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Monthly Program Report November 2013

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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 November of 2013 the Plutonium Sustainment program at LANL completed or addressed the following high-level activities:

- 1) Procedures related to the pit fabrication flow sheet have been reviewed and revised by the engineering and operations teams and submitted for criticality safety review. These include 11 procedures and 20 Criticality Safety Limit Assessments (CSLAs). It is expected that this portion of the pit fabrication flow sheet will be resumed for operations in mid-FY14 and permit pit manufacturing using existing SNM parts.
- 2) Several key pieces of equipment in the Radioisotope Thermoelectric Generator Assembly and Test Facility (RTG-ATF) are now operational and collecting data including the shock towers, thermal chambers, E-tester, vibration table and furnaces.

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.

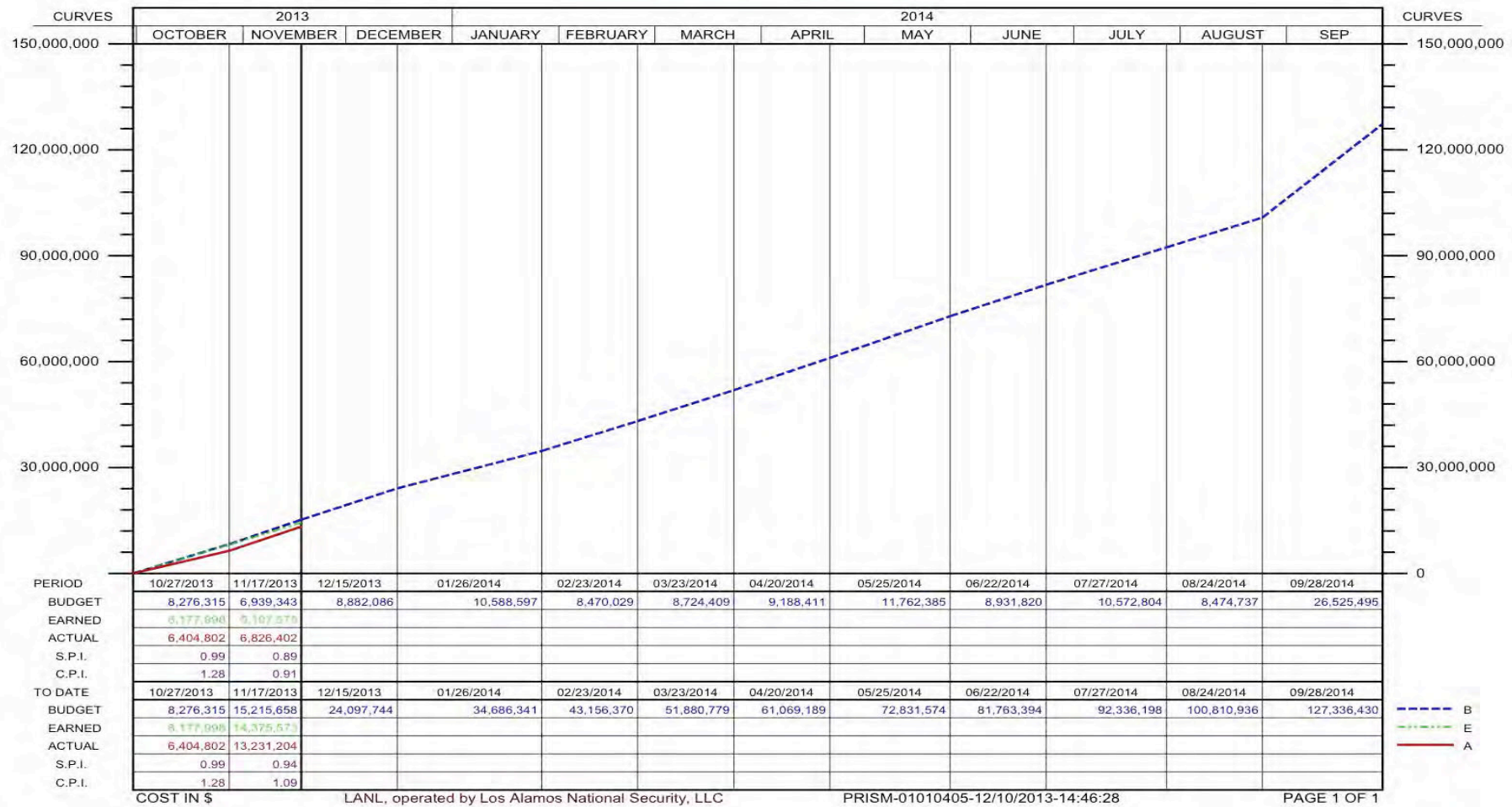
LANL Response to October NNSA Comments

none.

Earned Value Metrics

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01.01.04.05 Plutonium Sustainment



[NOTE: September 2014 includes 6% FY15 carryover holdback of \$7.640M in addition to the four major WBS elements.]

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1.0 LANL - Pit Development

MRT 4961		YELLOW	Perform Activities to Sustain Base Pit Material		
			(b) (7)(F)		
1.		(b) (7)(F)			
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			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			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			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			BLUE	
CDS Engineering Contract Awarded	February 16, 2014			GREEN	
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			GREEN	
PML Construction Planning Complete	May 22, 2014			GREEN	
