



14 September 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. 25 for the period 1-31 August 1987 on Task Orders No. 001, 002, 003, 004, 005, and 006, Contract NRC-02-85-002. Also enclosed is the summary sheet for the August voucher. Please call me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "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

Encl.  
rdh/ks

8712140420 870914  
PDR WMRES EECITAS  
D-1016 PDR

88132284

WM Project: WM-10, 11, 16

PDR w/encl

(Return to WM, 623-SS)

WM Record File: D-1016

LPDR w/encl

A large, handwritten mark that resembles the number "4" or a similar symbol, located in the bottom right corner of the page.

## ITASCA MONTHLY PROGRESS REPORT

Progress Report No. 25  
NRC Technical Assistance  
for Design Reviews

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

Reporting Period: 1 - 31 August 1987

### 1.0 INTRODUCTION

This progress report summarizes the work performed during August 1987 on NRC Contract No. NRC-02-85-002. During August, work progressed on Task Orders No. 001, 002, 003, 004, 005, and 006.

### 2.0 ACTIVITIES DURING THE REPORTING PERIOD

- A. On 6 August, trip reports were submitted for the two meetings:
  - 1. meeting to develop strategy for review of the design/rock mechanics aspects of the NNWSI SCP, 16-17 July (Task Orders No. 001 and 003); and
  - 2. meeting to discuss the point paper on rockbursting at Hanford, 22-23 July (Task Order No. 003).
  
- B. The following document reviews were transmitted on 6 August (Task Order No. 001).
  - 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)
  - 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)

- C. Authorization was received, on 7 August, for two engineers to visit Silver Spring to discuss the creep model for FLAC and the STRES3D code (Task Order Nos. 001 and 004), for a senior engineer to attend the 22-23 July meeting to discuss STRES3D and the rock burst potential at BWIP point paper (Task Order Nos. 001 and 003), and for review of the following documents (Task Order No. 006).
1. "Thermomechanical Analysis of Underground Excavations in the Vicinity of a Nuclear Waste Isolation Panel" by C. M. St. John (SAND84-7208)
  2. "Sensitivity Analyses of Underground Drift Temperature, Stresses, and Safety Factors to Variation in the Rock Mass Properties of Tuff for a Nuclear Waste Repository Located at Yucca Mountain, Nevada" by B. L. Ehgartner (SAND86-1250)
  3. "Analysis of Horizontal Waste Emplacement Boreholes of a Nuclear Waste Repository in Tuff" by K. Arulmoli and C. M. St. John (SAND86-7133)
  4. "Thermal Analysis of Spent Fuel Disposal in Vertical Emplacement Boreholes in a Welded Tuff Repository" by C. M. St. John (SAND84-7207)
  5. "Investigation of Excavation Stability in a Finite Repository" by C. M. St. John and S. J. Mitchell (SAND86-7011)
  6. "Reference Thermal and Thermal/Mechanical Analyses of Drifts for Vertical and Horizontal Emplacement of Nuclear Waste in a Repository in Tuff" by C. M. St. John (SAND86-7005)
  7. "Near Field Mechanical Calculations Using a Continuum Jointed Rock Model in the JAC Code" by R. K. Thomas (SAND83-0070)

[These document reviews will be completed as one review, Itasca Review 006-01-39.]

- D. On 10 August, the following final papers were transmitted (Task Order No. 003).
  - 1. "Evaluation of Rockburst Potential at the Hanford Site"
  - 2. "Identification and Prioritization of Major NNWSI Design Elements"
- E. Progress Report No. 24 and Invoice No. 024-87-106 were transmitted on 13 August.
- F. On 14 August, authorization was received from P. Edgeworth to perform Task Order No. 006.
- G. From 17-20 August, Mark Mack met with NRC personnel in Silver Spring to discuss thermomechanical and creep modeling capabilities in FLAC (Task Order No. 004). The trip report was transmitted on 25 August.
- H. Jaak Daemen attended the 31 August meeting in Houston on ESF Title II 60% Design Review for the Salt Repository (Task Order No. 001)

### 3.0 RESULTS

- A. Documents Submitted in August
  - 1. Final Paper, "Identification and Prioritization of Major NNWSI Design Elements" (Task Order No. 003)  

Professional Labor	J. Daemen	1 hour
--------------------	-----------	--------
  - 2. Final Paper, "Evaluation of Rockburst Potential at the Hanford Site" (Task Order No. 003)  

