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LANL Executive Summary

As part of a required Conduct of Operations review, on June 10, several key PF-4 Operation Procedures were paused halting most SNM operations in PF-4. On June 27, Laboratory Director Charlie McMillan issued a temporary pause of all programmatic activities in PF-4. Resumption criteria, prioritization of resumption activities, procedure walk downs, procedure revisions, and approval are in process and are expected to take several months to complete. In January, ADPSM committed to producing a detailed baseline resumption schedule by mid-February.

In January of 2014 the Plutonium Sustainment program at LANL completed or addressed the following high-level activities:

(b) (7)(F)

- 2) Cold testing of the new foundry indicates excellent performance of the induction stirring system. Parameters are being adjusted to optimize surrogate alloy quality.

Two of the three NNSA Level 2 Milestones (MRT 4962 and 4963) associated with Plutonium Sustainment are on track for success in FY14. MRT 4961 is "yellow" resulting from the operational pause.

The earned value metrics overall for LANL are within acceptable thresholds, so no high-level recovery plan is required.

Each of the four major LANL WBS elements is discussed in detail below.

LANL Response to December NNSA Comments

none.

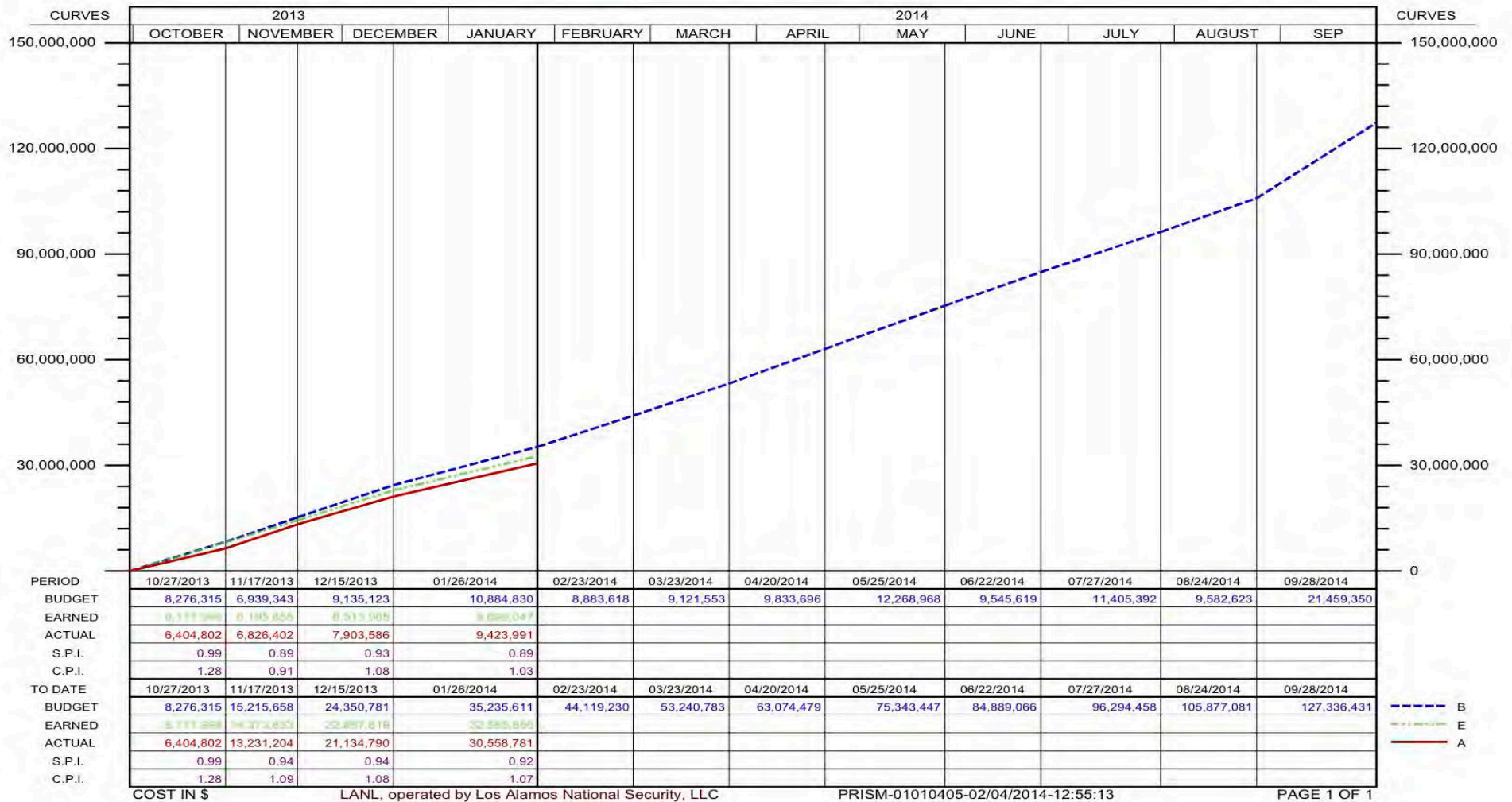
Table 1: January Baseline Change Request

WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
Pit Development	PSM-14-028	Inspection Calibration Support/IPM Support	1/21/14	1/30/14	Cost/Schedule	\$100k	3

Earned Value Metrics

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01.01.04.05 Plutonium Sustainment



[NOTE: September 2014 includes 6% FY15 carryover holdback of \$7.414M in addition to the four major WBS elements.]

1.0 LANL - Pit Development

MRT 4961		YELLOW	Perform Activities to Sustain Base Pit Material		
			(b) (7)(F)		
1.	(b) (7)(F)				T.
2.	(b) (5), (b) (7)(F)				
Activity	Baseline Date	Status/Comments	Completion Date	RGYB	
(b) (7)(F)					
MRT 4962		GREEN	Continue Key Equipment Upgrade and Replacement Activities		
1. Complete ER Line Upgrades construction punchlist and execute successful cold test.					
2. Complete Pu Foundry GB 1 mechanical and electrical construction.					
3. Foundry GB 2 upgrade approved for installation.					
4. Perform factory acceptance test of CMM #1 and #2					
5. Complete CMM GB 30% design review and GB installation 30% design review.					
6. Complete CDS installation 60% design review.					
7. Finish installation (not including FCRs) on PML – Phase 2.					
ER Line Dry Run/Cold Test Complete	April 26, 2014	Material Transfer System Dry Run Completed			GREEN
ER Line Punchlist Complete	August 15, 2014				GREEN
Foundry GB1 Cooling Power Supply Received	June 2, 2014				GREEN
Foundry GB1 Cooling Furnace Housing Installation Complete	July 3, 2014	GB1 furnace housing cold tested and moved into PF-4			GREEN
Foundry GB2 Approved for Installation	September 30, 2014				GREEN
Complete Factory Acceptance Test of CMM #1 and #2	June 23, 2014				GREEN
Complete location study for New GB & CMM	February 3, 2014	On schedule			GREEN
Complete 30% CMM GB Preliminary Installation Design Review	April 28, 2014				GREEN
Complete 30% CMM GB Installation Design Review	June 30, 2014				GREEN
Start CDS Engineering Development	October 1, 2013		October 1, 2013		BLUE
CDS Engineering Contract Awarded	February 16, 2014	Completed one month ahead of schedule	January 9, 2014		BLUE
CDS 30% Installation Design Complete	June 1, 2014				GREEN
CDS 60% D&D Design Complete	August 11, 2014				GREEN
PML DCP Re-Activation Complete	January 10, 2014		December 12, 2013		BLUE
PML Construction Planning Complete	May 22, 2014				GREEN
PML Cold Testing Complete	July 3, 2013				GREEN

1.1 Technical Progress

- (b) (7)(F)
- The majority of pit manufacturing development is focused on resumption related activities. Accordingly, most of the budget and scope through the current period is captured in a "level of effort" activity. A prioritized resumption schedule will be published in February.

1.2 Equipment

- The plan to meet the grading criterion L2 milestone MRT 4962 includes the following by September 30, 2014:
 1. Complete ER Line Upgrades construction punch list and execute successful cold test.
 2. Complete Pu Foundry GB 1 mechanical and electrical construction complete.
 3. Foundry GB 2 upgrade approved for installation.
 4. Perform factory acceptance test of CMM
 5. Complete CMM GB 30% design review and GB installation 30% design review.
 6. Complete CDS installation 60% design review.
 7. Finish installation (not including FCRs) on PML – Phase 2.
- Electro-Refining Line Upgrade (b) (3)
 - o Final record drawings are nearing completion.
 - o Technical review of ER (furnace) Control System (ERCS) software Release 2.5 was started.
 - o Installation of Ethernet and fire skirting on gloveboxes has been completed.
 - o Helium leak testing of trunkline glovebox started.
 - o Criticality safety review of NPCCWS connection has been completed.
- Foundry Upgrade (b) (3)
 - o Completed sequence of Bismuth-Magnesium castings and sample analyses to optimize the frequencies for the new power supply.
 - o Proceeded with fabrication of quadrupole water-cooled feed through.
 - o Completed vacuum/cooling 90% for GB-2.
- Coordinate Measuring Machine (b) (3)
 - o Continued engineering evaluation of CMM location environments.
 - o Early development of 3-D ergonomic model of the proposed glovebox started.
 - o Revision of project scope of work and costs to procure the Infinity PMM with enhanced sensitivity. Definition of machine upgrades to facilitate operation, calibration, and maintenance continued.
- Chlorine Distribution & Detection System (b) (3)
 - o Contract for A/E design services awarded.
 - o Start of design process initiated via kick-off meeting.
 - o Walk down of project space completed.
- Precision Machining Line (b) (3)
 - o A/E design services contract awarded.
 - o Design Change Notices (DCNs) generated for drop box skirting, O₂ sensor connection to fire alarm panel, and airlock door control box.
 - o Fabrication of the airlock door control box started.
 - o Construction planning started.
 - o The (b) (7)(F) signal wiring IWD was completed and submitted for approval.