PML Cold Testing Complete	July 3, 2013			GREEN	

1.1 Technical Progress

- Presented the high level, draft (b) (7)(F) meeting at Kansas City Plant. The discussion included LLNL DA, LANL PA, and KCP PA staff as well as NNSA program management. The plan is on track to be issued in December.
- The majority of pit manufacturing development is focused on resumption related activities. The documents for criticality safety review include 11 procedures and 20 Criticality Safety Limit Assessments. It is expected that criticality safety reviews will begin in January and will be completed in mid-FY14. Accordingly, most of the budget and scope through the current period is captured in a "level of effort" activity.

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 ERCS Unit #3 shipped to LANL. Review of software upgrade module 1 started.
 - o Implementation of fire protection requirements 85% complete.
- Foundry Upgrade (b) (3)
 - o Continued cold testing.
 - o GB 1 limited volume cooling water system skid introduced into PF-4 and anchored ahead of schedule.
 - o GB 1 furnace housing assembled and tested. Removal of existing housing and installation of new housing scheduled for early January.
 - o GB 2 vacuum and cooling systems 60% and 90% design reviews completed.
- Coordinate Measuring Machine (b) (3)
 - o Started engineering evaluation of CMM location environments
 - o Installation and operations lessons learned meetings with other sites completed.
- Chlorine Distribution & Detection System (b) (3)
 - o LISC approved purchase request for A/E services.
 - o Contract award for A/E design services on schedule.
- Precision Machining Line (b) (3)
 - o A/E design services contract bids submitted.
 - o Design Change Package review by system engineers started.

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- None

1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(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)