Professional Labor	B. Brady	14 hours
	R. Hart	3 hours

3. Itasca 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	16 hours
	R. Hart	1 hour

4. Itasca 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	J. Daemen	1 hour
	R. Hart	1 hour
	L. Lorig	1 hour

B. Tasks Completed in August

Incorporation of creep model in FLAC (Task Order No. 004)

Professional Labor	R. Hart	1 hour
	M. Mack	1 hour

C. Works in Progress

1. Document Review 006-01-39, "Summary Review of NNWSI Thermomechanical Analysis Documents" (as listed in authorization of 7 August 1987)

Professional Labor	L. Lorig	5 hours
--------------------	----------	---------

2. Analysis of continuum vs discontinuum modeling for BWIP (Task Order No. 005)

Professional Labor	M. Board	20 hours
--------------------	----------	----------

3. Sensitivity analysis of key joint parameters at BWIP (Task Order No. 005)  
Professional Labor M. Christianson 11 hours
  
4. Mechanical and thermomechanical analysis for SRP (Task Order No. 005)  
Professional Labor R. Hart 4 hours  
M. Mack 24.5 hours
  
5. Documentation of thermal logic in FLAC and MUDEC (Task Order No. 002)  
Professional Labor R. Hart 6 hours  
M. Mack 29 hours
  
6. "Site Technical Position on In-Situ Testing at NNWSI" (Task Order No. 002)  
Professional Labor J. Daemen 18 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. 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)
  5. "Site Technical Position on In-Situ Testing at SRP" (Task Order No. 002)
- B. Planned Trips
1. L. Lorig and J. Daemen are to attend the NNWSI Seismo-tectonic SCP Strategies Meeting in Las Vegas during the week of 21 September (Task Order No. 001) [Note: authorization to attend this meeting has not yet been received]
  2. R. Hart and B. Brady are to attend the ESF Design for SRPO Meeting in Houston, 28 September - 2 October (Task Order No. 001)

7.0 MEETINGS/TRIPS DURING THE REPORTING PERIOD

- A. M. Mack attended a four-day meeting in Silver Spring, 17-20 August, to discuss thermomechanical and creep modeling capabilities in FLAC (Task Order No. 004)

Professional Labor	M. Mack	32 hours
--------------------	---------	----------

- B. J. Daemen attended the 31 August ESF Title II 60% Design Review Meeting for SRPO in Houston (Task Order No. 001)

Professional Labor	J. Daemen	8 hours
--------------------	-----------	---------

8.0 SCHEDULE AND COST PROJECTION

The billing summary for the August 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 worked on in August. Task Order No. 004 is complete.

Respectfully submitted,



Roger D. Hart  
Program Manager  
14 September 1987

attach.  
rdh/ks

Sep-87  
 TASK ORDER 001  
 TASK 4

TASK LABOR SUMMARY

TECHNICAL MEETINGS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	62	40	22
ADMIN MGR	76	98.5	-22.5
PRIN. INVEST.	588	33	555
SR. ENGINEER	1108	613	495
SR REVIEW	0	24	-24
QA	32	16	16
SECRETARIAL	148	134.5	13.5
	-----	-----	-----
TOTAL ITASCA	2014	959	1055
CONSULTANT			
	-----	-----	-----
J. DAEMEN	588	344	244
I. FARMER	104	61	43
K. WAHI	0	109	-109
R. RAJARAM	0	30	-30
Y. KIM	0	80	-80
	-----	-----	-----
TOTAL CONSULT	692	624	68
SUBCONTRACTOR-NWC			
	-----	-----	-----
PRIN. INVEST.	588	147	441
CLERICAL	44	28	16
	-----	-----	-----
TOTAL SUBCONT	632	175	457
	=====	=====	=====
TASK TOTAL	3338	1758	1580
	=====	=====	=====
TASK ORDER TOT	6545	4447.5	2097.5