1.3 Issues

- None

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1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- PSM-14-028: This BCR shifts budget and scope AET-5 to PF-TDI with a \$100k overall reduction in scope. The \$100k is used to provide partial funding for IPM management. An addition \$100k will be made available for this purpose in a future BCR next month.

1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(b) (7)(F)	(b) (7)(F)	
Completion of DCP	Equipment projects all require new or revised CSEs and procedures. Without CSEs these DCPs cannot be closed.	Identify all installation project CSEs & related DOPs, and prioritize by schedule/complexity. Complete supporting activities and request project resources available when needed. If resources are unavailable due to conflict with PF-4 Resumption, then the DCP closure will be removed for the L2 milestone requirement.	
Equipment Upgrades	The resumption process and related demands on criticality engineering and other project support create significant uncertainties for the FY14 equipment execution. ☐ ER Line activities that may be impacted include cold testing, Zone 1 tie-in, and NPCCW tie-in. ☐ Foundry Upgrade activities include criticality design/construction support and waste management processes.	Equipment project resource requirements will be reviewed and prioritized by Program. The projects will alternate work methods as contingencies. If necessary the milestone may be renegotiated.	

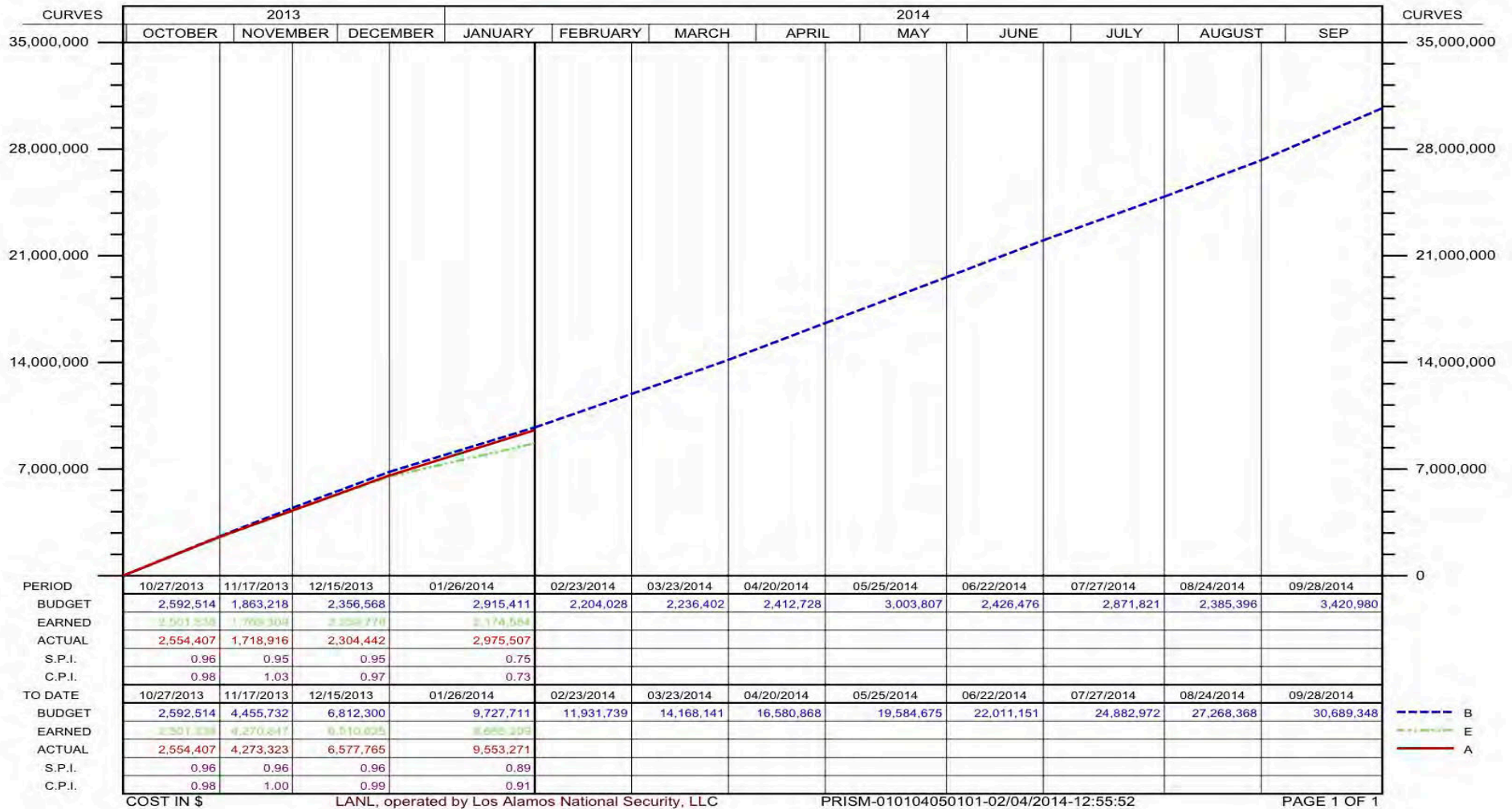
(b) (5)