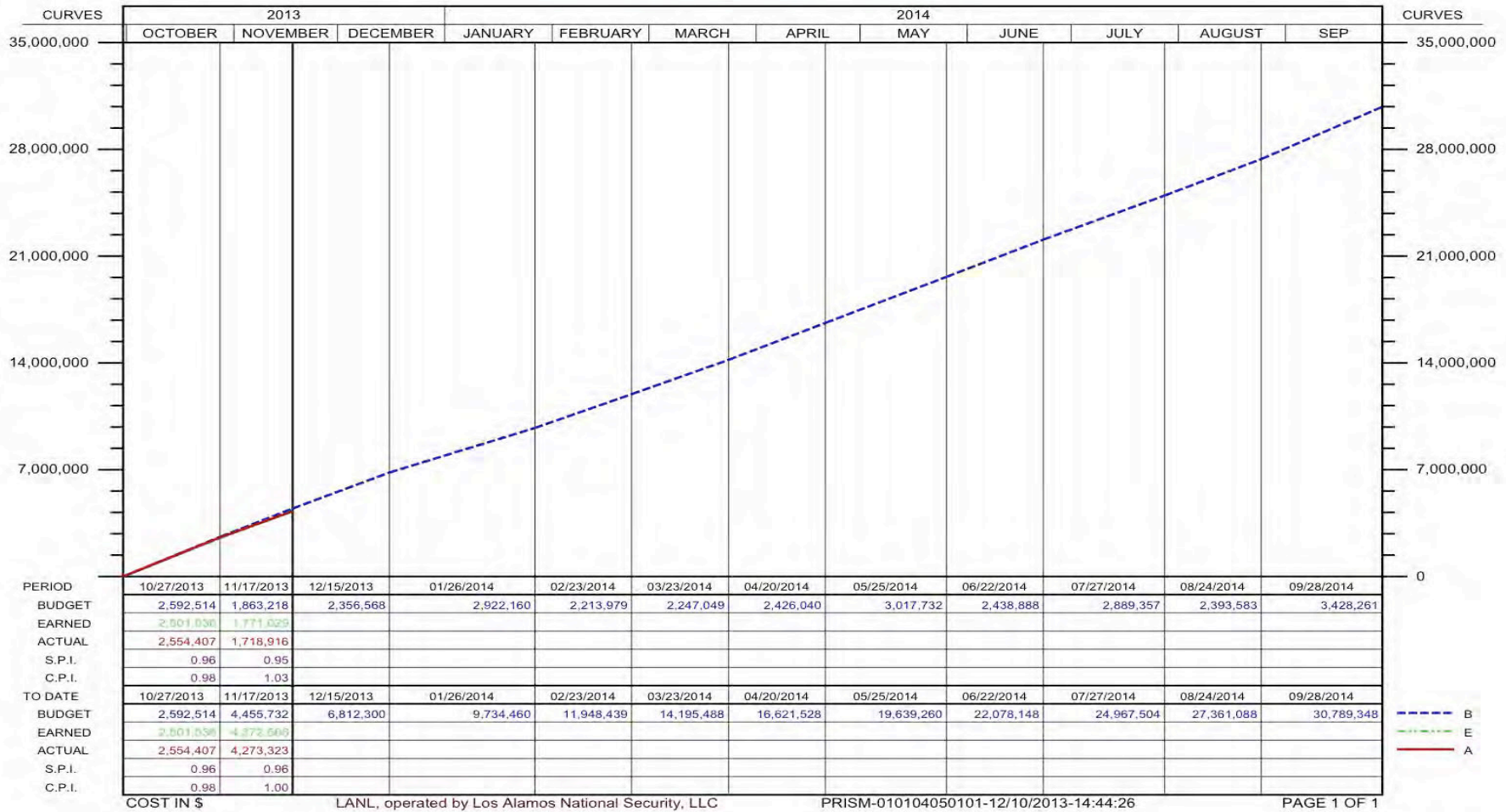
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Work	Description	Handling Strategy	Status
(b) (7)(F)			

