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Monthly Program Report May 2014

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LANL Executive Summary

As part of a required Conduct of Operations review, on June 10, 2013, several key PF-4 Operation Procedures were paused halting most SNM operations in PF-4 prompting Laboratory Director Charlie McMillan to issue a temporary pause of all programmatic activities in PF-4. The Evaluation of the Safety Situation (ESS) memo has been finalized and submitted to the Los Alamos Field Office for signature. It is expected that this will be signed in early June and resumption of activities will begin in the weeks that follow in accordance with this memo.

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

- 1) LANL has completed NNSA Level 2 Milestones (MRT 4963) by completing DEV Lot #1 of inert heat sources. DEV Lot #1 of assembled Power Supplies was started earlier this year.
- 2) The contract for the procurement of the Infinity machine (CMM) has been awarded.
- 3) The 30% glovebox fabrication design review has been completed for the CMM two months ahead of schedule.

One of the three NNSA Level 2 Milestones (MRT 4963) is completed and the other two (MRT 4961 and 4962) associated with Plutonium Sustainment are on track for success in FY14.

The earned value metrics overall for LANL are within acceptable thresholds with the exception of the elements effected by resumption (pit development and small sample fabrication). There is no recovery plan until the facility is resumed.

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

LANL Response to April NNSA Comments

The monthly spreadsheet has been updated in accordance with the April comments.

