

Fermilab

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Beams Division/Electron Cooling

December 17, 2003

MEMO TO: Distribution

FROM: Jerry Leibfritz
Project Manager

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

Please find attached the November 2003 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: November 2003

I. PROGRESS**1.1 General Construction**

- a. Activity – Primary work activities included structural steel erection, miscellaneous cast in place concrete and site utility construction.
- b. Cumulative hours worked – approximately 13,649 hours through 11/29/03.
- c. Subcontractor's schedule evaluation – As of 11/30/03 the Subcontractor is on schedule. The Subcontractor's sixth payment update occurred on November 21, 2003. See attached reports and section II of this report for an earned value analysis. The Whittakers Subcontract is approximately 66% complete as of 11/30/03.
- d. Engineering Change Proposals/ Requests – See latest ECP list on Website. Supplemental Agreement numbers 1 through 6 have been incorporated into the Subcontract. At this time the total subcontract amount is \$2,648,898 and the completion date is 04/04/04.
- e. Upcoming issues – Roofing, siding, mechanical and electrical rough in will be the focus of the month of December
- 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	4 Apr 04
Project Complete	Project closed	30 Nov 04	10 Dec 03	15 May 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	\$2,797,203	
1.1.2	Construction Contingency	22%		\$511,000	\$230,646	8%
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	\$58,702	12%
1.2.3	Project Support G & A			\$166,000	\$135,091	
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 6 and all T&M actual costs to date.

TPC Earned Value Analysis as of November 30, 2003 (based on earned value reports for November 2003):

1. The Schedule Variance is \$30,684.
2. The Cost Variance is \$20,065.



ATTACHMENTS

See MI-31 website

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

for the following:

TSR Report for 11-03

Earned Value Reports - Cost Reports and Graphs up to 11-03

Engineering Change Proposal List

More Photographs

Task Summary Report by Expenditure Type ("TSR")

Period End: NOV03-04

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	190.91	557.72	557.72	2,748.78	2,748.78	0.00	0.00
OPTO ALLOC-MONTHLY	33.21	97.02	97.02	802.07	802.07	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	510.92	1,492.63	1,492.63	10,391.87	10,391.87	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	56.20	164.18	164.18	1,344.43	1,344.43	0.00	0.00
VAC EARNED ALLOC-WEEKLY	0.00	0.00	0.00	94.91	94.91	0.00	0.00
Personnel Costs	791.24	2,387.61	2,387.61	15,657.28	15,657.28	0.00	0.00

Materials & Services

CONSTRUCTION ENGINEERING	26,280.00	42,121.00	42,121.00	293,366.00	293,366.00	0.00	0.00
EXEMPT - CIVIL CONSTR.	0.00	0.00	13,362.00	1,195,848.00	1,182,486.00	13,270.00	13,362.00
EXEMPT - CIVIL CONSTRUCTION	460,499.00	609,873.00	0.00	1,453,050.00	609,873.00	8,771.00	843,177.00
FEES	0.00	0.00	0.00	500.00	500.00	0.00	0.00
FREIGHT	5.84	5.84	5.84	11.41	11.41	0.00	0.00
MACHINE SHOP	0.00	110.00	110.00	110.00	110.00	0.00	0.00
MATERIAL PURCHASES	15.00	832.00	832.00	21,293.71	21,293.71	0.00	0.00
PHOTO/GRAPHIC SERVICES	0.00	34.00	34.00	112.00	112.00	0.00	0.00
STORES ISSUES	0.00	0.00	0.00	640.42	640.42	0.00	0.00
SUB-CONTRACT SERVICES	1,724.50	1,829.30	158.80	108,809.03	105,549.49	0.00	3,259.54
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	2,185.12	83,468.96	64,829.68	0.00	18,639.28
Materials & Services	488,524.34	674,229.26	58,808.76	3,180,904.62	2,302,466.80	22,041.00	878,437.82
<u>Indirect Cost</u>							
CSS ALLOCATION	5,008.20	8,254.46	8,254.46	56,394.09	56,394.09	0.00	0.00
G&A ALLOCATION	0.00	3.40	3.40	62,279.06	62,279.06	0.00	0.00
G&A ALLOCATION-CSS PORTION	3,207.94	5,287.33	5,287.33	30,844.02	30,844.02	0.00	0.00
G&A ALLOCATION-M&S PORTION	184.14	2,330.63	2,330.63	18,533.67	18,533.67	0.00	0.00
MSA ALLOCATION	96.01	1,215.03	1,215.03	40,957.29	40,957.29	0.00	0.00
Indirect Cost	8,496.29	17,090.85	17,090.85	209,008.13	209,008.13	0.00	0.00
1 - MI31 Ecooling Bldg SUBTOTAL:	497,811.87	693,707.72	78,287.22	3,405,570.03	2,527,132.21	22,041.00	878,437.82
DIST. TO ACCOUNTS REC'BL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNDISTRIBUTED BALANCE:	497,811.87	693,707.72	78,287.22	3,405,570.03	2,527,132.21	22,041.00	878,437.82
<u>REPORT TOTALS</u>							
TOTAL PROJECT/TASK:	497,811.87	693,707.72	78,287.22	3,405,570.03	2,527,132.21	22,041.00	878,437.82
TOTAL DIST. ACCTS REC'BL:	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL UNDIST BALANCE:	497,811.87	693,707.72	78,287.22	3,405,570.03	2,527,132.21	22,041.00	878,437.82