(b) (7)(F)

1.7 Earned Value Metrics

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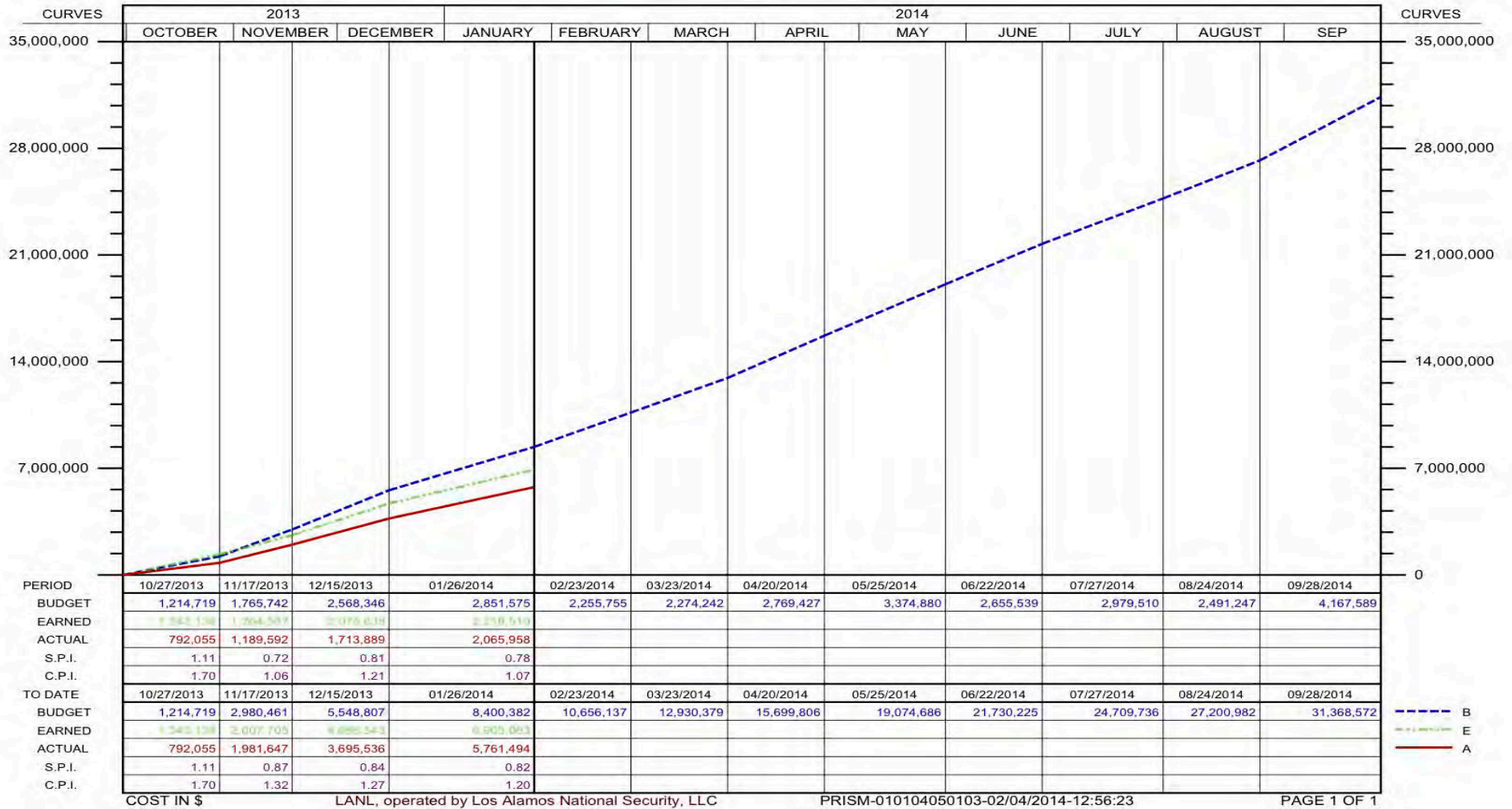
Pit Manufacturing & Design Development