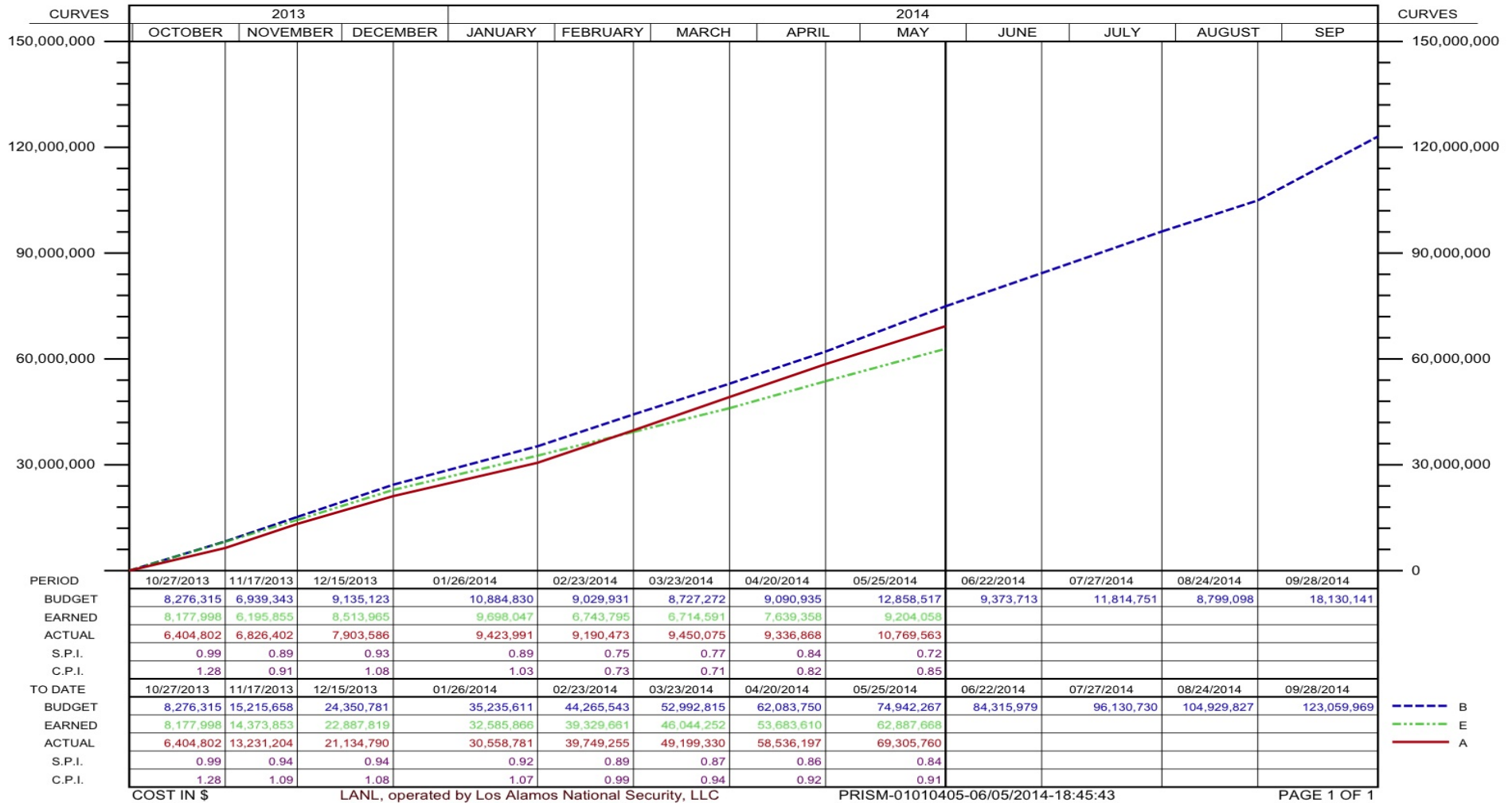
Table 1: May Baseline Change Requests

WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
Pit Equipment	PSM-14-054	D&D (b) (7)(F) Design	3/3/14	4/16/14	Scope, schedule and cost	\$846k	3
Pit Equipment	PSM-14-066	CMM #1 Re-plan	3/25/14	3/27/14	Scope and schedule	None	2
Pit Equipment	PSM-14-075	CMM #2 De-scope	4/14/14	4/17/14	Scope	None	2

Earned Value Metrics

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01.01.04.05 Plutonium Sustainment



[NOTE: September 2014 includes 6% FY15 carryover holdback of \$7.359M in addition to the five major WBS elements.]

1.0 LANL - Pit Development

MRT 4961		GREEN	Perform Activities to Sustain Base Pit Material (b) (7)(F)		
1.	(b) (7)(F)				
2.	(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. Complete CMM GB 30% design review and GB installation 30% design review. 5. Complete CDS installation 60% design review. 6. Finish installation (not including FCRs) on PML – Phase 2.					
ER Line Dry Run/Cold Test Complete		April 26, 2014	Cold testing of ER furnace control system hardware started		RED
ER Line Punchlist Complete		August 15, 2014		April 28, 2014	BLUE
Foundry GB1 Cooling Power Supply Received		June 2, 2014	Purchase of power supplies was approved on April 28, 2014		YELLOW
Foundry GB1 Cooling Furnace Housing Installation Complete		July 3, 2014		April 4, 2014	BLUE
Foundry GB2 Approved for Installation		September 30, 2014			GREEN
Complete location study for New GB & CMM		April 15, 2014		April 8, 2014	BLUE
Complete 30% CMM GB Utilities Installation Design Review		July 31, 2014	Completed	May 21, 2014	BLUE
Complete 30% CMM GB Fabrication Design Review		September 30, 2014			GREEN
Start CDS Engineering Development		October 1, 2013		October 1, 2013	BLUE
CDS Engineering Contract Awarded		February 16, 2014		January 9, 2014	BLUE
CDS 30% Installation Design Complete		June 1, 2014		January 28, 2014	BLUE
CDS 60% D&D Design Complete		August 11, 2014		January 9, 2014	BLUE
PML DCP Re-Activation Complete		January 10, 2014		December 12, 2013	BLUE
PML Construction Planning Complete		May 22, 2014	Does not include Field Change Requirements.	April 23, 2014	BLUE
PML Cold Testing Complete		July 3, 2013	Cold testing in progress.		GREEN

1.1 Technical Progress

- The contract for the procurement of the Infinity machine (CMM) has been awarded.
- The 30% glovebox fabrication design review has been completed for the CMM two months ahead of schedule.
- The majority of pit manufacturing development is focused on resumption related activities. Accordingly, most of the budget and scope through January is captured in a “level of effort” activity. With the publishing of the prioritized resumption schedule in February, Earned value tracking has been temporarily suspended for the pit development flowsheet.