BCWS
MI-31 Anticipated Spending Profile
WBS 1.1 and 1.2

FY	Mo	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.	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 PM Salary TX	T3 PM G&A	Monthly Totals	Cumulative Totals	Whittaker Direct**	Whittaker G&A	Whittaker Incentive	Whittaker G&A	T&M Direct	T&M G&A	Procurement Direct	Procurement G&A	T&M Direct	T&M G&A	T&M Direct	T&M G&A	Procurement Direct	Procurement G&A	T&M Direct	T&M G&A	T&M Direct	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	\$3,000	\$3,000	\$300	\$51					\$18,551	\$144,259																				\$0	\$0					
	Nov-02		\$20,500	\$3,485	\$10,000	\$3,000						\$42,185	\$186,444																				\$0	\$0					
	Dec-02										\$2,000	\$600	\$7,800	\$194,244																			\$0	\$0					
	Jan-03										\$2,000	\$600	\$7,800	\$202,044							\$20,897	\$3,845										\$24,742	\$24,742						
	Feb-03										\$2,000	\$600	\$7,800	\$209,844																			\$24,103	\$48,845					
	Mar-03						\$200	\$34	\$12,000	\$3,720	\$11,000	\$3,410	\$1,000	\$300	\$31,664	\$241,508	\$0																\$0	\$48,845					
	Apr-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$274,048	\$92,204																\$92,204	\$141,049					
	May-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$306,588	\$330,958																\$330,958	\$472,007					
	Jun-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$339,128	\$292,404	\$80,240																\$372,644	\$844,651				
	Jul-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$371,668	\$136,381																	\$136,381	\$981,032				
	Aug-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$404,208	\$177,390																		\$177,390	\$1,158,422			
	Sep-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$436,748	\$162,580	\$20,000	\$0																\$228,413	\$1,386,835			
F Y O 4	Oct-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$469,288	\$288,714																		\$327,592	\$1,714,427			
	Nov-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$501,828	\$259,704																		\$271,304	\$1,985,731			
	Dec-03								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$534,368	\$273,515																			\$273,515	\$2,259,246		
	Jan-04								\$12,000	\$3,720	\$12,000	\$3,720	\$900	\$200	\$32,540	\$566,908	\$179,385																				\$179,385	\$2,438,631	
	Feb-04								\$8,000	\$2,480	\$8,000	\$2,480	\$900	\$200	\$22,060	\$588,968	\$110,960																				\$128,140	\$2,566,771	
	Mar-04								\$4,000	\$1,240	\$4,000	\$1,240	\$450	\$200	\$11,130	\$600,098	\$268,903																					\$268,903	\$2,835,674
	Apr-04								\$1,000	\$310	\$12,000	\$3,720	\$450	\$200	\$17,680	\$606,648	\$55,800																					\$67,400	\$2,634,171
TOTALS			\$90,087	\$15,315	\$51,800	\$15,540	\$800	\$136	\$151,000	\$46,750	\$170,000	\$52,550	\$18,800	\$5,000	\$2,628,898	\$80,240	\$20,000	\$0	\$20,897	\$3,845	\$20,357	\$3,746	\$14,810	\$2,370	\$10,000	\$1,600	\$10,000	\$1,600	\$39,087	\$6,746	\$33,154	\$5,724	\$3,520,851						