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Pit Manufacturing Equipment



2.0 LANL - Power Supply

MRT 4963		GREEN	Progress Power Supply Development		
1. Complete (b) (7)(F) of inert heat sources.					
2. Start (b) (7)(F) of assembled Power Supplies.					
L3 Milestone (b) (3)	Baseline Date	Status/Comments	Completion Date	RGYB	
	January 13, 2014		November 15, 2013	BLUE	
	February 17, 2014		November 15, 2013	BLUE	
	March 10, 2014	6 of 10 completed.		GREEN	
	June 20, 2014			GREEN	
	August 29, 2014			GREEN	
	May 25, 2014		October 15, 2013	BLUE	

2.1 Technical Progress

- ☐ Active participation in setting the baseline schedule for NIMS.
 - o Attended detailed schedule meetings in both KC and Sandia, with PRT's participations, to ensure product lines had consistent flow for the P6 database.
 - o Milestones for MRLs, TRLs, AERs, CERs, QERs and FPU were given consistent timelines and integrated across the various agencies.

(b) (7)(F)

- ☐ (b) (7)(F) :
 - o LANL has received the remaining (b) (7)(F) from KC and SNL. (b) (7)(F) continues with these recently acquired parts.

2.2 Equipment

- ☐ Extensive testing of PF-5 equipment continues as preparations for completing Process Qualification Plans (PQRs) and Reports (PQRs) has started. Experiments for reliability and consistency have been designed for DA approval.
- ☐ Testing of environmental fixtures has revealed cable limitations requiring modifications. A redesign will be discussed in the February PRT in KC.

2.3 Issues

- ☐ The continued Pause in PF-4 operations coupled with procedural activities for resumptions, is affecting power supply production in the following areas:
 - o FY14 Demo Fuel Run (Aqueous Processing and Fuel Fabrication)
 - o Harvesting support activities: FSI opening and location/identification of fuel to increase current amounts

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- FY14 funding cancellation for AMET Controller replacement in PF-4 and UT Development for installation at SM-39 will delay (b) (7)(F) activities.