1.7 Earned Value Metrics

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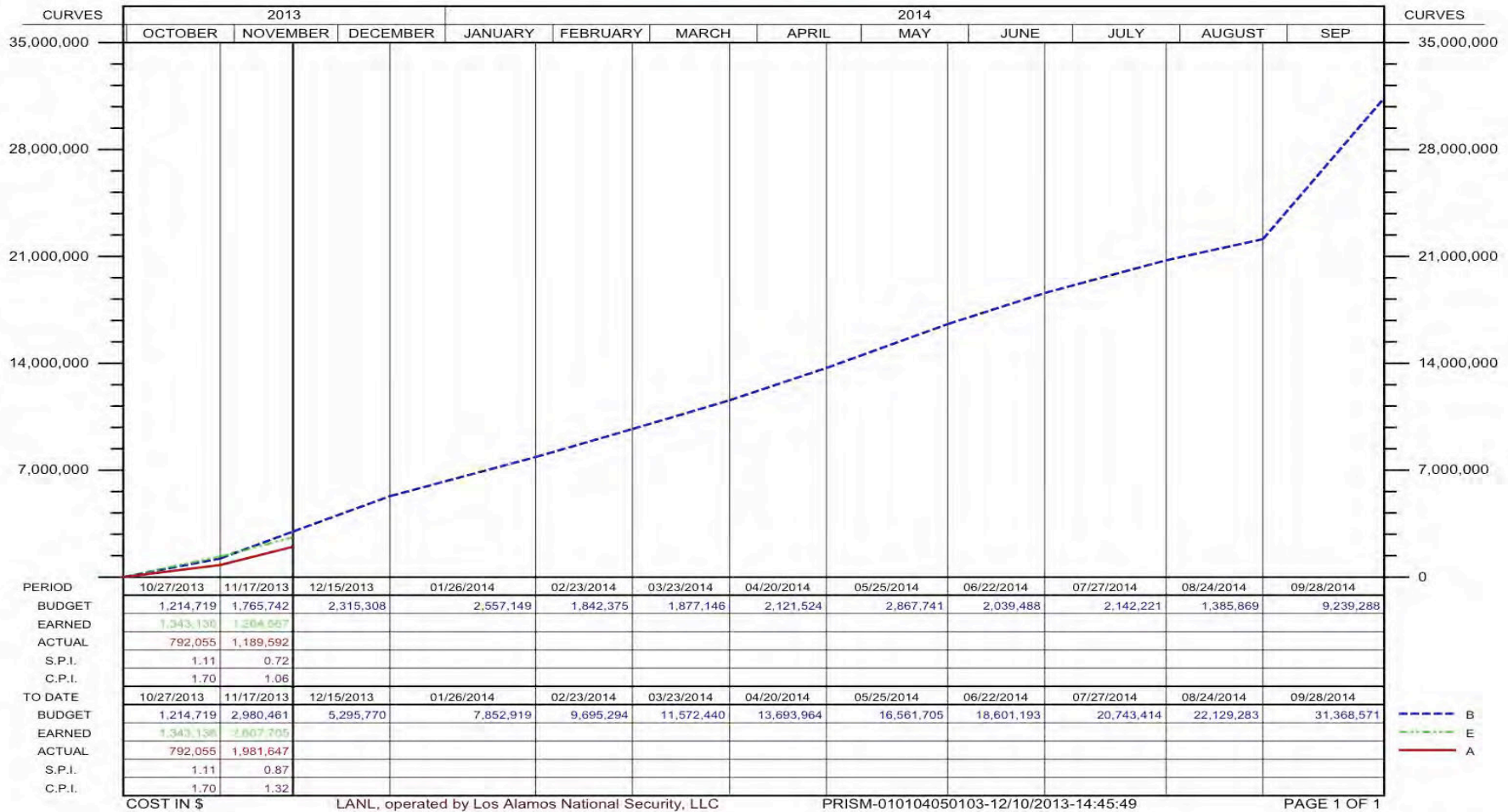
Pit Manufacturing & Design Development



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Pit Manufacturing Equipment



(b) (7)(F)

[NOTE: Several projects (ER Line [REDACTED] and associated D&D) have not been scheduled yet. Budget is currently pushed to year-end and will be scheduled in the first quarter (November and December BCRs).]

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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			GREEN	
	February 17, 2014			GREEN	
	March 10, 2014			GREEN	
	June 20, 2014			GREEN	
	August 29, 2014			GREEN	
	December 10, 2013			GREEN	
	February 25, 2014			GREEN	
	May 25, 2014			GREEN	
	January 9, 2014			GREEN	
	February 16, 2014			GREEN	
	March 2, 2014			GREEN	
	June 15, 2014			GREEN	
	August 29, 2014			GREEN	

2.1 Technical Progress

- (b) (7)(F)
 - o (b) (3)

- (b) (7)(F)
 - o (b) (3)
 - o
 - o

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- Test results on the D01 Heat Source liners have been sent to the Operations Support Packaging and Transportation group (OS-PT) for review. A concurrence memo will be issued by OS-PT in December. After receipt of a memo, a meeting with Safety Basis will be scheduled to review credible accident scenarios for the movement of heat sources from PF-4 to RTG-ATF.

