

Fermilab

Fermi National Accelerator Laboratory
P.O. Box 500, Batavia, Illinois 60510
Phone: (630) 840-8779
Fax : (630) 840-2677
Accelerator Division/Electron Cooling

March 24, 2004

MEMO TO: Distribution

FROM: Jerry Leibfritz
Project Manager

**SUBJECT: FEBRUARY MONTHLY REPORT
MI-31
FESS/Engineering Project No. 6-6-44**

Please find attached the February 2004 monthly report for this project.

Enclosure

Distribution:

- P. Philp/MS 118
- M. Witherell/MS 105
- K. Stanfield/ MS 105
- S. Holmes/MS 105
- E. Temple/ MS 200
- J. Brown/MS 200
- H. Dick/ MS 306
- D. Carlson/MS 211
- C. Trimby/MS 212
- D. Nevin/MS 214
- E. Crumpley/MS 214
- S. Nagaitsev/ MS 307
- J. Sims/MS 214
- T. Prosapio/MS 214
- J. Spalding/MS 341
- R. Stefanski/MS 122
- Project File 6-6-44
- Chrono File

REPORTING PERIOD: February 2004

I. PROGRESS

1.1 General Construction

- a. Activity – Primary work activities included electrical terminations, and painting.
- b. Cumulative hours worked – approximately 17,000 hours through 2/29/04.
- c. Subcontractor's schedule evaluation – As of 2/29/04 the Subcontractor is on schedule. There was no pay update this month. See attached reports and section II of this report for an earned value analysis. The main Subcontract is approximately 84% by earned value complete as of 2/29/04.
- d. Engineering Change Proposals/ Requests – See latest ECP list on Website. Supplemental Agreement numbers 1 through 7 have been incorporated into the Subcontract. At this time the total subcontract amount is \$2,714,084 and the completion date is 04/20/04.
- e. Upcoming issues – Electrical termination, painting, structural steel for the mezzanine, fire protection, fire detection, site grading, equipment lift installation and crane commissioning will be the focus of the month of March.
- f. Photographs:





1.2 Project Support

- a. Efforts this month were spent on review of submittals, field supervision and construction administration related activities.

SCHEDULE INFORMATION AND MILESTONES:

| MILESTONE | DEFINITION | BASELINE | PEP Dates | Latest Estimates |
|-----------------------|--|-----------|-----------|-----------------------|
| Start Project | Directive signed | 30 May 02 | 30 May 02 | 26 Jun 02 (actual) |
| T2 Design Complete | Contract documents submitted for procurement | 15 Jan 03 | 15 Aug 02 | 15 Nov 02 (actual) |
| Begin Construction | Notice To Proceed Issued – Switch work | 27 Jun 03 | 21 Nov 02 | 17 Jan 03 (actual) |
| Construction Complete | Final acceptance of all work | 9 Jun 04 | 9 Dec 03 | 20 Apr 04 |
| Project Complete | Project closed | 30 Nov 04 | 10 Dec 03 | 20 Jun 04 |

II. Overall Project Cost Summary and Earned Value Analysis:

| ORIGINAL BASELINE PROJECT COSTS (2001 dollars) | | | | Latest Estimated Cost* | |
|--|-----------------------------|------|---------------------|------------------------|-----|
| 1.1 | General Construction | | \$ 3,047,000 | \$ 3,133,720 | |
| 1.1.1 | Construction W / 18% OHP | | \$ 2,323,000 | \$ 2,882,389 | |
| 1.1.2 | Construction Contingency | 22% | \$ 511,000 | \$ 145,460 | 5% |
| 1.1.3 | Construction G & A | | \$ 83,000 | \$ 105,871 | |
| 1.1.4 | Escalation (4.6%) | 4.6% | \$ 130,000 | \$ 0 | |
| 1.2 | Project Support | | \$ 763,000 | \$ 676,280 | |
| 1.2.1 | Project Engineering | | \$ 465,000 | \$ 482,487 | |
| 1.2.2 | Project Support Contingency | 21% | \$ 99,000 | \$ 58,502 | 12% |
| 1.2.3 | Project Support G & A | | \$ 166,000 | \$ 135,291 | |
| 1.2.4 | Escalation (4.6%) | | \$ 33,000 | \$ 0 | |
| Total Project Cost | | | \$ 3,810,000 | \$ 3,810,000 | |

*NOTE THAT 1.1 AND 1.2 HAVE BEEN REDISTRIBUTED (2/21/03) TO REFLECT USE OF MUCH OF THE ESCALATION, ACTUAL FIXED PRICE CONSTRUCTION COSTS, AND A HIGHER CONTINGENCY. Includes Supplemental Agreements 1,through 7 and all T&M actual costs to date.

TPC Earned Value Analysis as of February 29, 2004 (based on earned value reports for February 2004):

1. The Schedule Variance is \$252,082. (high because we did not have an update with Whittaker this month)
2. The Cost Variance is \$17,909



ATTACHMENTS

See MI-31 website

<http://www-ap.fnal.gov/ecool/internal.html>

for the following:

TSR Report for 2-04

Earned Value Reports - Cost Reports and Graphs up to 2-04

Engineering Change Proposal List

More Photographs

Task Summary Report by Expenditure Type ("TSR")

Period End: FEB-04

Report on tasks: 1

A0201 - MI31 Ecooling Bldg

1 - MI31 Ecooling Bldg
Service Type: PL-EXST PRGM
SUPP-AIP

| | Curr Month Costs | Curr YTD Costs | Curr YTD Obligations | Inception to Date Obligations | Inception to Date Costs | Reqs. in Process | Open Commitments |
|--------------------------|------------------|-----------------|----------------------|-------------------------------|-------------------------|------------------|------------------|
| <u>Personnel Costs</u> | | | | | | | |
| FRINGE BENEFITS | 43.84 | 862.31 | 862.31 | 3,053.37 | 3,053.37 | 0.00 | 0.00 |
| OPTO ALLOC-MONTHLY | 7.62 | 150.00 | 150.00 | 855.05 | 855.05 | 0.00 | 0.00 |
| OPTO ALLOC-WEEKLY | 0.00 | 0.00 | 0.00 | 79.14 | 79.14 | 0.00 | 0.00 |
| OVERTIME | 0.00 | 76.06 | 76.06 | 180.15 | 180.15 | 0.00 | 0.00 |
| TIME WORKED -MONTHLY | 117.33 | 2,307.81 | 2,307.81 | 11,207.05 | 11,207.05 | 0.00 | 0.00 |
| TIME WORKED -WEEKLY | 0.00 | 0.00 | 0.00 | 15.93 | 15.93 | 0.00 | 0.00 |
| VAC EARNED ALLOC-MONTHLY | 12.91 | 253.85 | 253.85 | 1,434.10 | 1,434.10 | 0.00 | 0.00 |
| VAC EARNED ALLOC-WEEKLY | 0.00 | 0.00 | 0.00 | 94.91 | 94.91 | 0.00 | 0.00 |
| Personnel Costs | 181.70 | 3,650.03 | 3,650.03 | 16,919.70 | 16,919.70 | 0.00 | 0.00 |