2.4 Variance Analysis and Recovery Plan

- None

2.5 BCRs

- None

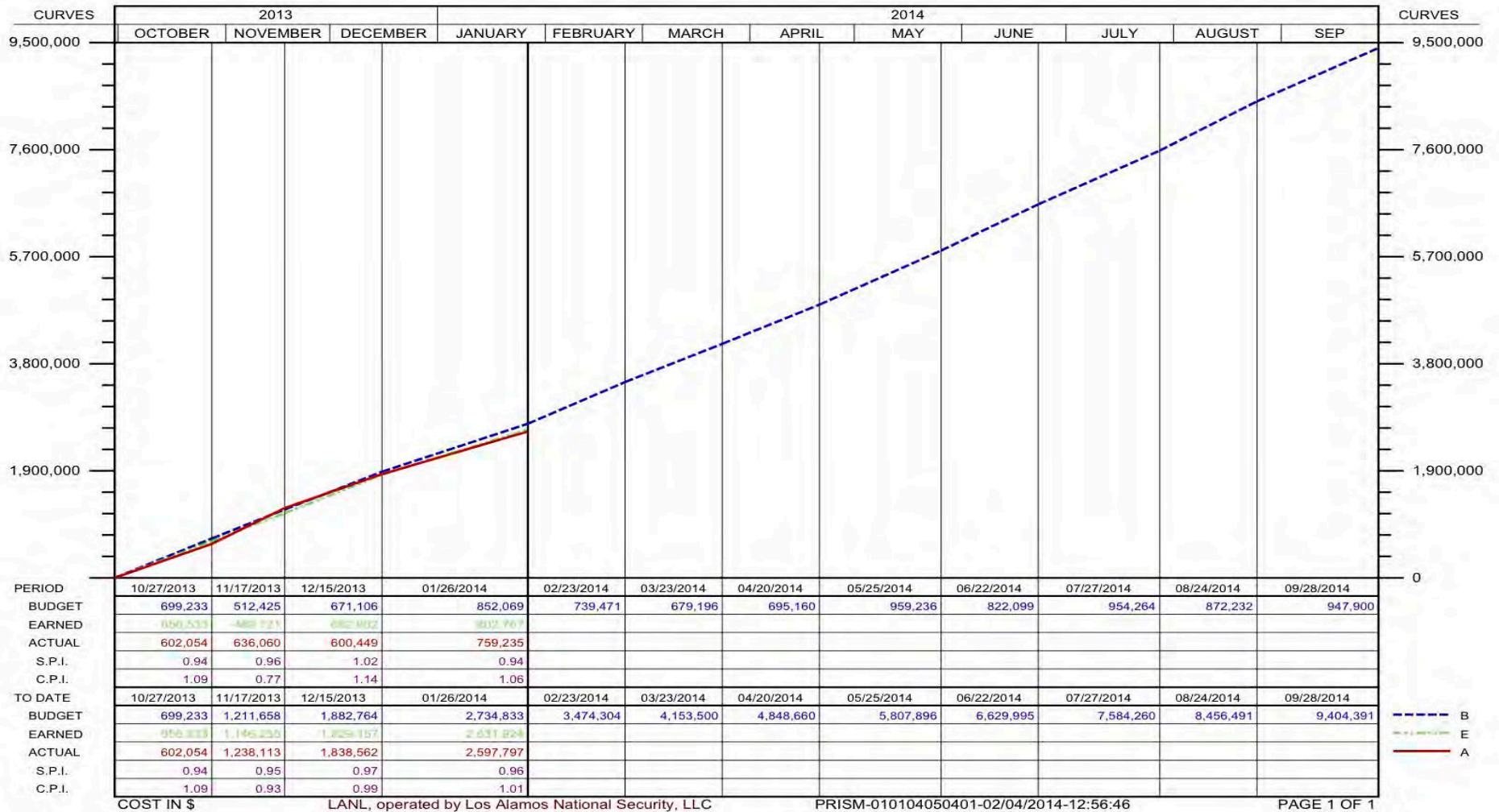
2.6 Risk Table

Work	Description	Handling Strategy	Status
Workforce development and recruiting	Dedicated staffing and depth of trained operators are both at risk to support the development, PPI, and Qual series for Power Supply manufacturing development. The plan to start hiring in FY13 for dedicated staffing did not occur. Staffing is shared with other programs and may not always be available as scheduled. Note that the increase in staff also was planned to maintain lower dose rates in the staff as part of LANL ALARA goals.	1. Communicate and integrate frequently with Power Supply surveillance, NE-75, and other programs to make the best use of available staff. 2. Request LANL and LAFO management to allow for increase in dose to staff assigned to this work. 3. Delay non-critical path activities until they become critical path for FPU.	LANL performed a cross-program review in October of the baselined P6 schedules with NE-75.
Design Maturation beyond PRT Schedule	Delays in the delivery of the various required design phases (AERs, BDR, etc) will lead to a delay in LANL's delivering the FPU.	1. Communicate and integrate frequently with the PRT on LANL design needs. 2. Provide monthly input into the PRT's Integrated Schedule to manage formally any delays.	LANL continues to provide input at the monthly PRT meeting. Topics of the October meeting included review of the most recent fuel specification.
(b) (7)(F)	(b) (7)(F)	(b) (7)(F)	
AMET Controllers Replacement	(b) (7)(F)	1. Delay until FY15 unless funding becomes available in FY14 (will not effect FPU schedule).	LANL to procure hardware, let contract for reps to be on-site and start disassembly/re-assembly and testing activities. Funding cancelled for FY14.
UT Cold Development	Develop and install a cold UT inspection station at SM39 that will be used for (b) (7)(F)	1. Working with other LANL groups to determine if equipment and resources are available to inspect (b) (7)(F) at another LANL location.	Hardware bought and on-hand. Equipment delivered at SM39 but installation/integration on-hold due to cancelled of FY14 funds.

2.7 Earned Value Metrics

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Power Supply Production



3.0 Program Management and Support

3.1 Program Management

- Supported power supply NIMS scheduling effort.
- Held Pit Manufacturing/Pu Infrastructure Options Workshop with attendance by a broad cross-section on the laboratory.
- Supported the resumption scheduling effort with priority assignments and procedure list review.