2.2 Equipment

- Continued operations training on the shock towers and thermal chambers located in the RTG-ATF. Matrices of runs are being made to show reliability and repeatability of all of the environmental testing pieces of equipment in the facility.
- The E-Tester is up and running using a surrogate part. The E-Tester has been operated in a stand-alone mode and is now being tested with the Thermal Chamber environment. Tests were performed at ambient, 30°C and 90°C. A test at -55°C will be conducted shortly. Data is being collected and will be analyzed with KCP test engineers.
- The vibration table is operational.
- The furnaces are operational and collecting data. A study was conducted successfully to evaluate the furnaces for cleanliness and vacuum quality.
- To meet water pressure safety code, hose clamp connectors (106) to the chillers; furnaces; power monitor; and power supply were replaced with Swagelok fittings. Connections were leak tested and all passed. PFITS action was subsequently CLOSED.

2.3 Issues

- The continued Pause in PF-4 operations coupled with procedural activities for resumptions, is affecting PSP 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
- 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

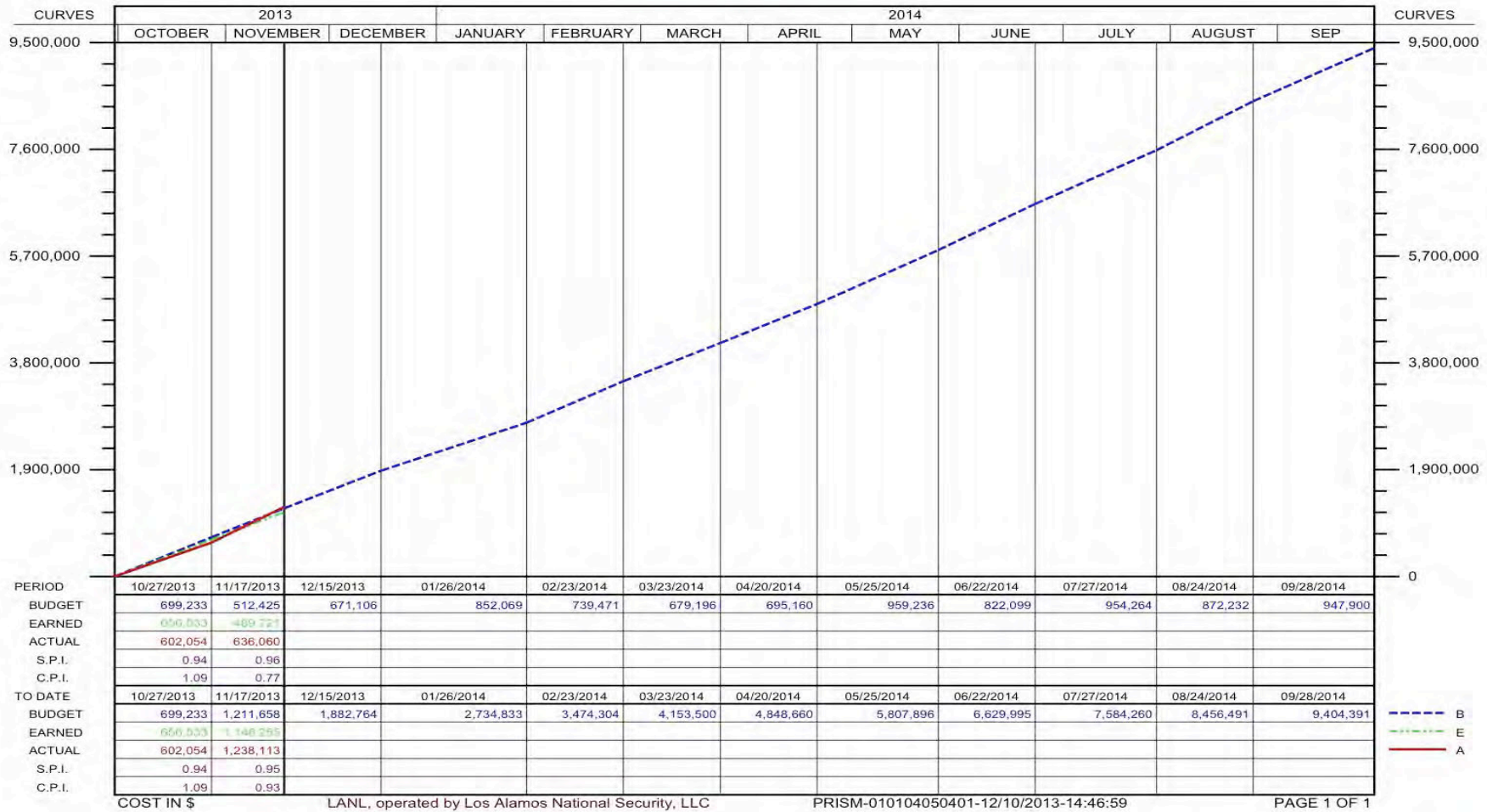
2.6 Risk Table

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)	(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) development.	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

- Submitted the allocation 0.1 matrix with the baseline Primavera schedule. Work packages are in final review and will be signed in November.

3.2 Support

- Document Control, Records Management, and Training
 - o Supporting the review of all operations greater than 2300 grams.