Materials & Services

| | | | | | | | |
|-----------------------------|------------|------------|-------------|--------------|--------------|-----------|------------|
| CONSTRUCTION ENGINEERING | 25,769.00 | 101,762.00 | 101,762.00 | 353,007.00 | 353,007.00 | 0.00 | 0.00 |
| EXEMPT - CIVIL CONSTR. | 0.00 | 560,829.00 | 639,377.00 | 1,821,863.00 | 1,743,315.00 | 51,031.00 | 78,548.00 |
| EXEMPT - CIVIL CONSTRUCTION | 262,259.00 | 542,839.00 | -560,829.00 | 892,221.00 | 542,839.00 | 0.00 | 349,382.00 |
| FEES | 0.00 | 0.00 | 0.00 | 500.00 | 500.00 | 0.00 | 0.00 |
| FREIGHT | 224.54 | 230.38 | 230.38 | 235.95 | 235.95 | 0.00 | 0.00 |
| MACHINE SHOP | 0.00 | 110.00 | 110.00 | 110.00 | 110.00 | 0.00 | 0.00 |
| MATERIAL PURCHASES | 17,996.50 | 18,828.50 | 61,822.06 | 82,283.77 | 39,290.21 | 0.00 | 42,993.56 |
| PHOTO/GRAPHIC SERVICES | 11.00 | 92.00 | 92.00 | 170.00 | 170.00 | 0.00 | 0.00 |
| STORES ISSUES | 0.00 | 0.00 | 0.00 | 640.42 | 640.42 | 0.00 | 0.00 |
| SUB-CONTRACT SERVICES | 1,247.32 | 3,293.51 | 10,158.80 | 118,809.03 | 107,013.70 | 0.00 | 11,795.33 |
| T&M CONSTRUCTION SVCS. | 0.00 | 0.00 | 0.00 | 8,678.12 | 8,678.12 | 0.00 | 0.00 |

1 - MI31 Ecooling Bldg
Service Type: PL-EXST PRGM
SUPP-AIP

| | Curr Month Costs | Curr YTD Costs | Curr YTD Obligations | Inception to Date Obligations | Inception to Date Costs | Reqs. in Process | Open Commitments |
|---|-----------------------------|---------------------------|---------------------------------|--|------------------------------------|-----------------------------|-----------------------------|
| <u>Materials & Services</u> | | | | | | | |
| T&M ELECTRICAL SERVICES | 0.00 | 0.00 | 0.00 | 12,966.11 | 12,966.11 | 0.00 | 0.00 |
| T&M PIPE FITTERS | 0.00 | 0.00 | 0.00 | 2,050.86 | 2,050.86 | 0.00 | 0.00 |
| T&M RIGGING SERVICES | 0.00 | 19,424.12 | -16,454.16 | 64,829.68 | 64,829.68 | 0.00 | 0.00 |
| TRAVEL, DOMESTIC-LAB EMPLOYEE | 0.00 | 95.13 | 95.13 | 95.13 | 95.13 | 0.00 | 0.00 |
| Materials & Services | 307,507.36 | 1,247,503.64 | 236,364.21 | 3,358,460.07 | 2,875,741.18 | 51,031.00 | 482,718.89 |
| <u>Indirect Cost</u> | | | | | | | |
| CSS ALLOCATION | 4,800.88 | 19,521.60 | 19,521.60 | 67,661.23 | 67,661.23 | 0.00 | 0.00 |
| G&A ALLOCATION | 1.10 | 18.71 | 18.71 | 62,294.37 | 62,294.37 | 0.00 | 0.00 |
| G&A ALLOCATION-CSS PORTION | 3,075.17 | 12,504.41 | 12,504.41 | 38,061.10 | 38,061.10 | 0.00 | 0.00 |
| G&A ALLOCATION-M&S PORTION | 2,053.94 | 4,407.45 | 4,407.45 | 20,610.49 | 20,610.49 | 0.00 | 0.00 |
| MSA ALLOCATION | 1,070.76 | 2,297.72 | 2,297.72 | 42,039.98 | 42,039.98 | 0.00 | 0.00 |
| Indirect Cost | 11,001.85 | 38,749.89 | 38,749.89 | 230,667.17 | 230,667.17 | 0.00 | 0.00 |
| 1 - MI31 Ecooling Bldg SUBTOTAL: | 318,690.91 | 1,289,903.56 | 278,764.13 | 3,606,046.94 | 3,123,328.05 | 51,031.00 | 482,718.89 |
| DIST. TO ACCOUNTS REC'BL: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| UNDISTRIBUTED BALANCE: | 318,690.91 | 1,289,903.56 | 278,764.13 | 3,606,046.94 | 3,123,328.05 | 51,031.00 | 482,718.89 |

REPORT TOTALS

| | | | | | | | |
|------------------------------|-------------------|---------------------|-------------------|---------------------|---------------------|------------------|-------------------|
| TOTAL PROJECT/TASK: | 318,690.91 | 1,289,903.56 | 278,764.13 | 3,606,046.94 | 3,123,328.05 | 51,031.00 | 482,718.89 |
| TOTAL DIST. ACCTS REC'BL: | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL UNDIST BALANCE: | 318,690.91 | 1,289,903.56 | 278,764.13 | 3,606,046.94 | 3,123,328.05 | 51,031.00 | 482,718.89 |

