



## 12 GeV Upgrade VARIANCE ANALYSIS REPORT

**WBS: 1.3.2.2 Construction – Power Systems Magnet Power**  
**Control Account Manager: Bill Merz**  
**For Period Ending: Aug 13**

12 GeV 1.3.2.2	SCHEDULE FLAG				COST FLAG			
	(A)	(B)	(B-A)	(B/A)	(C)	(D)	(C-D)	(C/D)
	Planned Value	Earned Value	Schedule Variance	Schedule Perform Index	Earned Value	Actual Cost	Cost Variance	Cost Perform Index
	BCWS	BCWP	SV	SPI	BCWP	ACWP	CV	CPI
Month of Aug-13	92	33	-59	0.36	33	207	-174	0.16
Cumulative	4699	3838	-861	0.82	3838	5144	-1306	0.75

**Yellow Flag: Index <.9 / >1.1 OR Variance > \$25K**  
**Red Flag: Index <.8 / >1.2 AND Variance > \$50K**

### 1. Cause (Address Variances Individually)

**CV:** There was continued negative CV growth in August, mostly in WBS1.3.2.2.4. The under reported EV in 1.3.2.2.1 last month was inadvertently left unclaimed this month again. The resulting errors will be corrected next month (~60k\$ of unclaimed EV). The tunnel cable connection effort continues to be more labor intensive than originally estimated in the baseline. Many cables needed to be re-routed, extended or re-terminated to connect to the magnets due to changes in the physical layout of the devices. Additional cable purchases were required as well. Approximately 48% of the cumulative cost variance is in the installation WBS. The historical installation overrun is due to an increase in cable materials prices since the baseline was done and additional costs for the LCW header materials and installation labor. More recently in WBS 1.3.2.2.2, the design and fabrication for the 75 amp regulator controls (for the YA PS upgrade) have required more effort than was anticipated. Growth of the variance continued in this WBS. A cost variance has occurred in the trim WBS due to extra labor being burned on shepherding the trim procurement vendor through first article testing and the costs associated with the assembly of a power supply test stand. A new problem in trim power supply production has also caused delivery delays and subsequent labor expenses for additional testing and managing the contract in the last several weeks. These problems are not fully resolved yet.

### 2. Proposed Solutions (Corrective Actions)

**CV:** The CV will not be recovered. The cumulative cost variance is anticipated to continue to grow due to the increased installation labor for magnet hook-up and the extra labor required completing the YA regulator controls. Additional work that was underestimated or overlooked in planning may occur. It is likely the CV will continue to grow until tunnel installation is complete. There may be some recovery as above ground installation appears to be doing better than expected.

Some cost recovery could also occur during power supply installation and testing if all goes better than planned.

#### Estimated Resolution By (Date):

**CV:** Will not be recovered

### 3. Impact on Project Cost/ Schedules

		Cost Variance Projection					
	CVcum (K)	Sep	Oct	Nov	Dec	Jan	Feb
Recoverable							
Unrecoverable	-1306k \$	-1240k \$	-1240k \$	-1240k \$			
Error							

**SV:** Variance due to the trim power supplies will persist until October 2013 based on the vendor's delivery projections. Sufficient float exists to not adversely affect higher level schedule milestones at this time. Box PS contribution will continue into October also.

**CV:** The cost variance will persist.

**4. Comments:**

**Control Account Manager:**  
William Merz

**Project Manager:**  
Leigh Harwood  
D. Miner for C. Rode

Aug	Planned Value	Earned Value	Schedule Variance	Schedule Perform Index	Earned Value	Actual Cost	Cost Variance	Cost Perform Index
	BCWS	BCWP	SV	SPI		BCWP	ACWP	CV
<b>12 GeV 1.3.2.2.1</b>								
Month of Aug-13	83	14	-69	0.17	14	24	-11	0.56
Cumulative	1678	1512	-167	0.90	1512	1636	-124	0.92
<b>12 GeV 1.3.2.2.2</b>								
Month of Aug-13	0	0	0	No PV	0	32	-31	0.01
Cumulative	350	290	-60	0.83	290	542	-251	0.54
<b>12 GeV 1.3.2.2.3</b>								
Month of Aug-13	4	16	12	3.79	16	71	-55	0.22
Cumulative	1653	1094	-559	0.66	1094	1430	-335	0.77
<b>12 GeV 1.3.2.2.4</b>								
Month of Aug-13	5	3	-2	0.58	3	80	-77	0.04
Cumulative	1018	942	-76	0.93	942	1538	-596	0.61