Includes SA 1 through 6

WBS 1.2 Escalation and Contingency

Total for WBS 1.2 = \$676,280
 Total Direct and G&A (above) = \$617,778 *
 Project Support Escalation = \$0
 Project Support Contingency = \$58,502 12%

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

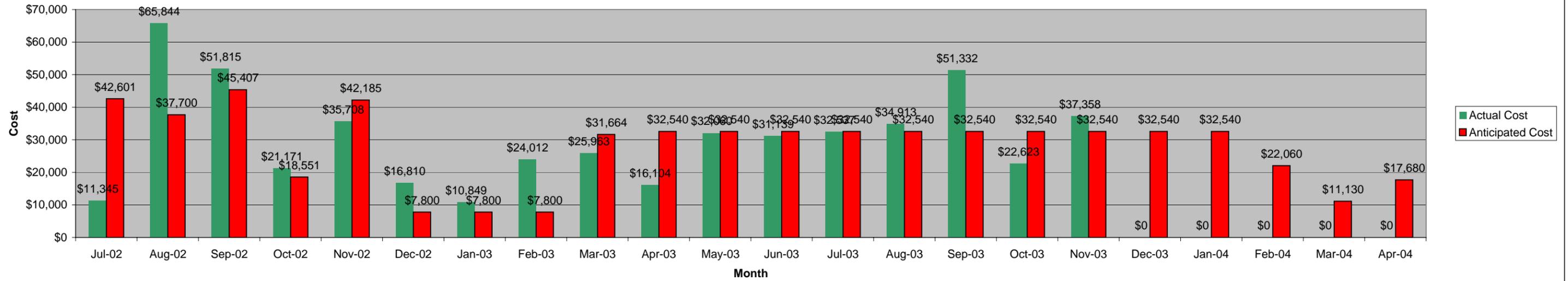
WBS 1.1 Escalation and Contingency

Total for WBS 1.10 = \$3,133,720
 Total Direct and G&A (above) = \$2,903,074 *
 Project Support Escalation = \$0
 Construction Contingency = \$230,646 8%

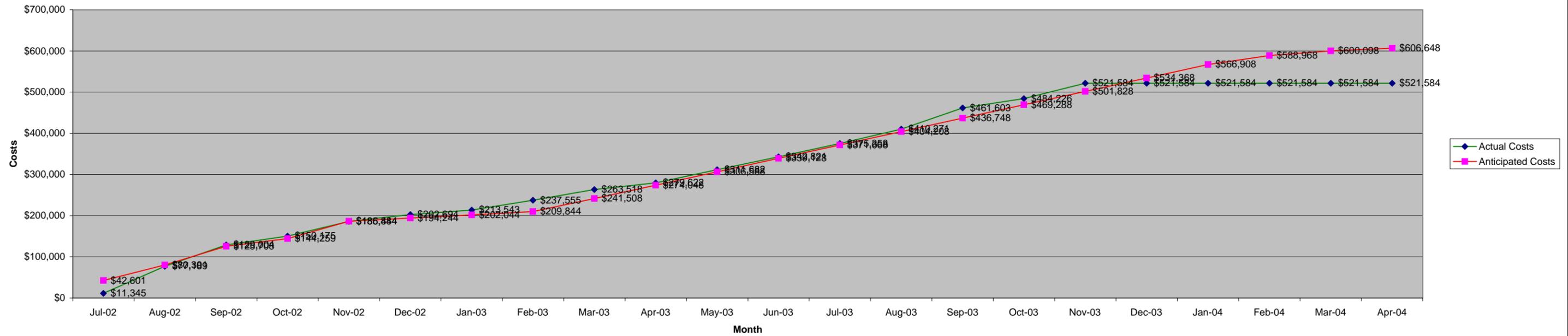
* Total Indirect = \$135,291
 Total Direct = \$482,487