3.2 Support

- Warehousing and Procurement
 - o The procurement team successfully processed over 165 procurement requests for TA55 in January. The team was able to work through the period without the development of a substantial (> 1 week) and permanent backlog.
 - o The TA55 Procurement and Warehousing team has started conducting Voice of the Customer meetings.
 - o Developing an automated Controlled Storage Request Form.
 - o TA-55 Main Warehouse Transactions
 - 600 Warehouse distributions at a cost of \$41,163.
 - 3,758 Warehouse receipts at a cost of \$97,693.
 - \$56,530 change in warehouse valuation.
- Calibration
 - o The Standards and Calibration Laboratory (S&CL) supported the development of a causal analysis to determine underlying causes behind the low rate of submission of measurement and test equipment (M&TE) for recalibration. Analysis continues with corrective action development to follow.
 - o Completed set-up and calibration of the new dial indicator calibrator supporting processing of program equipment. This unit is now in service.
 - o The S&CL continues to work with dimensional inspection to develop processes for re-certifying various M&TE in glove boxes that most benefits the Laboratory in regards to minimizing waste and maximizing the useful life of the M&TE.
 - o Continued working with detonator project leads to ensure the availability of calibrated M&TE to meet production needs. This collaboration has been successful in meeting production requirements.
 - o A total of 15 M&TE items were expected for January and 44 items were actually received. Calibrated 17 M&TE items in January. Successfully and consistently achieved target cycle time rates for equipment turn around so as to avoid mission and deliverable impacts.

3.3 Issues

- None

3.4 Variance Analysis and Recovery Plan

- None

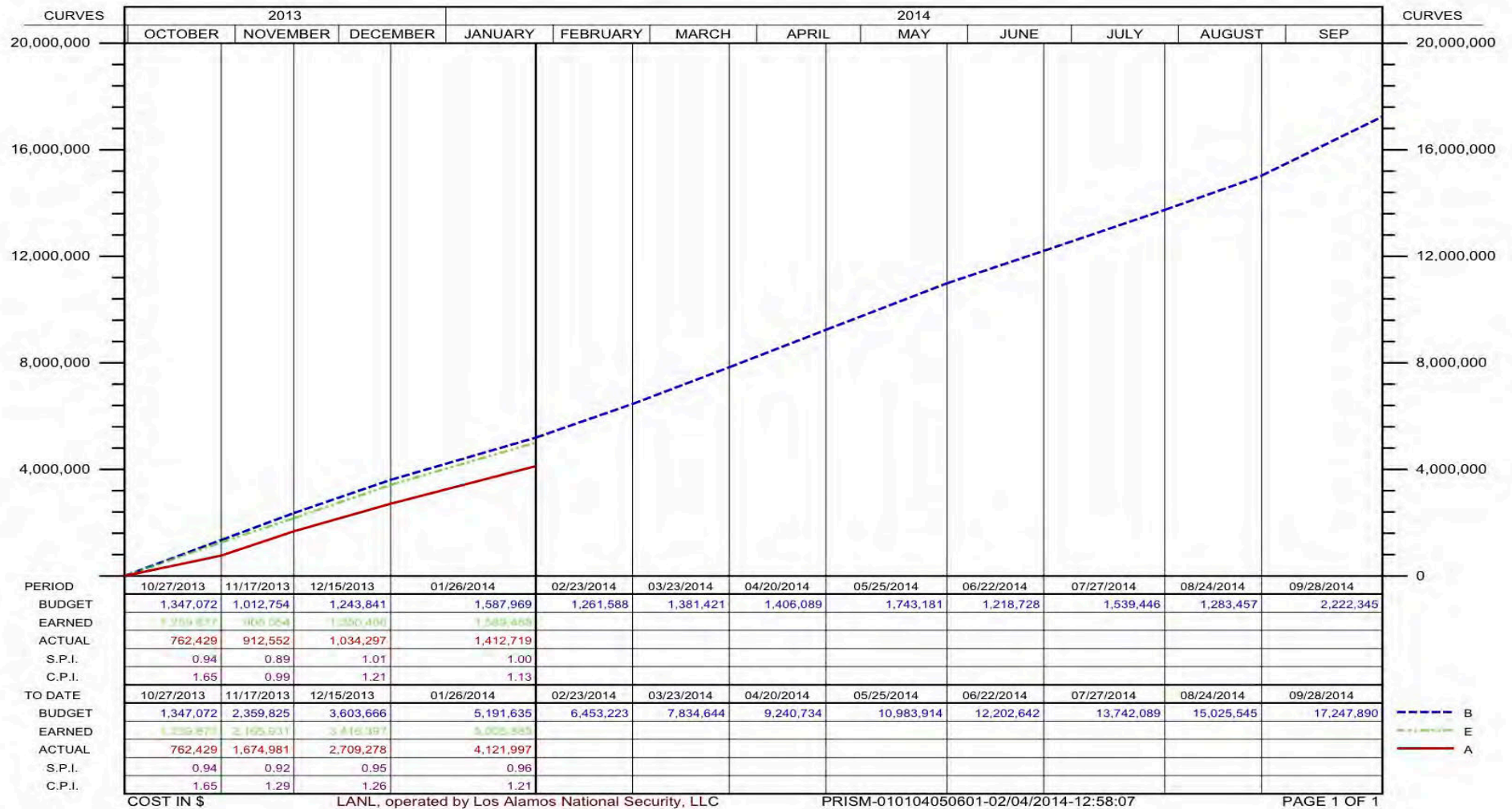
3.5 BCRs

- None

3.6 Earned Value Metrics

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Program Office



4.0 Facilities, Waste and Institutional Support

4.1 Technical Progress

- 135 of 135 required preventive maintenance tasks were completed in January. 10 scheduled PMs were deferred.