- Production Control
 - o Provided M&TE and classified parts coordination support.
 - o Continued to provide shop floor control and daily schedule status to Enduring Stockpile and Power Supply projects.
 - o Provided restart scheduling and performance tracking.
- Maintenance
 - o Corrective Maintenance: Initiated work on the dri-vacuum system in the 300 area but did not complete due to the pause.
 - o Preventative Maintenance: Completing preventative maintenance on systems requiring maintenance while in pause.
 - o Work Management & Control: Continued to collect specific history and determine how to view, report, and analyze.
- Warehousing and Procurement
 - o The procurement team successfully processed over 150 procurement requests for TA55 in November. The team was able to work through the period without the development of a substantial (> 1 week) and permanent backlog. Continued to effectively procure and manage material for multiple Pu Sustainment projects (ER, Foundry cold testing and Foundry Vacuum upgrades, CMM replacement, and (b) (7)(F) upgrades.)
 - o Processed 774 warehouse distributions and 2,884 warehouse receipts. The cost of the warehouse distributions was \$39.7k and the cost of the warehouse receipts was \$233.6k. The net change in warehouse valuation in October was -\$193,895.
- Calibration
 - o The S&CL continues to work with dimensional inspection at TA-55 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.

3.3 Issues

- Enacting a rolling start of PF-4 processes. A crawl list has been generated to monitor and track in a prioritize fashion how PF-4 product lines are restarted. Pit production procedures have been reprioritized and near the top of the resumption list.