BCWP
MI-31 Spending Profile
WBS 1.1 and 1.2

| Title Source Type | WBS 1.2 Project Support | | | | | | | | | | | | | WBS 1.1 Construction | | | | | | | | | | | | | Monthly Totals | Cumulative Totals | | | | | | | | |
|-------------------|-------------------------|---------------|--------------------|-------------|-------------|--------------------|-------------|--------------------|-------------|-----------------|-----------|----------------|-------------------|----------------------|---------------|---------------------|---------------|----------------|----------------|-----------------------|----------------------|---------------|------------|-----------------------|--------------------|---------------|----------------|-----------------------|--------------------|-----------------|-----------------|-----------------|-------------------|-------------|-----------------|-------|
| | ED&I | | | | | | A | | | | | | | Subcontract | Subcontract | Subcontract | Subcontract | Switch conduit | Switch conduit | Transformer Purchase | Transformer Purchase | Cable Tray | Cable Tray | Cabling | Cabling | Chiller | | | Chiller | Shielding Steel | Shielding Steel | Shielding Steel | Shielding Steel | Inst. | Shielding Steel | Inst. |
| | T2 Hanson Direct | T2 Hanson G&A | T2 FESS Chargeback | T2 FESS G&A | T3 FESS M&S | T3 FESS Chargeback | T3 FESS G&A | T3 FESS Chargeback | T3 FESS G&A | T3 PM Salary TX | T3 PM G&A | Monthly Totals | Cumulative Totals | Whittaker Direct** | Whittaker G&A | Whittaker Incentive | Whittaker G&A | T3 T&M Direct | T3 T&M G&A | T3 Procurement Direct | T3 Procurement G&A | T3 T&M Direct | T3 T&M G&A | T3 Procurement Direct | T3 Procurement G&A | T3 T&M Direct | T3 T&M G&A | T3 Procurement Direct | T3 Procurement G&A | T3 T&M Direct | T3 T&M G&A | Monthly Totals | Cumulative Totals | | | |
| F Y O 2 | Mo-Yr | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Jul-02 | \$25,000 | \$4,250 | \$10,000 | \$3,000 | \$300 | \$51 | | | | | \$42,601 | \$42,601 | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | |
| | Aug-02 | \$20,000 | \$3,400 | \$10,000 | \$3,000 | | | | | \$1,000 | \$300 | \$37,700 | \$80,301 | | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | |
| | Sep-02 | \$24,587 | \$4,180 | \$11,800 | \$3,540 | | | | | \$1,000 | \$300 | \$45,407 | \$125,708 | | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | |
| F Y O 3 | Oct-02 | \$10,000 | \$3,485 | \$10,000 | \$3,000 | \$300 | \$51 | \$3,000 | \$900 | \$1,000 | \$300 | \$18,551 | \$144,259 | | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | |
| | Nov-02 | \$20,500 | \$3,485 | \$10,000 | \$3,000 | | | \$3,000 | \$900 | \$1,000 | \$300 | \$42,185 | \$186,444 | | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | |
| | Dec-02 | | | | | | | \$3,000 | \$900 | \$1,000 | \$300 | \$7,800 | \$194,244 | | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | |
| | Jan-03 | | | | | | | \$3,000 | \$900 | \$1,000 | \$300 | \$7,800 | \$202,044 | | | | | | | \$10,396 | \$1,913 | | | | | | | | | | | | | \$12,309 | \$12,309 | |
| | Feb-03 | | | | | | | \$3,000 | \$900 | \$1,000 | \$300 | \$7,800 | \$209,844 | | | | | | | \$10,435 | \$1,920 | | | | | | | | | | | | \$12,355 | \$24,664 | | |
| | Mar-03 | | | | | \$200 | \$34 | \$12,000 | \$3,720 | \$11,000 | \$3,410 | \$1,000 | \$300 | \$31,664 | \$241,508 | \$0 | | | | \$66 | \$12 | | | | | | | | | | | | \$78 | \$24,742 | | |
| | Apr-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$274,048 | \$92,204 | | | | \$20,537 | \$3,257 | | | | | | | | | | | | \$115,996 | \$140,740 | | |
| | May-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$306,588 | \$331,522 | | | | | | | | | | | | | | | | | \$331,522 | \$472,262 | | |
| | Jun-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$339,128 | \$320,000 | \$80,240 | | | | | | | | | | | | | | | | | \$400,240 | \$872,502 | |
| | Jul-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$371,668 | \$109,886 | | | | | | | | | | | | | | | | | | \$109,886 | \$982,388 | |
| | Aug-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$404,208 | \$253,407 | | | | | | | | | | | | | | | | | | \$253,407 | \$1,235,795 | |
| | Sep-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$436,748 | \$104,898 | | | | | | | | | | | | | | | | | | \$150,731 | \$1,386,526 | |
| F Y O 4 | Oct-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$469,288 | \$119,114 | \$20,000 | | | | | | | | | | | \$39,087 | \$6,746 | | | | | \$177,992 | \$1,564,518 | |
| | Nov-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$501,828 | \$390,529 | | | | | | | | | | | | | | | | | | \$390,529 | \$1,955,047 | |
| | Dec-03 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$534,368 | \$231,536 | | | | | | | | | | | | | | | | | | \$231,536 | \$2,186,583 | |
| | Jan-04 | | | | | | | \$12,000 | \$3,720 | \$12,000 | \$3,720 | \$900 | \$200 | \$32,540 | \$566,908 | \$262,259 | | | | | | | | | | | | | | | | | | \$262,259 | \$2,448,842 | |
| | Feb-04 | | | | | | | \$8,000 | \$2,480 | \$8,000 | \$2,480 | \$900 | \$200 | \$22,060 | \$588,968 | \$0 | | | | | | | | | | | | | | | | | | \$17,180 | \$2,466,022 | |
| | Mar-04 | | | | | | | \$0 | | \$0 | | \$0 | \$588,968 | \$588,968 | \$0 | | | | | | | | | | | | | | | | | | | \$0 | \$2,466,022 | |
| | Apr-04 | | | | | | | \$0 | | \$0 | | \$0 | \$588,968 | \$588,968 | \$0 | | | | | | | | | | | | | | | | | | | \$0 | \$2,466,022 | |
| TOTALS | | \$90,087 | \$15,315 | \$51,800 | \$15,540 | \$800 | \$136 | \$146,000 | \$45,200 | \$154,000 | \$47,590 | \$17,900 | \$4,600 | \$2,215,355 | \$80,240 | \$20,000 | \$0 | \$20,897 | \$3,845 | \$20,537 | \$3,257 | \$14,810 | \$2,370 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$39,087 | \$6,746 | \$33,154 | \$5,724 | \$3,054,989 | | |

WBS 1.2 Escalation and Contingency

Total for WBS 1.2 = \$676,280
 Total Direct and G&A (above) = \$588,968 *
 Project Support Escalation = \$0
 Project Support Contingency = \$87,312 19%

* Total Indirect = \$128,381
 Total Direct = \$460,587

** NOTE BUDGETED COST OF WORK PERFORMED IS BASED ON WHITTAKERS LATEST T3 COST LOADED SCHEDULE.

WBS 1.1 Escalation and Contingency

Total for WBS 1.1 = \$3,133,720
 Total Direct and G&A (above) = \$2,466,022 *
 Project Support Escalation = \$0
 Construction Contingency = \$667,698 28%