Sep-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	59.5	36.5
SR. ENGINEER	872	721	151
SR REVIEW	12	19	-7
QA	48	15.5	32.5
SECRETARIAL	126	121.5	4.5
	-----	-----	-----
TOTAL ITASCA	1226	949.5	276.5
CONSULTANT			
	-----		
J. DAEMEN	72	82	-10
I. FARMER	40	0	40
K. WAHI	72	0	72
	-----	-----	-----
TOTAL CONSULT	184	82	102
SUBCONTRACTOR-NWC			
	-----		
PRIN. INVEST.	72	37	35
ASST. PROF.	0	4	-4
CLERICAL	8	18	-10
	-----	-----	-----
TOTAL SUBCONT	80	59	21
	=====	=====	=====
TASK TOTAL	1490	1090.5	399.5

Sep-87  
 TASK ORDER 002  
 TASK 2

TASK LABOR SUMMARY

THERMOMECHANICAL ANALYSES

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	54	30	24
ADMIN MGR	72	80	-8
SR. ENGINEER	592	458	134
ASST. ENGINEER	320	726	-406
SR REVIEW	88	0	88
QA	16	12.5	3.5
SECRETARIAL	112	261.5	-149.5
<b>TOTAL ITASCA</b>	<b>1254</b>	<b>1568</b>	<b>-314</b>
<b>CONSULTANT</b>			
J. DAEMEN	0	31	-31
K. WAHI	80	85	-5
<b>TOTAL CONSULT</b>	<b>80</b>	<b>116</b>	<b>-36</b>
<b>TASK TOTAL</b>	<b>1334</b>	<b>1684</b>	<b>-350</b>
<b>TASK ORDER TOT</b>	<b>2824</b>	<b>2774.5</b>	<b>49.5</b>

Sep-87  
 TASK ORDER 003  
 TASK 1 ROCKBURST POTENTIAL AT BWIP

TASK LABOR SUMMARY

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	8	3	5
ADMIN MGR	16	19	-3
SR. ENGINEER	160	157	3
SR REVIEW	16	14	2
QA	6	0	6
SECRETARIAL	36	45	-9
	-----	-----	-----
TOTAL ITASCA	242	238	4
SUBCONTRACTOR-NWC			
	-----		
PRIN. INVEST.	40	0	40
SR ENGINEER	24	0	24
CLERICAL	8	0	8
	-----	-----	-----
TOTAL SUBCONT	72	0	72
	=====	=====	=====
TASK TOTAL	314	238	76

Sep-87  
TASK ORDER 003

TASK LABOR SUMMARY

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	3	3
ADMIN MGR	12	26	-14
SR. ENGINEER	80	124.5	-44.5
QA	4	7	-3
SECRETARIAL	20	49.5	-29.5
	-----	-----	-----
TOTAL ITASCA	122	210	-88
CONSULTANT			
	-----		
J. DAEMEN	80	40	40
	-----	-----	-----
	80	40	40
	=====	=====	=====
TASK TOTAL	202	250	-48
	=====	=====	=====
TASK ORDER TOT	516	488	28

Sep-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	28	-8
SR. ENGINEER	40	30	10
ASST ENGINEER	120	262.5	-142.5
ASSOC./REVIEWER	120	109	11
QA	8	5.5	2.5
SECRETARIAL	12	31	-19
	-----	-----	-----
TOTAL ITASCA	340	466	-126
	=====	=====	=====
TASK TOTAL	340	466	-126
	=====	=====	=====
TASK ORDER TOT	340	466	-126

Sep-87  
 TASK ORDER 005

TASK LABOR SUMMARY

TASK 1 ANALYSIS FOR BWIP  
 SUBTASK 1 CONTINUUM & DISCONTINUUM MODELING

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	16	2	14
ADMIN MGR	32	5	27
SR. ENGINEER	320	46	274
QA	16	1	15
SECRETARIAL	30	1	29
	-----	-----	-----
	414	55	359

SUBCONTRACTOR-NWC

PRIN. INVEST.	32		32
CLERICAL	12		12
	-----	-----	-----
TOTAL SUBCONT	44	0	44
	=====	=====	=====
SUBTASK TOTAL	458	55	403

TASK 1 ANALYSIS FOR BWIP  
 SUBTASK 2 SENSITIVITY ANALYSIS FOR JOINT PARAMETERS

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	16	0	16
ADMIN MGR	32	3	29
SR. ENGINEER	320	70.5	249.5
QA	16	0	16
SECRETARIAL	30	1	29
	-----	-----	-----
	414	74.5	339.5

SUBCONTRACTOR-NWC

PRIN. INVEST.	32		32
CLERICAL	12		12
	-----	-----	-----
TOTAL SUBCONT	44	0	44
	=====	=====	=====
SUBTASK TOTAL	458	74.5	383.5

