
	C. Fairhurst	4	hours
	R. Hart	6	hours
	J. Markham	6.5	hours

2. Draft Outline of point paper "In-Situ Testing at Deaf Smith" (Task Order No. 002)

Professional Labor:	R. Hart	11	hours
	L. Lorig	28	hours

B. Works in Progress:

- (1) incorporation of NRC comments into final thermomechanical paper (Task Order No. 002)

Professional Labor:	R. Hart	3	hours
	L. Lorig	2	hours

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

Professional Labor	L. Lorig	13.5	hours
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- (3) identification and prioritization of major underground system components for NNWSI (Task Order No. 003)

Professional Labor	L. Lorig	8	hours
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- (4) incorporation of creep model into FLAC (Task Order No. 004)

Professional Labor	M. Mack	69	hours
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- (5) QA reviews of the Itasca document reviews 001-02-5 through 001-02-8, 001-02-16 through 001-02-19, and 001-02-21 through 001-02-23)

Professional Labor A. Brown 22 hours*

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) incorporation of NRC comments into final thermomechanical paper (Task Order No. 002);
- (2) identification and prioritization of major underground system components for NNWSI (Task No.003);
- (3) incorporation of creep model into FLAC and MUDEC (Task Order No. 004).
- (4) site technical position on in-situ testing at NNWSI (Task Order No. 002).

*Activity performed in January; subcontractor invoice included in February invoice.

B. Planned Trips

1. L. Lorig and J. Daemen will continue their scheduled Appendix VII site visit to Las Vegas into March (Task Order No. 001).
2. R. Hart and L. Lorig will attend a one-day meeting in Silver Spring on 12 March 1987 to discuss the outline of the in-situ testing point paper for salt (Task Order No. 002).

7.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

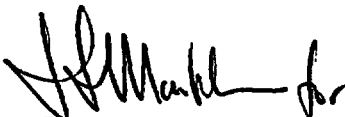
L. Lorig and J. Daemen made an Appendix VII visit for the NNWSI program in Las Vegas. Dr. Lorig was present from 23 February through 27 February. Dr. Daemen attended from 23 February through 28 February. Both Drs. Lorig and Daemen are scheduled to continue this site visit into March.

J. Daemen	44 hours
L. Lorig	48 hours

8.0 SCHEDULE AND COST PROJECTION

The billing summary for the February invoice is attached. Costs are well within the limit authorized for all four task orders.

Respectfully submitted,



Roger D. Hart
Program Manager
17 March 1987

Attach.
rdh/ks

Mar-87
 TASK ORDER 001
 TASK 2

TASK LABOR SUMMARY

REVIEW OF DOCUMENTS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	96	40	56
ADMIN MGR	120	105.5	14.5
SR. ENGINEER	980	781.5	198.5
ASST. ENGINEER	300	3	297
SR. REVIEWER	48	0	48
QA	48	17	31
SECRETARIAL	200	316.5	-116.5
TOTAL ITASCA	1792	1263.5	528.5
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	113	143
SR ENGINEER	144	0	144
ENGINEER/GEOL	208	31.5	176.5
DRAFTING	0	2	-2
CLERICAL	100	73	27
TOTAL SUBCONT	708	219.5	488.5
TOTAL TASK	2964	1879	1085

Mar-87
 TASK ORDER 001
 TASK 4

TASK LABOR SUMMARY

TECHNICAL MEETINGS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	62	37	25
ADMIN MGR	76	78.5	-2.5
PRIN. INVEST.	588	33	555
SR. ENGINEER	1108	416	692
SR REVIEW	0	24	-24
QA	32	13	19
SECRETARIAL	148	98.5	49.5
	-----	-----	-----
TOTAL ITASCA	2014	700	1314
CONSULTANT			

J. DAEMEN	588	224	364
I. FARMER	104	61	43
K. WAHI	0	109	-109
R. RAJARAM	0	30	-30
Y. KIM	0	80	-80
	-----	-----	-----
TOTAL CONSULT	692	504	188
SUBCONTRACTOR-NWC			