* Total Indirect = \$105,871
 Total Direct = \$2,797,203

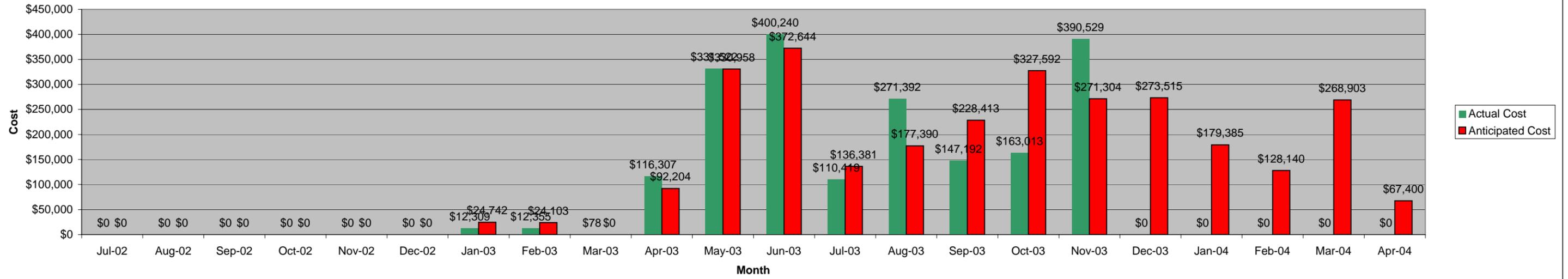
WBS 1.2 Monthly



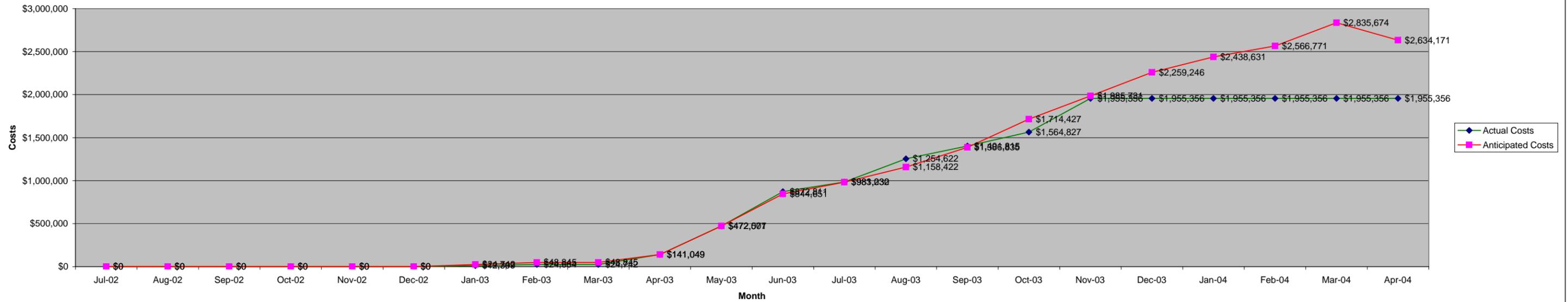
WBS 1.2 Cumulative



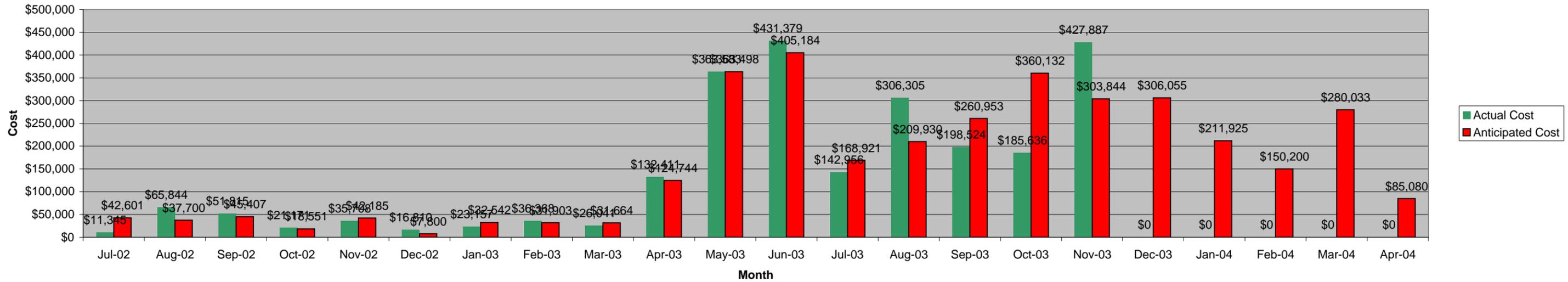
WBS 1.1 Monthly



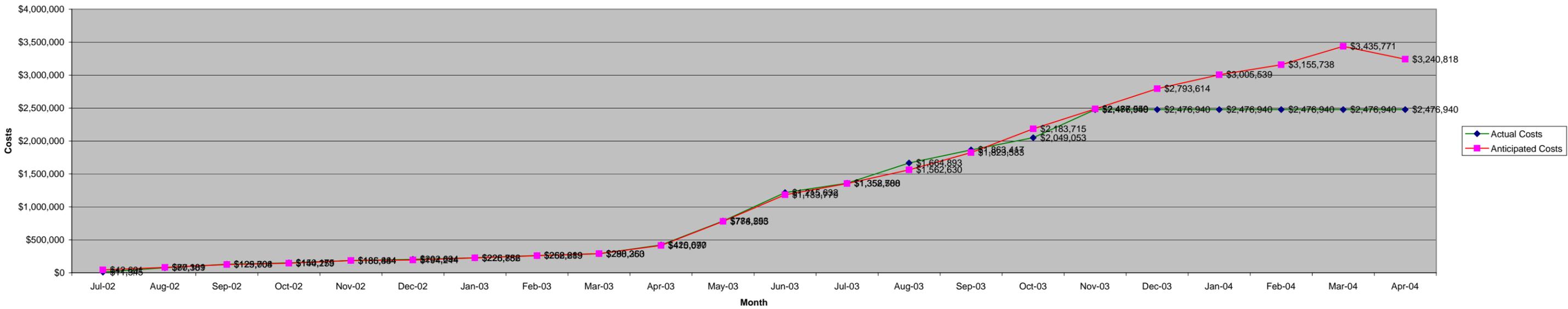
WBS 1.1 Cumulative



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	\$10,380	1	0		Approved	167479	10/21/2003			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	2	16		In Process					
20	Bonus for completing MS 5b on time	NA	\$20,000	NA	\$20,000	5b	0	NA	Accepted	167810	10/28/2003	6		
21	Electrical modifications for Equip. Lift	11/3/2003	\$1,500	SK-21a,b	\$0		0		Approved	168516	12/1/2003			
22	Add two 600 amp breakers into the 750 kva transformer	From Sub	-	NA	\$8,771	2	0	11/4/2003	Approved	168124	11/13/2003		11/25/2003	
23	Credit for change from 750 mcm to 10 cable	From Sub	(\$850)	NA	-\$850				Approved	--	--		11/19/2003	
24	Miscellaneous Field Directed Changes	From Sub	\$1,300	NA	\$1,248	2	0	11/26/2003	Pending				11/11/2003	Field Directed - Move SF6 footing, Waterproof Conn Enc.
TOTAL					\$194,424									

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 = \$165,375
 Total Unforeseen/ Errors = \$29,049
 Subcontract amount to date = **\$2,721,574**

7% change from original subcontract amount includes bonus
 1% change from original subcontract amount