* Total Indirect = \$102,182
 Total Direct = \$2,363,840

ACWP
MI-31 Actual Spending Profile
WBS 1.1 and 1.2

| FY | Title Source Type | WBS 1.2 Project Support | | | | | | | | | | | | | WBS 1.1 Construction | | | | | | | | | | | | | Monthly Totals | Cumulative Totals | Monthly Totals | Cumulative Totals | | | | | | | | | | | | | | |
|------|-------------------|-------------------------|---------------|--------------------|-------------|--------------------|-----------------|--------------------|-------------|--------------------|-------------|-----------------|-----------|----------|----------------------|--------------------|---------------|---------------------|---------------|---------------|----------------|-----------------------|--------------------|----------------------|------------|---------------|------------|----------------|-------------------|----------------|-------------------|---------------|------------|---------------|------------|---------------|-------------|---------------------|-------------|--|-----------------------|--|--|--|--|
| | | ED&I | | | | | | A | | | | | | | Subcontract | | | Subcontract | | | Switch conduit | | | Transformer Purchase | | | Cable Tray | | | | | Cabling | | | Chiller | | | Shielding Steel Fab | | | Shielding Steel Inst. | | | | |
| | | T2 Hanson Direct | T2 Hanson G&A | T2 FESS Chargeback | T2 FESS G&A | T3 FESS M&S Direct | T3 FESS M&S G&A | T3 FESS Chargeback | T3 FESS G&A | T3 FESS Chargeback | T3 FESS G&A | T3 PM Salary TX | T3 PM G&A | Monthly | Cumulative | Whittaker Direct** | Whittaker G&A | Whittaker Incentive | Whittaker G&A | T3 T&M Direct | T3 T&M G&A | T3 Procurement Direct | T3 Procurement G&A | T3 T&M Direct | T3 T&M G&A | T3 T&M Direct | T3 T&M G&A | | | | | T3 T&M Direct | T3 T&M G&A | T3 T&M Direct | T3 T&M G&A | T3 T&M Direct | T3 T&M G&A | Monthly | Cumulative | | | | | | |
| 2002 | Jul-02 | | | \$8,512 | \$2,477 | \$304 | \$52 | | | | | | | \$11,345 | \$11,345 | | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | |
| | Aug-02 | \$41,283 | \$7,018 | \$12,736 | \$3,550 | | | | | | | \$967 | \$290 | \$65,844 | \$77,189 | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | | |
| | Sep-02 | \$28,350 | \$4,820 | \$13,376 | \$4,013 | | | | | | | \$967 | \$290 | \$51,815 | \$129,004 | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | | |
| 2003 | Oct-02 | | | \$5,503 | \$1,535 | \$2,594 | \$441 | \$8,130 | \$2,268 | | | \$500 | \$201 | \$21,171 | \$150,175 | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | | |
| | Nov-02 | \$20,500 | \$3,764 | | | | | \$6,070 | \$1,730 | \$2,024 | \$577 | \$803 | \$241 | \$35,708 | \$185,884 | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | | |
| | Dec-02 | | | | | | | \$5,538 | \$1,816 | \$6,390 | \$2,098 | \$857 | \$111 | \$16,810 | \$202,694 | | | | | | | | | | | | | | | | | | | \$0 | \$0 | | | | | | | | | | |
| | Jan-03 | | | | | | | \$1,562 | \$484 | \$6,106 | \$1,893 | \$679 | \$124 | \$10,849 | \$213,543 | | | | | | | | | | | | | | | | | | | \$12,309 | \$12,309 | | | | | | | | | | |
| | Feb-03 | | | | | | | \$12,000 | \$3,720 | \$5,608 | \$1,738 | \$836 | \$110 | \$24,012 | \$237,555 | | | | | | | | | | | | | | | | | | | \$12,355 | \$24,664 | | | | | | | | | | |
| | Mar-03 | | | | | | | \$16,015 | \$5,125 | \$2,800 | \$896 | \$836 | \$291 | \$25,963 | \$263,518 | | | | | | | | | | | | | | | | | | | \$78 | \$24,742 | | | | | | | | | | |
| | Apr-03 | | | | | | | \$9,372 | \$2,999 | \$1,846 | \$591 | \$1,233 | \$63 | \$16,104 | \$279,622 | \$92,204 | | | | | | | | | | | | | | | | | | | \$116,307 | \$141,049 | | | | | | | | | |
| | May-03 | | | | | | | \$14,444 | \$4,333 | \$9,230 | \$2,769 | \$1,018 | \$266 | \$32,060 | \$311,682 | \$331,522 | | | | | | | | | | | | | | | | | | | \$331,522 | \$472,571 | | | | | | | | | |
| | Jun-03 | | | | | | | \$10,781 | \$3,234 | \$12,354 | \$3,706 | \$909 | \$155 | \$31,139 | \$342,821 | \$320,000 | \$80,240 | | | | | | | | | | | | | | | | | | | \$400,240 | \$872,811 | | | | | | | | |
| | Jul-03 | | | | | | | \$10,773 | \$3,232 | \$14,000 | \$4,200 | \$255 | \$77 | \$32,537 | \$375,358 | \$109,886 | | | | | | | | | | | | | | | | | | | | \$110,419 | \$983,230 | | | | | | | | |
| | Aug-03 | | | | | | | \$6,223 | \$1,867 | \$19,525 | \$5,858 | \$1,231 | \$209 | \$34,913 | \$410,271 | \$253,407 | | | | | | | | | | | | | | | | | | | | \$271,392 | \$1,254,622 | | | | | | | | |
| | Sep-03 | | | | | | | \$5,933 | \$1,780 | \$32,376 | \$9,713 | \$1,177 | \$354 | \$51,332 | \$461,603 | \$104,898 | | | | | | | | | | | | | | | | | | | | | \$147,192 | \$1,401,815 | | | | | | | |
| | Oct-03 | | | | | | | \$2,920 | \$876 | \$12,921 | \$3,876 | \$1,696 | \$271 | \$22,623 | \$484,226 | \$119,114 | | | | | | | | | | | | | | | | | | | | | \$163,013 | \$1,564,827 | | | | | | | |
| | Nov-03 | | | | | | | \$12,038 | \$3,611 | \$15,987 | \$4,796 | \$791 | \$135 | \$37,358 | \$521,584 | \$390,529 | | | | | | | | | | | | | | | | | | | | | \$390,529 | \$1,955,356 | | | | | | | |
| | Dec-03 | | | | | | | \$8,361 | \$2,508 | \$10,957 | \$3,287 | \$1,081 | \$371 | \$26,564 | \$548,148 | \$231,536 | | | | | | | | | | | | | | | | | | | | | \$231,536 | \$2,186,892 | | | | | | | |
| | Jan-04 | | | | | | | \$5,497 | \$1,649 | \$9,417 | \$2,825 | \$0 | \$0 | \$19,988 | \$567,536 | \$262,259 | | | | | | | | | | | | | | | | | | | | | | \$262,259 | \$2,449,151 | | | | | | |
| | Feb-04 | | | | | | | \$12,124 | \$3,637 | \$14,892 | \$4,468 | \$182 | \$31 | \$35,334 | \$602,870 | \$0 | | | | | | | | | | | | | | | | | | | | | | \$20,877 | \$2,470,028 | | | | | | |
| | Mar-04 | | | | | | | | | | | | | \$0 | \$602,870 | | | | | | | | | | | | | | | | | | | | | | | \$0 | \$3,072,898 | | | | | | |
| | Apr-04 | | | | | | | | | | | | | \$0 | \$602,870 | | | | | | | | | | | | | | | | | | | | | | | \$0 | \$2,470,028 | | | | | | |
| | TOTALS | \$90,133 | \$15,601 | \$40,127 | \$11,575 | \$3,037 | \$516 | \$147,780 | \$44,871 | \$176,433 | \$53,290 | \$15,918 | \$3,590 | | \$2,215,355 | \$80,240 | \$20,000 | \$0 | \$20,897 | \$3,845 | \$20,357 | \$3,746 | \$17,997 | \$2,879 | \$0 | \$0 | \$0 | \$0 | \$39,087 | \$6,746 | \$33,154 | \$6,724 | | | | | | | | | | | | | |