PRIN. INVEST.	588	147	441
CLERICAL	44	28	16
	-----	-----	-----
TOTAL SUBCONT	632	175	457
	=====	=====	=====
TASK TOTAL	3338	1379	1959
	=====	=====	=====
TASK ORDER TOT	6545	3282.5	3262.5

Mar-87
 TASK ORDER 002
 TASK 1

TASK LABOR SUMMARY

SITE SPECIFIC IN-SITU TESTING POINT PAPERS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	72	13	59
ADMIN MGR	96	43.5	52.5
SR. ENGINEER	872	602	270
SR REVIEW	12	16	-4
QA	48	7.5	40.5
SECRETARIAL	126	85	41
TOTAL ITASCA	1226	767	459
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	868	622

Mar-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	50	22
SR. ENGINEER	592	409	183
ASST. ENGINEER	320	575	-255
SR REVIEW	88	0	88
QA	16	7	9
SECRETARIAL	112	200.5	-88.5
	-----	-----	-----
TOTAL ITASCA	1254	1263.5	-9.5
CONSULTANT			

J. DAEMEN	0	24	-24
K. WAHI	80	85	-5
	-----	-----	-----
TOTAL CONSULT	80	109	-29
	=====	=====	=====
TASK TOTAL	1334	1372.5	-38.5
	=====	=====	=====
TASK ORDER TOT	2824	2240.5	583.5

Mar-87

TASK LABOR SUMMARY

TASK ORDER 003

TASK 2 IDENTIFICATION AND PRIORITIZATION OF MAJOR
UNDERGROUND SYSTEM DESIGN COMPONENTS FOR NNWSI

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	6	2	4
ADMIN MGR	12	12	0
SR. ENGINEER	80	77	3
QA	4	4	0
SECRETARIAL	20	29.5	-9.5
	-----	-----	-----
TOTAL ITASCA	122	124.5	-2.5
CONSULTANT			

J. DAEMEN	80	18.5	61.5
	-----	-----	-----
	80	18.5	61.5
	=====	=====	=====
TASK TOTAL	202	143	59
	=====	=====	=====
TASK ORDER TOT	516	342	174

Mar-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	8	12
SR. ENGINEER	40	6	34
ASST ENGINEER	120	104	16
ASSOC./REVIEWER	120	104	16
QA	8	0	8
SECRETARIAL	12	4	8
	-----	-----	-----
TOTAL ITASCA	340	226	114
	=====	=====	=====
TASK TOTAL	340	226	114
	=====	=====	=====
TASK ORDER TOT	340	226	114

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

- (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: 019-87-020
- (d) Date of Voucher: March 17, 1987
- (e) Contract Amount: \$1,312,270.80
- (f) Fixed Fee: \$ 104,981.66

Individual to contact:
 John J. Markham (612-623-9599)

(g) This voucher represents reimburseable costs from February 1 thru February 28, 1987

AMOUNT BILLED

	<u>(k) Current Period</u>	<u>(l) Inception to Date</u>
(h) <u>DIRECT COSTS</u>		
(1) Direct Labor	<u>\$ 6,953.57</u>	<u>\$ 84,620.01</u>
(2) Materials, Supplies and Noncapitalized Equipment	<u>-0-</u>	<u>-0-</u>
(3) Consultants	<u>3,667.57</u>	<u>75,006.09</u>
(4) Travel - Domestic	<u>1,124.70</u>	<u>17,331.05</u>
(5) Subcontract	<u>2,795.45</u>	<u>30,952.49</u>
(6) Other Costs	<u>409.99</u>	<u>4,847.74</u>
TOTAL DIRECT COSTS	<u>14,951.28</u>	<u>212,757.38</u>
(i) <u>INDIRECT COSTS</u>		
G & A Expense 106% of Cost Element (1)	<u>\$ 7,370.78</u>	<u>\$ 89,697.20</u>
TOTAL DIRECT AND INDIRECT COSTS	<u>22,322.06</u>	<u>302,454.58</u>
(j) FIXED-FEE EARNED	<u>1,785.77</u>	<u>24,196.35</u>
(m) TOTAL AMOUNTS CLAIMED	<u>24,107.83</u>	<u>326,650.93</u>
(n) ADJUSTMENTS	<u>-0-</u>	<u>-0-</u>
(o) GRAND TOTALS	<u>24,107.83</u>	<u>326,650.93</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	2.5	\$25.96		\$64.90
Sr. Engineer	M. Board	88.0	\$23.56		\$2,073.28
Secretarial	K. Sikora	54.0	\$10.34		\$558.36