Sep-87  
 TASK ORDER 005  
 TASK 2 ANALYSIS FOR SRP  
 SUBTASK 1 MECHANICAL & THERMOMECHANICAL ANALYSIS  
 STAGE 2 INDEPENDENT PARALLEL ANALYSES

TASK LABOR SUMMARY

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	32	4	28
ADMIN MGR	64	6	58
SR. ENGINEER	240	2	238
ASST ENGINEER	120	78	42
QA	16	0	16
SECRETARIAL	48	2	46
	-----	-----	-----
	520	92	428
CONSULTANT			
-----			
K. WAHI	40	0	40
	-----	-----	-----
	40	0	40
	=====	=====	=====
SUBTASK TOTAL	618	92	526

TASK ORDER TOT	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
TASK TOTAL	1058	92	966
	=====	=====	=====
TASK ORDER TOT	2794	221.5	2572.5

Sep-87

TASK LABOR SUMMARY

Sep-87  
 TASK ORDER 006  
 TASK 1 DOCUMENT REVIEWS

TASK LABOR SUMMARY

LABOR CATEGORY	BUDGETED HRS	TOTAL HRS BILLED	HRS REMAINING
PROGRAM MGR	40	2	38
ADMIN MGR	120	4	116
SR. ENGINEER	648	22	626
ASST ENGINEER	80	0	80
SR. REVIEWER	149	0	149
QA	40	0.5	39.5
SECRETARIAL	356	7.5	348.5
	-----	-----	-----
	1433	36	1397
SUBCONTRACTOR-NWC			
PRIN. INVEST.	160	0	160
SR ENGINEER	30	0	30
ENGINEER/GEOL	26	0	26
CLERICAL	88	0	88
	-----	-----	-----
TOTAL SUBCONT	304	0	304
CONSULTANT			
J. DAEMEN	200	1	199
V. RAJARAM	80	0	80
K. WAHI	80	0	80
	-----	-----	-----
TOTAL CONSULT	360	1	359
	=====	=====	=====
TASK TOTAL	2097	37	2060
	=====	=====	=====
TASK TOTAL	1424	0	1424
	=====	=====	=====
TASK ORDER TOT	3521	37	3484

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK ORDER NO. 1  
TASK 4 TECHNICAL MEETINGS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
17 SEP 85	\$2,618.63	\$2,618.63	\$266,162.25	\$263,543.62	1.0%
11 OCT 85	\$4,311.03	\$6,929.66	\$266,162.25	\$259,232.59	2.6%
12 NOV 85	\$605.49	\$7,535.15	\$266,162.25	\$258,627.10	2.8%
16 DEC 85	\$4,285.63	\$11,820.78	\$266,162.25	\$254,341.47	4.4%
14 JAN 86	\$8,566.13	\$20,386.91	\$266,162.25	\$245,775.34	7.7%
18 FEB 86	\$7,422.36	\$27,809.27	\$266,162.25	\$238,352.98	10.4%
13 MAR 86	\$4,268.58	\$32,077.85	\$266,162.25	\$234,084.40	12.1%
08 APR 86	\$8,763.60	\$40,841.45	\$266,162.25	\$225,320.80	15.3%
09 MAY 86	\$10,571.40	\$51,412.85	\$266,162.25	\$214,749.40	19.3%
10 JUN 86	\$645.43	\$52,058.28	\$266,162.25	\$214,103.97	19.6%
15 JUL 86	\$23,150.10	\$75,208.38	\$266,162.25	\$190,953.87	28.3%
12 AUG 86	\$7,322.64	\$82,531.02	\$266,162.25	\$183,631.23	31.0%
10 SEP 86	\$7,087.09	\$89,618.11	\$266,162.25	\$176,544.14	33.7%
10 OCT 86	\$2,870.16	\$92,488.27	\$266,162.25	\$173,673.98	34.7%
14 NOV 86	\$1,783.40	\$94,271.67	\$266,162.25	\$171,890.58	35.4%
14 JAN 87	\$1,911.39	\$96,183.06	\$266,162.25	\$169,979.19	36.1%
17 MAR 87	\$7,308.61	\$103,491.67	\$266,162.25	\$162,670.58	38.9%
07 APR 87	\$3,906.52	\$107,398.19	\$266,162.25	\$158,764.06	40.4%
18 MAY 87	\$12,962.10	\$120,360.29	\$266,162.25	\$145,801.96	45.2%
10 JUN 87	\$6,151.03	\$126,511.32	\$266,162.25	\$139,650.93	47.5%
11 AUG 87	\$2,006.94	\$128,518.26	\$266,162.25	\$137,643.99	48.3%
14 SEP 87	\$1,499.30	\$130,017.56	\$266,162.25	\$136,144.69	48.8%
	\$130,017.56				