| TPC | |
|----------------|-------------------|
| Monthly Totals | Cumulative Totals |
| \$11,345 | \$11,345 |
| \$65,844 | \$77,189 |
| \$51,815 | \$129,004 |
| \$0 | \$0 |
| \$0 | \$0 |
| \$0 | \$0 |
| \$35,708 | \$185,884 |
| \$16,810 | \$202,694 |
| \$12,309 | \$225,852 |
| \$12,355 | \$24,664 |
| \$78 | \$24,742 |
| \$116,307 | \$141,049 |
| \$331,522 | \$472,571 |
| \$363,583 | \$784,253 |
| \$400,240 | \$872,811 |
| \$110,419 | \$983,230 |
| \$271,392 | \$1,254,622 |
| | \$369 |
| | \$164 |
| | \$15,372 |
| | \$2,613 |
| | \$23,346 |
| | \$3,969 |
| | \$12,803 |
| | \$20,351 |
| | \$3,548 |
| \$147,192 | \$1,401,815 |
| \$163,013 | \$1,564,827 |
| \$185,636 | \$2,049,053 |
| \$427,887 | \$2,476,940 |
| \$258,100 | \$2,735,040 |
| \$262,259 | \$2,449,151 |
| \$20,877 | \$2,470,028 |
| \$0 | \$3,072,898 |
| \$0 | \$3,072,898 |

WBS 1.2 Escalation and Contingency
 Total for WBS 1.2 = \$676,280
 Total Direct and G&A (above) = \$602,870
 Project Support Escalation = \$0
 Project Support Contingency = \$73,410 Not Accurate, Reflects unused portions of Direct and Indirect Costs

**** NOTE: THIS SPREAD SHEET WILL NOT FOLLOW THE MONTHLY TSR DIRECTLY BECAUSE COST SHOWN UNDER WHITTAKERS T3 SUBCONTRACT ARE EARNED VALUE NOT WHAT HAS BEEN PAID OUT. SEE THE CHART BELOW FOR PAYOUT INFORMATION.**

WBS 1.1 Escalation and Contingency
 Total for WBS 1.1 = \$13,132,720
 Total Direct and G&A (above) = \$2,470,027
 Project Support Escalation = \$0
 Construction Contingency = \$663,693 Not Accurate, Reflects unused portions of Direct and Indirect Costs

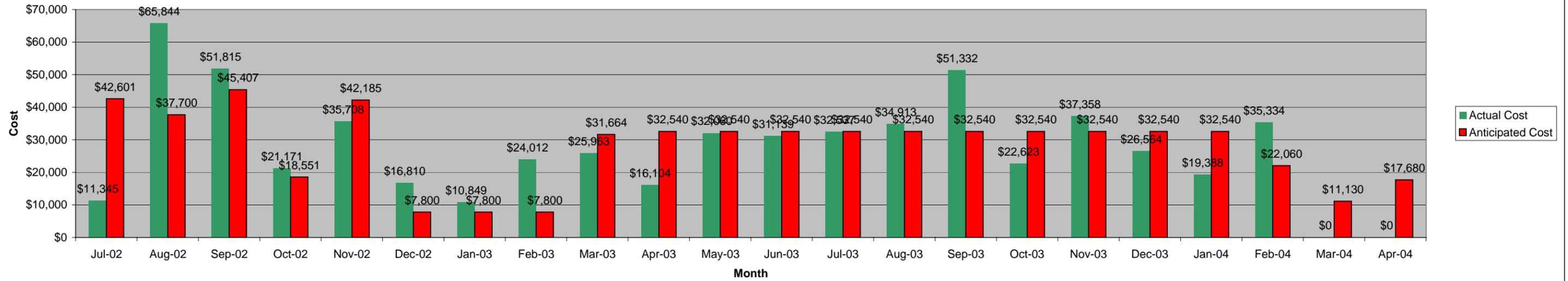
*Total Indirect= \$129,444
 Total Direct = \$473,426

*Total Indirect= \$103,180
 Total Direct = \$2,366,847

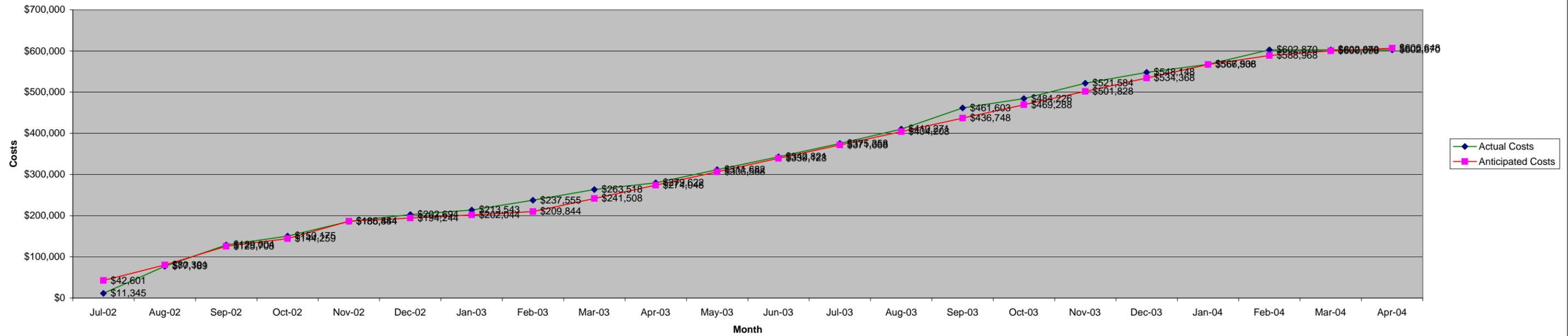
Note:
 1. G&A distribution by month is approximate
 2. Text in italics includes costs from Hanson Engineers PO 550107 as support of FESS/Engr in house efforts.