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. Complete CMM GB 30% design review and GB installation 30% design review.
 5. Complete CDS installation 60% design review.
 6. Finish installation (not including FCRs) on PML – Phase 2.
- Electro-Refining Line Upgrade (b) (3)
 - Operational cold testing of ER (furnace) Control System (ERCS) with 9 hour and 72 hour runs started.
 - Material Transport System (MTS) configuration code update verification and testing started.
- Foundry Upgrade (b) (3)
 - Shop drawings for the power supplies were finalized with the vendor.
 - Procurement for the transformer fabrication was awarded.
 - Design of the racks for the power supplies and transformer was completed.
 - The contract for the windows and window gaskets for the glovebox was awarded.
- Coordinate Measuring Machine (b) (3)
 - The 30% glovebox fabrication design review has been completed.
 - The contract for the procurement of the Infinity machine has been awarded.
- Chlorine Distribution & Detection System (b) (3)
 - 100% D&D design review released for final approval.
 - 90% Installation Design review has started.
- Precision Machining Line (b) (3)
 - Helium leak testing of 3 gloveboxes completed.
 - L-base trouble shooting continues with cold testing to start in June.
 - (b) (7)(F) trouble shooting continues. Test plans have been approved. Testing will start in June.

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- None

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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 and Zone 1 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.	

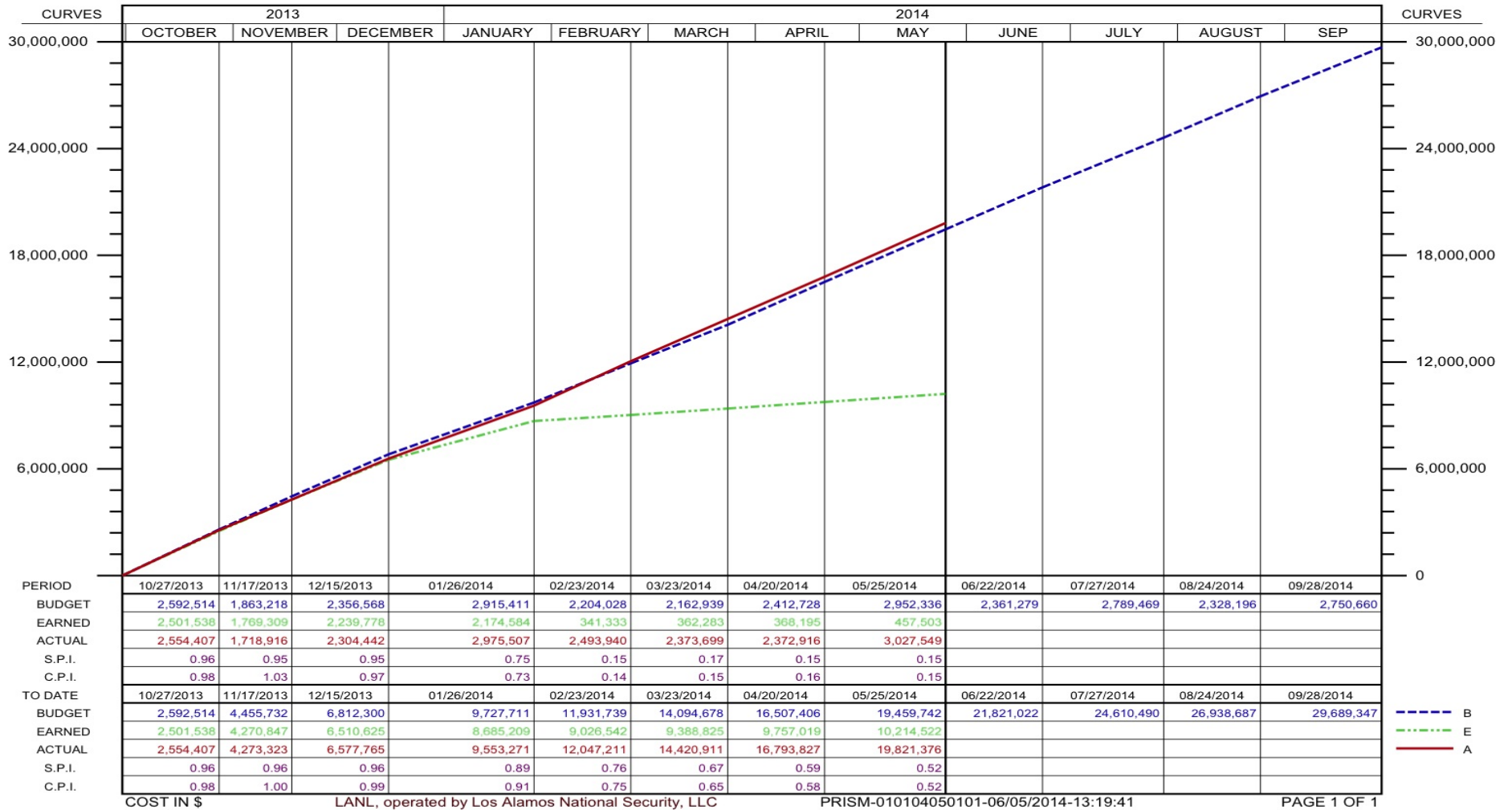
(b) (5)