TASK ORDER 1 TOTAL

AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
\$260,549.63	\$414,754.68	\$154,205.05	62.8%

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK ORDER NO. 2

TASK 1 SITE SPECIFIC IN-SITU TESTING POINT PAPERS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
09 MAY 86	\$4,136.36	\$4,136.36	\$80,791.49	\$76,655.13	5.1%
10 JUN 86	\$8,789.36	\$12,925.72	\$80,791.49	\$67,865.77	16.0%
15 JUL 86	\$3,529.06	\$16,454.78	\$80,791.49	\$64,336.71	20.4%
12 AUG 86	\$4,830.43	\$21,285.21	\$80,791.49	\$59,506.28	26.3%
10 SEP 86	\$5,160.25	\$26,445.46	\$80,791.49	\$54,346.03	32.7%
10 OCT 86	\$5,788.64	\$32,234.10	\$80,791.49	\$48,557.39	39.9%
14 NOV 86	\$3,416.02	\$35,650.12	\$80,791.49	\$45,141.37	44.1%
16 DEC 86	\$1,779.08	\$37,429.20	\$80,791.49	\$43,362.29	46.3%
14 JAN 87	\$2,792.75	\$40,221.95	\$80,791.49	\$40,569.54	49.8%
17 FEB 87	\$848.52	\$41,070.47	\$80,791.49	\$39,721.02	50.8%
17 MAR 87	\$4,264.35	\$45,334.82	\$80,791.49	\$35,456.67	56.1%
07 APR 87	\$2,754.14	\$48,088.96	\$80,791.49	\$32,702.53	59.5%
10 JUN 87	\$2,238.40	\$50,327.36	\$80,791.49	\$30,464.13	62.3%
10 JUL 87	\$1,180.58	\$51,507.94	\$80,791.49	\$29,283.55	63.8%
11 AUG 87	\$2,986.11	\$54,494.05	\$80,791.49	\$26,297.44	67.5%
14 SEP 87	\$1,537.53	\$56,031.58	\$80,791.49	\$24,759.91	69.4%
	\$56,031.58				

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK 2 THERMOMECHANICAL ANALYSIS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
10 JUN 86	\$841.86	\$841.86	\$73,056.82	\$72,214.96	1.2%
15 JUL 86	\$4,224.05	\$5,065.91	\$73,056.82	\$67,990.91	6.9%
12 AUG 86	\$16,708.68	\$21,774.59	\$73,056.82	\$51,282.23	29.8%
10 SEP 86	\$7,739.83	\$29,514.42	\$73,056.82	\$43,542.40	40.4%
10 OCT 86	\$9,825.63	\$39,340.05	\$73,056.82	\$33,716.77	53.8%
14 NOV 86	\$3,104.02	\$42,444.07	\$73,056.82	\$30,612.75	58.1%
16 DEC 86	\$1,624.89	\$44,068.96	\$73,056.82	\$28,987.86	60.3%
14 JAN 87	\$1,267.27	\$45,336.23	\$73,056.82	\$27,720.59	62.1%
17 FEB 87	\$6,840.39	\$52,176.62	\$73,056.82	\$20,880.20	71.4%
17 MAR 87	\$622.54	\$52,799.16	\$73,056.82	\$20,257.66	72.3%
07 APR 87	\$4,081.49	\$56,880.65	\$73,056.82	\$16,176.17	77.9%
18 MAY 87	\$1,690.49	\$58,571.14	\$73,056.82	\$14,485.68	80.2%
10 JUN 87	\$452.43	\$59,023.57	\$73,056.82	\$14,033.25	80.8%
10 JUL 87	\$1,350.67	\$60,374.24	\$73,056.82	\$12,682.58	82.6%
11 AUG 87	\$1,563.30	\$61,937.54	\$73,056.82	\$11,119.28	84.8%
14 SEP 87	\$1,382.39	\$63,319.93	\$73,056.82	\$9,736.89	86.7%
	\$63,319.93				