| Payout # | Payout Date | PAYMENT amount | Completion DATE | Actual Comp DATE | AMOUNT | CUMULATIVE TOTAL PAYOUT | RETENTION 10% RETENTION | CUMULATIVE 10% RETENTION | % OF CONTRACT COMPLETE |
|-----------|-------------|----------------|-----------------|------------------|----------------|-------------------------|-------------------------|--------------------------|------------------------|
| Payout #1 | 6/12/2003 | \$399,141 | 1A | 05/02/03 | \$118,384.00 | \$118,384.00 | \$11,838.40 | \$11,838.40 | 15% |
| | | | 1B | 06/18/03 | \$280,757.00 | \$399,141.00 | \$28,075.70 | \$39,914.10 | |
| Payout #2 | 7/1/2003 | \$361,749 | 1C | 06/25/03 | \$210,313.00 | \$609,454.00 | \$21,031.30 | \$60,945.40 | 28% |
| | | | 1D | 06/27/03 | \$106,112.00 | \$715,566.00 | \$10,611.20 | \$71,556.60 | |
| Payout #3 | 8/13/2003 | \$180,404 | 1E | 07/25/03 | \$45,324.00 | \$760,890.00 | \$4,532.40 | \$76,089.00 | 35% |
| | | | 1F | 08/08/03 | \$89,708.00 | \$850,598.00 | \$8,970.80 | \$85,059.80 | |
| Payout #4 | 9/3/2004 | \$165,725 | 1G | 08/05/03 | \$87,682.00 | \$938,280.00 | \$8,768.20 | \$93,828.00 | 41% |
| | | | 1H | 07/24/03 | \$3,014.00 | \$941,294.00 | \$301.40 | \$94,129.40 | |
| Payout #5 | 10/20/2003 | \$174,042 | 1I | 08/28/03 | \$88,043.00 | \$1,029,337.00 | \$8,804.30 | \$102,933.70 | 47% |
| | | | 1J | 09/08/03 | \$77,682.00 | \$1,107,019.00 | \$7,768.20 | \$110,701.90 | |
| Payout #6 | 11/21/2003 | \$460,499 | 2A | 10/31/03 | \$60,617.00 | \$1,341,678.00 | \$6,061.70 | \$134,167.80 | 64% |
| | | | 2B | 11/14/03 | \$68,843.00 | \$1,410,521.00 | \$6,884.30 | \$141,052.10 | |
| | | | 2C | 11/19/03 | \$26,363.00 | \$1,436,884.00 | \$2,636.30 | \$143,688.40 | |
| | | | 2E | 12/21/03 | \$184,659.00 | \$1,621,543.00 | \$18,465.90 | \$162,154.30 | |
| Payout #7 | 12/31/2003 | \$231,536 | 2D | 11/10/04 | \$46,172.00 | \$1,667,715.00 | \$4,617.20 | \$166,771.50 | 73% |
| | | | 3A | 11/17/03 | \$73,845.00 | \$1,741,560.00 | \$7,384.50 | \$174,156.00 | |
| | | | 2F | 12/31/03 | \$107,648.00 | \$1,849,208.00 | \$10,764.80 | \$184,920.80 | |
| Payout #8 | 1/30/2004 | \$262,259 | 2G | 12/31/03 | \$103,663.00 | \$1,952,871.00 | \$10,366.30 | \$195,287.10 | 82% |
| | | | 3B | 12/16/03 | \$20,225.00 | \$1,973,096.00 | \$2,022.50 | \$197,309.60 | |
| | | | 4B | 02/23/04 | \$48,887.00 | \$2,235,355.00 | \$2,444.35 | \$111,767.75 | |
| | | | 2D | 11/20/03 | \$9,850.00 | | | | |
| | | | 3C | 02/16/04 | \$15,750.00 | | | | |
| | | | 3E | 03/01/04 | \$21,166.00 | | | | |
| | | | 3F | 03/02/04 | \$259,645.00 | | | | |
| | | | 4A | 03/02/04 | \$8,530.00 | | | | |
| | | | 4C | 03/24/04 | \$84,375.00 | | | | |
| | | | 4D | 03/24/04 | \$12,886.00 | | | | |
| | | | 4E | 03/24/04 | \$10,727.00 | | | | |
| | | | 6 | 04/02/04 | \$20,800.00 | | | | |
| | | | 7 | 04/20/04 | \$35,000.00 | | | | |
| | | | | | \$2,714,084.00 | | | | |