Total Direct Labor					\$2,714.32

(3) Consultants
Total Consultant Labor & Expenses \$0.00

(4) Travel
Total Itasca Travel \$0.00

(5) Subcontract
Nuclear Waste Consultants, Inc. \$2,795.45

(6) Other Costs

	Publications \$115.00 *	
	Telephone \$5.51 *	

		\$120.51

TOTAL DIRECT COSTS \$5,630.28

(i) **INDIRECT COSTS**

G & A Expense (1.06 x Direct Labor) \$2,877.18

TOTAL DIRECT AND INDIRECT COSTS \$8,507.46

(j) **FIXED FEE EARNED \$680.60**

(m) **TOTAL AMOUNT CLAIMED \$9,188.06**

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* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-001
 TASK 4 TECHNICAL MEETINGS

(h) DIRECT COSTS

(1) Direct Labor	Labor Category	Name	Hours Billed	Rate	Total
	Admin. Manager	L. Gaarder	2.0	\$8.89	\$17.78
	Sr. Engineer	L. Lorig	44.0	\$21.15	\$930.60
	Secretarial	K. Sikora	1.0	\$10.34	\$10.34
Total Direct Labor					\$958.72

(3) Consultants Labor					
		J. Daemen	48.0	\$57.75	\$2,772.00 *
Total Consultant Labor					\$2,772.00

Expenses/Travel

From	To	Traveller	Costs	
2/22/87	2/28/87	J. Daemen	1) Airfare	\$124.00 *
	Destination		2) Hotel	\$334.88 *
			3) Meals	\$230.13 *
From	To	Purpose	4) Transportation	\$205.31 *
			5) Phone	\$1.25 *
Tucson	Las Vegas	Appendix VII visit		\$895.57

Total Consultant Travel \$895.57
Total Consultant Labor & Expenses \$3,667.57

(4) Travel

From	To	Traveller	Costs	
2/22/87	2/27/87	L. Lorig	1) Airfare	\$425.00 *
	Destination		2) Hotel	\$415.16 *
			3) Meals	\$91.23 *
From	To	Purpose	4) Car rental	\$144.83 *
			5) Phone, misc.	\$16.48 *
Mpls, MN	Las Vegas	Appendix VII6) Taxis		\$32.00 *
		visit		\$1,124.70

SUPPORTING INFORMATION

TASK ORDER-001

TASK 4 TECHNICAL MEETINGS

Total Itasca Travel \$1,124.70

TOTAL DIRECT COSTS -----
\$5,750.99

(i) INDIRECT COSTS

G & A Expense (1.06 x Direct Labor) \$1,016.24

TOTAL DIRECT AND INDIRECT COSTS \$6,767.23

(j) FIXED FEE EARNED \$541.38

(m) TOTAL AMOUNT CLAIMED \$7,308.61
=====

* 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
<hr/>					
Admin. Manager	L. Gaarder	2.0	\$8.89		\$17.78
	J. Markham	2.0	\$25.96		\$51.92
Sr. Engineer	R. Hart	17.0	\$24.04		\$408.68
	J. Markham	6.5	\$25.96		\$168.74
	L. Lorig	41.5	\$21.15		\$877.73
Sr. Reviewer	C. Fairhurst	4.0	\$52.50		\$210.00
Secretarial	K. Sikora	3.0	\$10.34		\$31.02
QA	K. Sikora	1.0	\$10.34		\$10.34
<hr/>					
Total Direct Labor					\$1,776.21