TASK ORDER 2 TOTAL

AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
\$119,351.51	\$153,848.31	\$34,496.80	77.6%

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK ORDER NO. 3  
TASK 1 ROCKBURST POTENTIAL

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
14 NOV 86	\$3,173.81	\$3,173.81	\$17,732.38	\$14,558.57	17.9%
16 DEC 86	\$1,878.84	\$5,052.65	\$17,732.38	\$12,679.73	28.5%
14 JAN 87	\$1,367.63	\$6,420.28	\$17,732.38	\$11,312.10	36.2%
17 FEB 87	\$2,338.49	\$8,758.77	\$17,732.38	\$8,973.61	49.4%
11 AUG 87	\$430.59	\$9,189.36	\$17,732.38	\$8,543.02	51.8%
14 SEP 87	\$2,213.00	\$11,402.36	\$17,732.38	\$6,330.02	64.3%
	----- \$11,402.36				

TASK 2 IDENTIFICATION OF UNDERGROUND DESIGN COMPONENTS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
10 OCT 86	\$119.49	\$119.49	\$11,786.97	\$11,667.48	1.0%
14 NOV 86	\$123.88	\$243.37	\$11,786.97	\$11,543.60	2.1%
16 DEC 86	\$788.96	\$1,032.33	\$11,786.97	\$10,754.64	8.8%
14 JAN 87	\$2,545.38	\$3,577.71	\$11,786.97	\$8,209.26	30.4%
17 FEB 87	\$2,608.45	\$6,186.16	\$11,786.97	\$5,600.81	52.5%
17 MAR 87	\$638.81	\$6,824.97	\$11,786.97	\$4,962.00	57.9%
18 MAY 87	\$1,289.84	\$8,114.81	\$11,786.97	\$3,672.16	68.8%
10 JUN 87	\$874.62	\$8,989.43	\$11,786.97	\$2,797.54	76.3%
10 JUL 87	\$319.43	\$9,308.86	\$11,786.97	\$2,478.11	79.0%
11 AUG 87	\$2,607.72	\$11,916.58	\$11,786.97	(\$129.61)	101.1%
14 SEP 87	\$218.61	\$12,135.19	\$11,786.97	(\$348.22)	103.0%
	----- \$12,135.19				

TASK ORDER 3 TOTAL

AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
----- \$23,537.55	----- \$29,519.35	----- \$5,981.80	----- 79.7%

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK ORDER 5

TASK 1 BWIP MECH & THERMOMECH ANALYSIS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
18 MAY 87	\$128.63	\$128.63	\$97,736.99	\$97,608.36	0.1%
11 AUG 87	\$4,316.68	\$4,445.31	\$97,736.99	\$93,291.68	4.5%
14 SEP 87	\$1,752.08	\$6,197.39	\$97,736.99	\$91,539.60	6.3%
	\$6,197.39				

TASK 2 SRP MECH AND THERMOMECH ANALYSIS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
11 AUG 87	\$2,515.22	\$2,515.22	\$53,115.71	\$50,600.49	4.7%
14 SEP 87	\$2,457.48	\$4,972.70	\$53,115.71	\$48,143.01	9.4%
	\$4,972.70				

TASK ORDER 5 TOTAL

AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
\$11,170.09	\$150,852.70	\$139,682.61	7.4%

Sep-87

NRC TASK BUDGETS  
NRC-02-85-002

TASK ORDER 6  
TASK 1 DOCUMENT REVIEWS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
14 SEP 87	\$1,679.58	\$1,679.58	\$108,396.18	\$106,716.60	1.5%
	\$1,679.58				

TASK 2 TECHNICAL MEETINGS

DATE	AMT SPENT	TOT AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
			\$108,151.93		

TASK ORDER 6 TOTAL

AMT SPENT	BUDGET	AMT REMAIN	% COMPLETE
\$1,679.58	\$216,548.11	\$214,868.53	0.8%

WM-RES

WM Record File

D1016

Itasca

WM Project 10-11-16

Docket No. \_\_\_\_\_

PDR

\*LPDR  (B, N, E)

Distribution:

D. Iktinsky

(Return to WM, 623-SS)

fcg

WM DOCKET CENTER

27 SEP 18 10:04

495