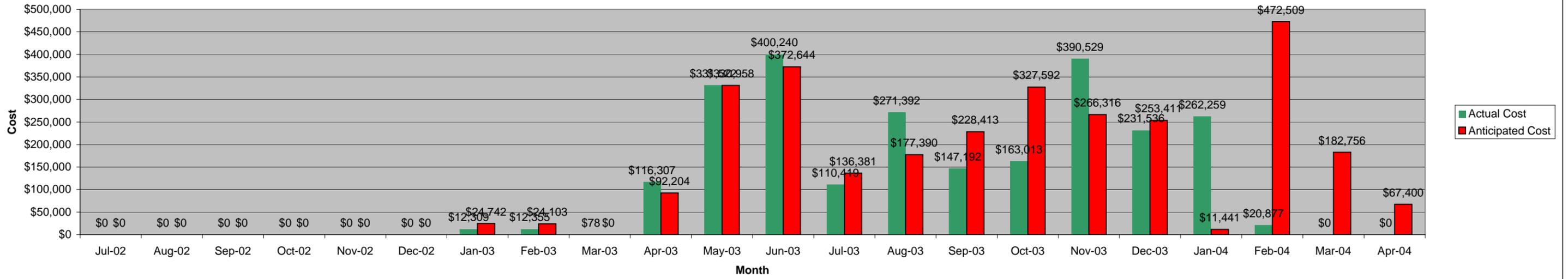
WBS 1.2 Monthly



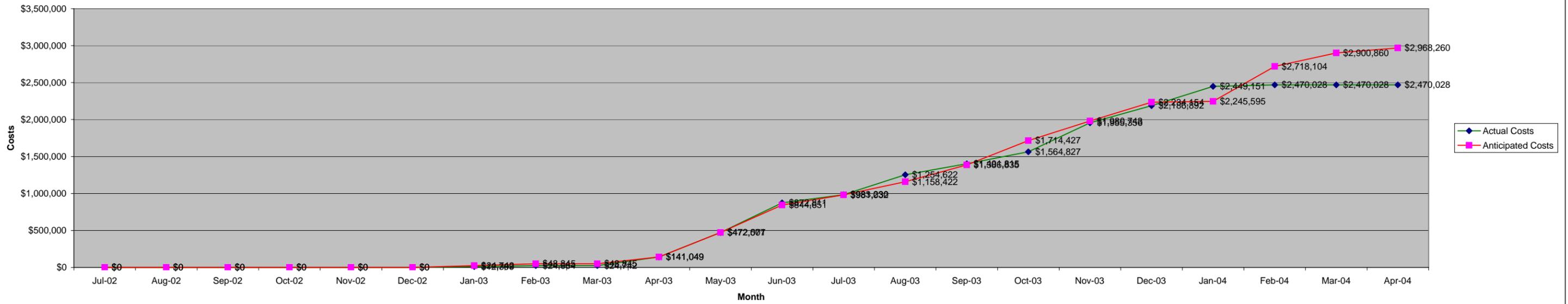
WBS 1.2 Cumulative



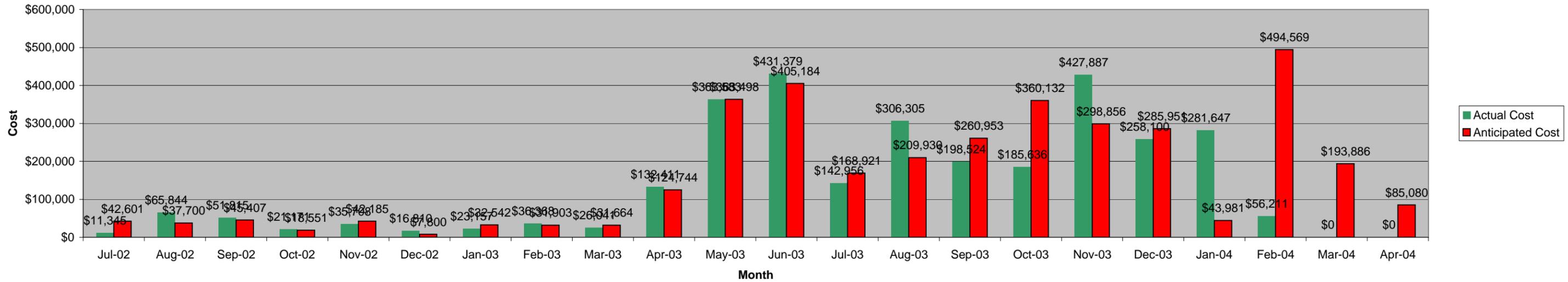
WBS 1.1 Monthly



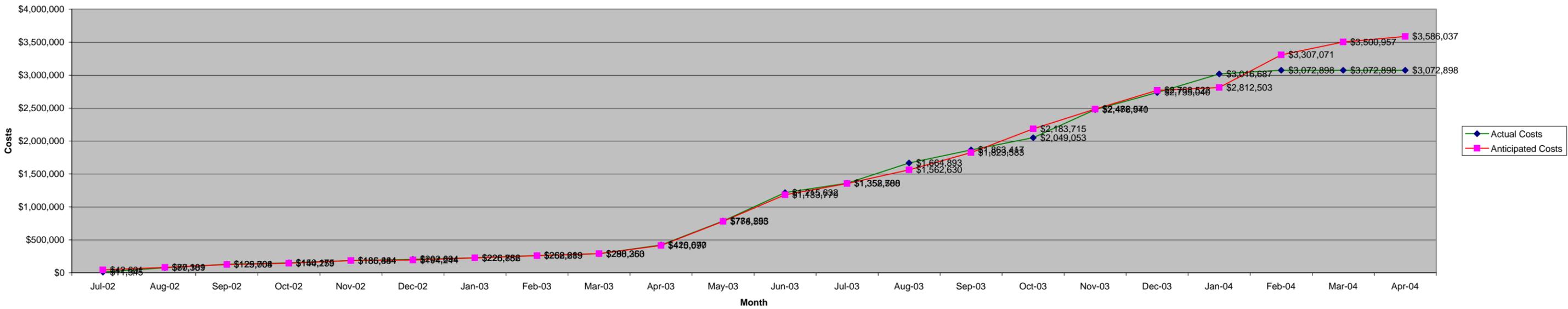
WBS 1.1 Cumulative



TPC Monthly



TPC Cumulative



MI-31 ECP LIST

| ECP # | Description | Date Issued from CMO | Anticipated Credit, Extra or No Cost | Associated Sketch Number | Actual Credit, Extra or No Cost | Associated Payment Milestone | Overall Schedule Impact In Days | Whittaker Proposal Date | Accepted/Rejected or Pending | Req. # | Req. Approval Date | SA # | Date Work Complete | Comments |
|-------|---|----------------------|--------------------------------------|---------------------------------|---------------------------------|------------------------------|---------------------------------|-------------------------|------------------------------|--------|--------------------|------|--------------------|--|
| 1 | Holeless elevator instead of single cylinder elevator and add pit ladder | 3/12/2003 | Extra - \$5000 | SK-1... | \$19,390 | 3a | 0 | 4/17/2003 | Accepted | 163820 | 5/6/2003 | 2 | | |
| 1a | Full width doors on elevator | 3/12/2003 | Extra - \$3000 | SK-1... | \$3,080 | 3a | 0 | 4/17/2003 | Accepted | 163822 | 5/6/2003 | 2 | | |
| 2 | Watermain valve clarifications/ modifications and installation of flushing hydrants. | 3/12/2003 | No Cost | SK-2 | \$1,665 | 1e | 1 | 3/19/2003 | Accepted | 163549 | 4/15/2003 | 1 | 7/15/2003 | |
| 3 | Reduce shut down schedule from 6 weeks to 5 weeks VOID | 3/12/2003 | NA | None | \$0 | 5a | 0 | 3/28/2003 | Rejected | | | | | Void |
| 4 | Earth retention changes – including bottom of soldier piles to elevation 698 and shielding distance of 18.4 feet. | 3/12/2003 | No Cost | SK-4 | \$0 | 1b | 1 | 3/28/2003 | Accepted | --- | 4/4/2003 | 1 | 4/30/2003 | |
| 5 | Temporary Bulkhead Door | 3/21/2003 | Extra - \$7000 | SK-5 | \$10,231 | 5a | 1 | 4/14/2003 | Accepted | 163802 | 4/25/2003 | 1 | 9/11/2003 | |
| 6 | Modifications to MI Ducts | 6/26/2003 | Extra – \$30,000 | SK-6 | \$46,117 | 5a | 5 | 7/21/2003 | Accepted | 165776 | 8/1/2003 | 4 | 10/15/2003 | |
| 7 | Install 6 Atlas Piles at MI-30 | From Sub | Extra - \$25,000 | See Excavation Plan | \$26,180 | 1a | 3 | 3/28/2003 | Accepted | 163420 | 5/1/2003 | 1 | 5/7/2003 | Rush Requisition, added because excavation plan required supporting building. Approval by CCB required |
| 8 | Credit for Wall Panel Coating change – three coat system to two coat system | 4/22/2003 | Credit – \$3,500 | None | -\$3,500 | 2h | 0 | 4/25/2003 | Accepted | -- | 4/25/2003 | 2 | | |
| 9 | Credit for substitute damp proofing product | 4/22/2003 | Credit- \$7,000 | None | -\$7,500 | 1i | 0 | 4/25/2003 | Accepted | -- | 4/25/2003 | 2 | 10/15/2003 | |
| 10 | Temporary Work Platform on MI-30 | 5/5/2003 | Extra - \$3500 | Page 1 of 1 | \$4,610 | 1b | 1 | 5/14/2003 | Accepted | 164321 | 5/19/2003 | 3 | 6/1/2003 | Field Directed on 5/15/03 - Required for maintenance of MI-30 HVAC units |
| 11 | Relocation of Building Sump | 6/10/2003 | No Cost | SK ECP-10 | \$0 | 1d | 0 | 6/24/2003 | Accepted | -- | | 4 | 6/7/2003 | |