3.4 Variance Analysis and Recovery Plan

- None

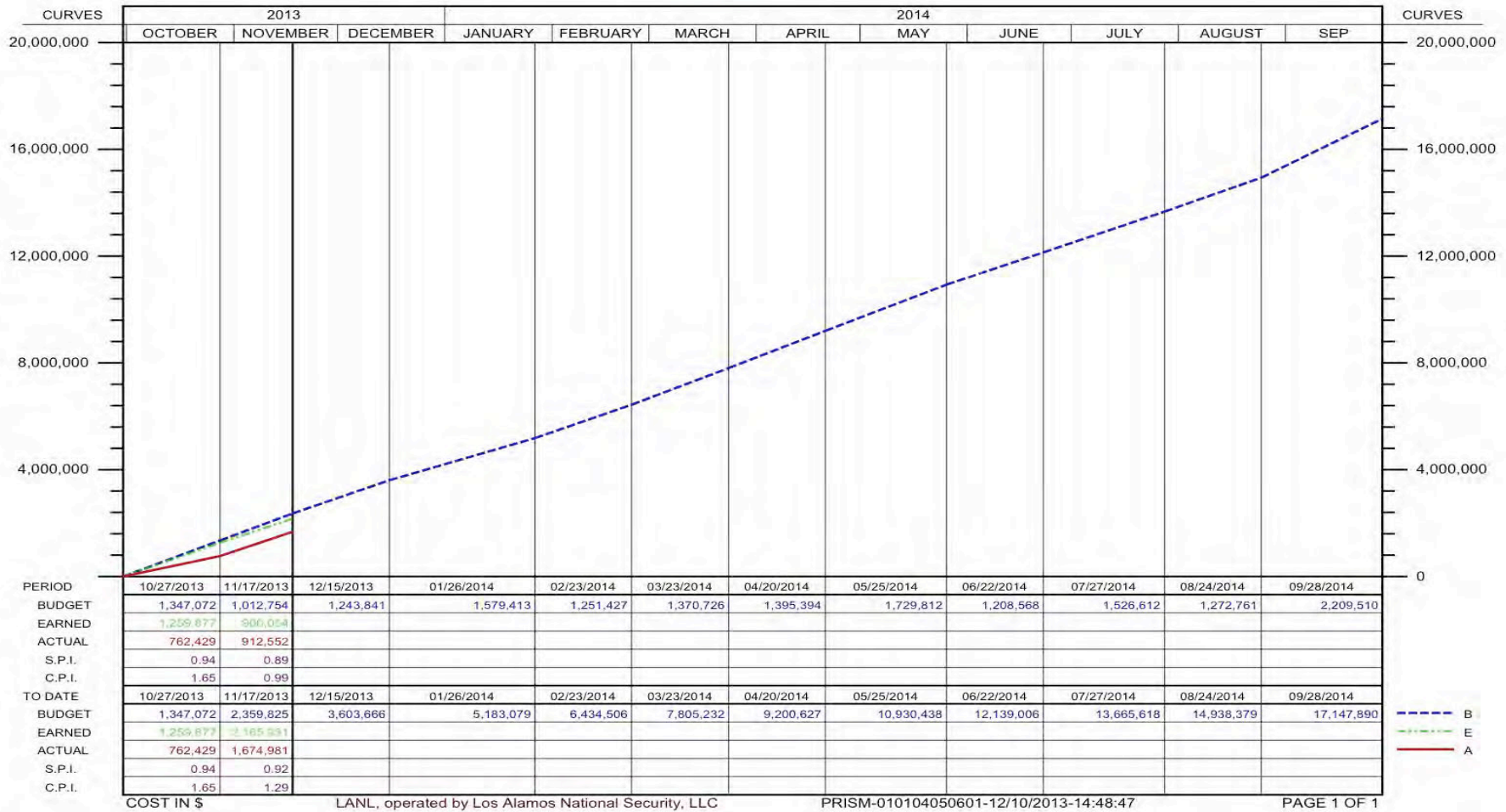
3.5 BCRs

- None

3.6 Earned Value Metrics

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Program Office



4.0 Facilities, Waste and Institutional Support

4.1 Technical Progress

- (b) (7)(F)

- o Completed the FMH (Fissile Material Handler) Pilot II portion of the process with
- Year to date costs for TA-55 Facility Operations was \$34,913k
 - o All procedures having now completed the table-top verification and initial walk down. A total of 73 procedures are currently in development, 66 are out for review, 51 are awaiting Criticality Safety review and 24 are in final preparation. To date, 74 procedures have resumed (25%). Eight additional procedures were internally approved for resumption.

4.2 Equipment

- None.