(3) Consultants		
Total Consultant Labor & Expenses		\$0.00

(4) Travel		
Total Itasca Travel		\$0.00

(6) Other Costs			
	Copies	\$218.15	
	Telephone	\$25.93 *	
	Postage	\$45.40	
		<hr/>	
			\$289.48

TOTAL DIRECT COSTS	<hr/> \$2,065.69
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(i) INDIRECT COSTS	
<hr/> G & A Expense (1.06 x Direct Labor)	<hr/> \$1,882.78

TOTAL DIRECT AND INDIRECT COSTS	\$3,948.47
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(j) FIXED FEE EARNED	<hr/> \$315.88
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(m) TOTAL AMOUNT CLAIMED	<hr/> <hr/> \$4,264.35
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* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-002
TASK 2 THERMOMECHANICAL ANALYSIS

(h) DIRECT COSTS

(1) Direct Labor		Hours			
Labor Category	Name	Billed	Rate		Total
-----	-----	-----	-----		-----
Prog. Manager	R. Hart	3.0	\$24.04		\$72.12
Admin. Manager	L. Gaarder	2.0	\$8.89		\$17.78
	J. Markham	2.5	\$25.96		\$64.90
Sr. Engineer	L. Lorig	2.0	\$21.15		\$42.30
Secretarial	K. Sikora	8.0	\$10.34		\$82.72

Total Direct Labor					\$279.82

(3) Consultants
 Total Consultant Labor, & Expenses \$0.00

(4) Travel
 Total Itasca Travel \$0.00

TOTAL DIRECT COSTS **\$279.82**

(i) INDIRECT COSTS

G & A Expense (1.06 x Direct Labor) \$296.61

TOTAL DIRECT AND INDIRECT COSTS **\$576.43**

(j) FIXED FEE EARNED **\$46.11**

(m) TOTAL AMOUNT CLAIMED **\$622.54**
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* Invoice Attached

SUPPORTING INFORMATION

TASK ORDER-003

TASK 2 IDENTIFICATION OF UNDERGROUND SYSTEM DESIGN COMPONENTS

(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	9.0	\$21.15		\$190.35
Secretarial	K. Sikora	7.5	\$10.34		\$77.55
QA	K. Sikora	1.0	\$10.34		\$10.34

Total Direct Labor					\$287.13

(3) Consultants					
Total Consultant Labor & Expenses					\$0.00

(4) Travel					
Total Itasca Travel					\$0.00

TOTAL DIRECT COSTS	\$287.13
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(i) INDIRECT COSTS

G & A Expense (1.06 x Direct Labor)	\$304.36
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TOTAL DIRECT AND INDIRECT COSTS	\$591.49
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(j) FIXED FEE EARNED	\$47.32
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(m) TOTAL AMOUNT CLAIMED	\$638.81
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* 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	2.0	\$8.89		\$17.78
	J. Markham	2.0	\$25.96		\$51.92
Asst. Engineer	M. Mack	69.0	\$12.50		\$862.50
Secretarial	K. Sikora	0.5	\$10.34		\$5.17
<hr/>					
Total Direct Labor					\$937.37

(3) Consultants
 Total Consultant Labor & Expenses \$0.00

(4) Travel
 Total Itasca Travel \$0.00

TOTAL DIRECT COSTS \$937.37

(i) INDIRECT COSTS

G & A Expense (1.06 x Direct Labor) \$993.61

TOTAL DIRECT AND INDIRECT COSTS \$1,930.98

(j) FIXED FEE EARNED \$154.48

(m) TOTAL AMOUNT CLAIMED \$2,085.46

* Invoice Attached