| 12 | Rad. Detector Platform/ Relocation | From Sub | - | None | \$733 | | 0 | 6/19/2003 | Accepted | 165153 | 6/27/2003 | 4 | 6/14/2003 | Field Directed , noted incorrectly in the requisition as ECP 11. Time and Material. |
| 13 | Extra for Concrete Mix Design 71 | From Sub | \$7,300 | None | \$5,625 | 1k | 0 | 9/12/2003 | Accepted | 165389 | 7/14/2003 | 5 | 8/29/2003 | See letter from Mike Botts on 6/25/03 |
| 14 | Connecting Enclosure Mods | 7/28/2003 | \$1,500 | SK-14 | \$1,755 | 5b | 0 | 9/2/2003 | Accepted | 166707 | 9/9/2003 | 5 | 9/30/2003 | |
| 15 | Credit for PVC in lieu of Rigid Conduit for ducts on sheet E-6 | From Sub | (\$10,000) | None | -\$10,000 | 5b | 0 | 9/2/2003 | Accepted | | | 6 | 11/7/2003 | |
| 16 | Topsoil for MI Stockpile | 9/12/2003 | \$10,000 | None | \$4,368 | 1 | 0 | | Accepted | 167479 | 10/21/2003 | 8? | 12/31/2003 | Based on per load cost |
| 17 | Painting of Cast In Place Walls in Lieu of Concrete Sealer | 9/12/2003 | \$2,500 | None | \$3,362 | 1 | 3 | | Accepted | 167479 | 10/21/2003 | 6 | | |
| 18 | Time extension for Shielding Steel Placement | From Sub | \$0 | None | \$0 | 5 | 6 | | Accepted | -- | -- | 6 | NA | |
| 19 | Mezzanine | 10/22/2003 | \$48,000 | Several | \$53,127 | 3 | 16 | | Accepted | 168753 | 12/17/2003 | 7 | | |
| 20 | Bonus for completing MS 5b on time | NA | \$20,000 | NA | \$20,000 | 5b | 0 | NA | Accepted | 167810 | 10/28/2003 | 6 | 11/3/2003 | |
| 21 | Electrical modifications for Equip. Lift | 11/3/2003 | \$1,500 | SK-21a,b | \$2,890 | 3 | 1 | | Accepted | 168516 | 12/1/2003 | 7 | | |
| 22 | Add two 600 amp breakers into the 750 kva transformer | From Sub | - | NA | \$8,771 | 3 | 0 | 11/4/2003 | Accepted | 168124 | 11/13/2003 | 7 | 11/25/2003 | |
| 23 | Credit for change from 750 mcm to 10 cable | From Sub | (\$850) | NA | -\$850 | 3 | | | Accepted | -- | -- | 7 | 11/19/2003 | |
| 24 | Miscellaneous Field Directed Changes | From Sub | \$1,300 | NA | \$1,248 | 3 | 0 | 11/26/2003 | Accepted | 168657 | 12/8/2003 | 7 | 11/11/2003 | Field Directed - Move SF6 footing, Waterproof Conn Enc. |
| 25 | Pelletron Support | 2/4/2004 | \$41,000 | ECP-25 | \$40,651 | 4 | 15 | 2/17/2004 | Accepted | 170123 | 2/24/2004 | 8 | | |
| 26 | Control Room Ceiling Revision | 2/5/2004 | \$2,000 | ECP-26 | \$2,130 | 6 | 1 | 3/5/2004 | Accepted | 170512 | 3/9/2004 | 8 | | |
| 27 | Electrical revisions for Chiller and Condenser | 3/1/2004 | \$12,000 | Revised E sheets, 4, 6, 7,10,11 | \$7,944 | 6 | 5 | 3/15/2004 | Pending | | | 9? | | |
| 28 | Truck Dock Safety Modifications | 3/1/2004 | \$3,000 | Revised A-2 | \$0 | 6 | | | Pending | | | 9? | | |
| 29 | Miscellaneous Field Directed Changes #2 | From Sub | \$1,060 | NA | \$1,060 | 4 | 0 | 2/23/2004 | Accepted | 170448 | 3/5/2004 | 8 | | Door Lite, shield block move, window frame steel |
| | TOTAL | | | | \$243,087 | | | | | | | | | |

Note: Changes above colored in blue indicate added scope and bonus related extras.
All other changes are either unforeseen conditions or plan errors.

| | |
|-------------------------------|--------------------|
| Original Subcontract Amount = | \$2,527,150 |
| Total Added Scope/Bonus = | \$216,100 |
| Total Unforeseen/ Errors = | \$26,987 |
| Subcontract amount to date = | \$2,770,237 |

9% change from original subcontract amount includes bonus
1% change from original subcontract amount