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

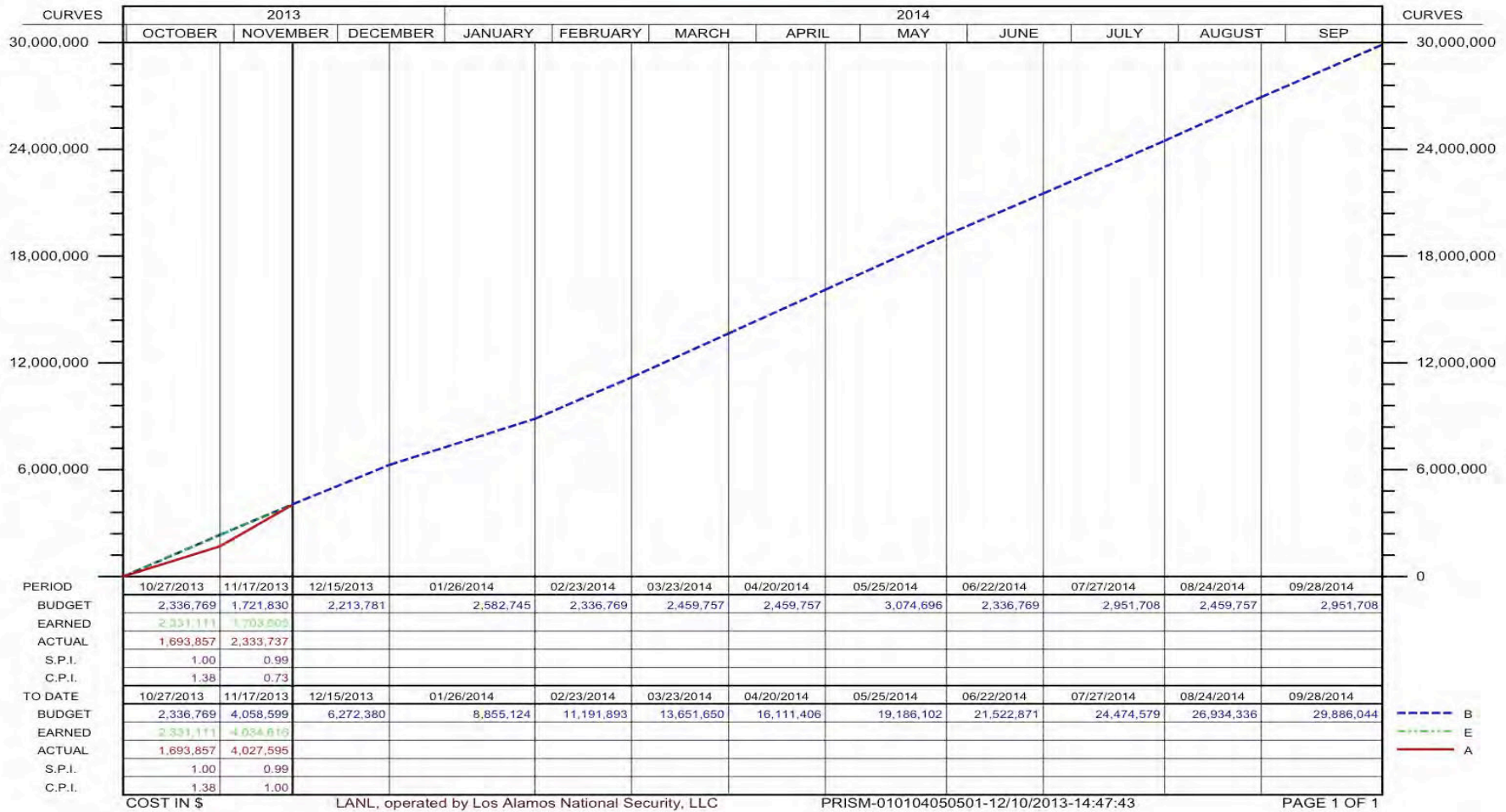
- None

4.5 BCRs

- None

4.6 Earned Value Metrics

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Waste & Other Landlord Recovery