(b) (7)(F)

1.7 Earned Value Metrics

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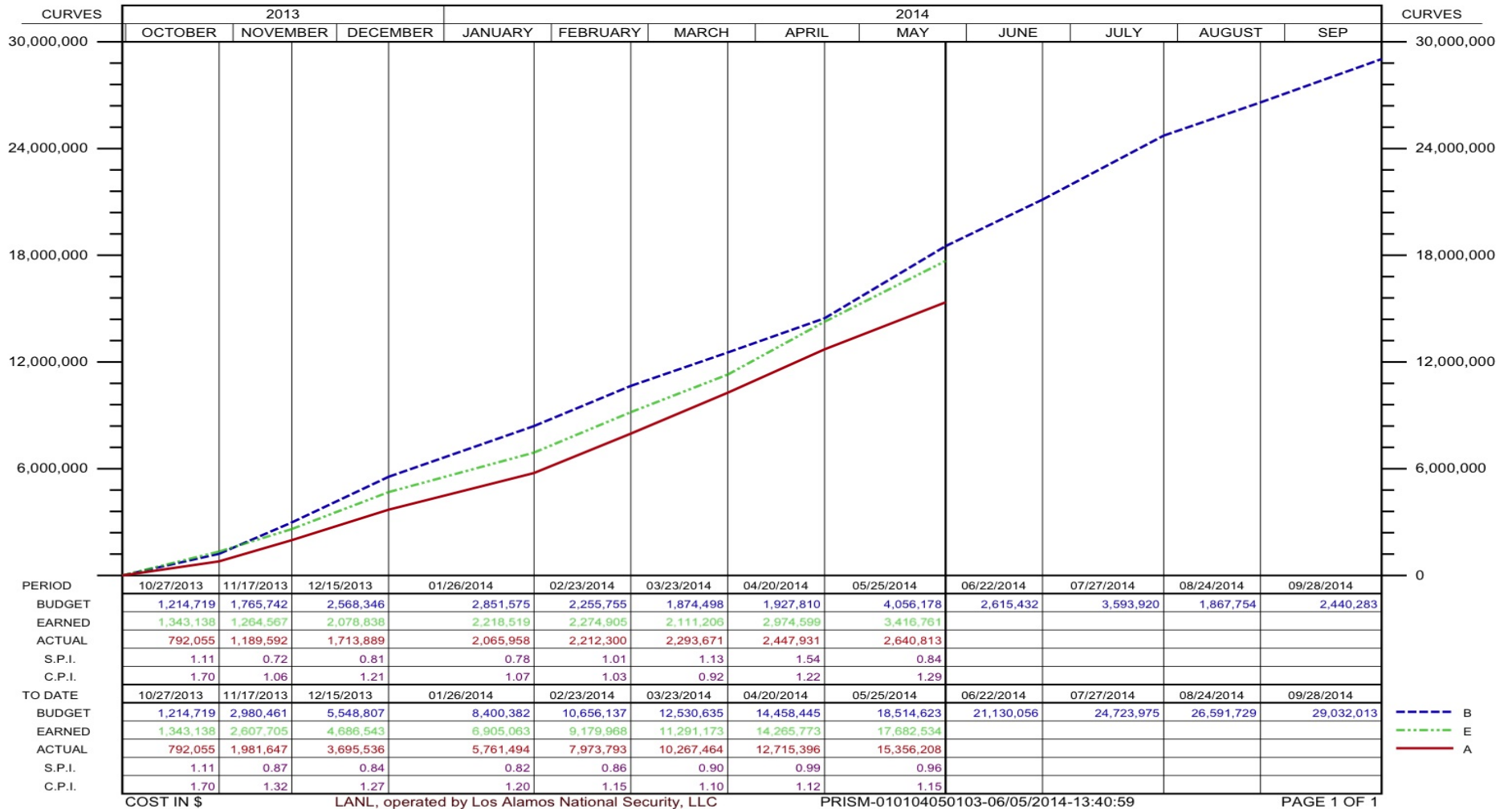
Pit Manufacturing & Design Development