4.2 Equipment

- None.

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

- None

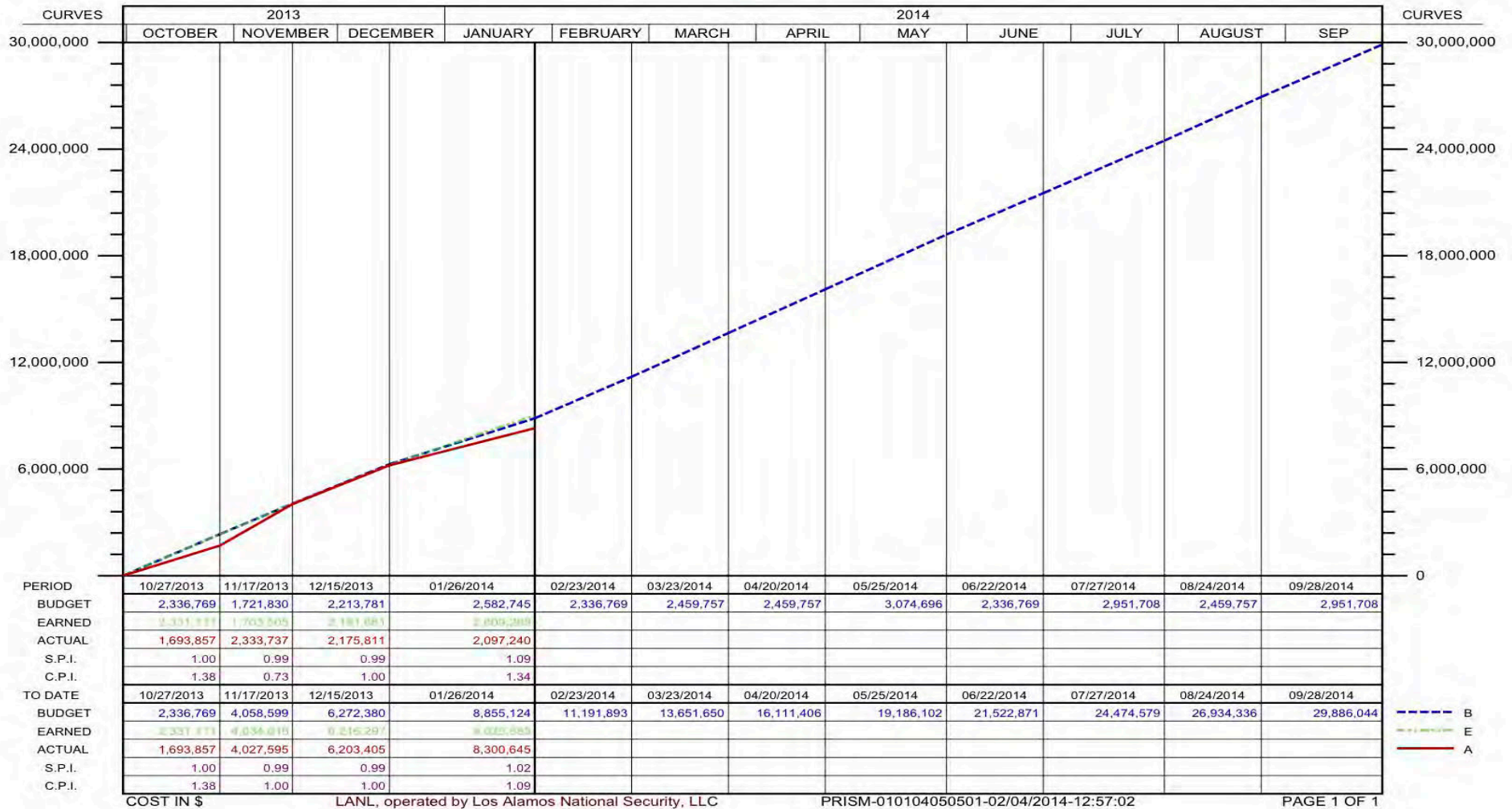
4.5 BCRs

- None

4.6 Earned Value Metrics

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RTBF Recovery



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Waste & Other Landlord Recovery