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Pit Manufacturing Equipment



2.0 LANL - Power Supply

MRT 4963		BLUE	Progress Power Supply Development		
1. Complete (b) (7)(F) of inert heat sources. 2. Start (b) (7)(F) of assembled Power Supplies.					
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB	
(b) (3)	January 13, 2014		November 15, 2013	BLUE	
	February 17, 2014		November 15, 2013	BLUE	
	March 10, 2014	Completed	May 22, 2014	BLUE	
	June 20, 2014	Completed	May 22, 2014	BLUE	
	August 29, 2014	Completed	June 4, 2014	BLUE	
	May 25, 2014		October 15, 2013	BLUE	

2.1 Technical Progress

- (b) (7)(F)
- The DA has changed the design 3 times
 - Design changes are not within LANL's control
 - (b) (7)(F)
 - (b) (7)(F)
 - (b) (7)(F)
- This meets the needs of the PRT
- (b) (7)(F)
- (b) (7)(F)
- LANL fabricated 13 Mass Mock power supplies for use by the DA. Three were special designs to house accelerometers for mechanical testing. All were machined by LANL shops and welded to the SNL's design drawings using the (b) (7)(F) in RTG-ATF. The mass mocks were (b) (7)(F) marked using equipment that will be used in production.
- (b) (7)(F)
- (b) (7)(F)

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- (b) (7)(F)

2.2 Equipment

- (b) (3)
- An E-Tester Conceptual Design Requirements meeting was held in Kansas City for the production e-testers. The design is significantly different from the current prototype and is based on the experiences of operating the prototype. Two types of testers will be developed: one for mechanical testing (shock and vibration) and one for thermal testing. Back-up capability to protect against failure will be developed and at a significant cost reduction compared to the prototype.

2.3 Issues

- PF-4 operations for Pu-238 have resumed. The activities planned for FY14 are being prioritized. The start date for the planned FY14 Demo Fuel Run (Aqueous Processing and Fuel Fabrication) is still unknown.
- FY14 funding cancellation for UT Development for installation at SM-39 will delay weld development activities.

2.4 Variance Analysis and Recovery Plan

- None

2.5 BCRs

- None

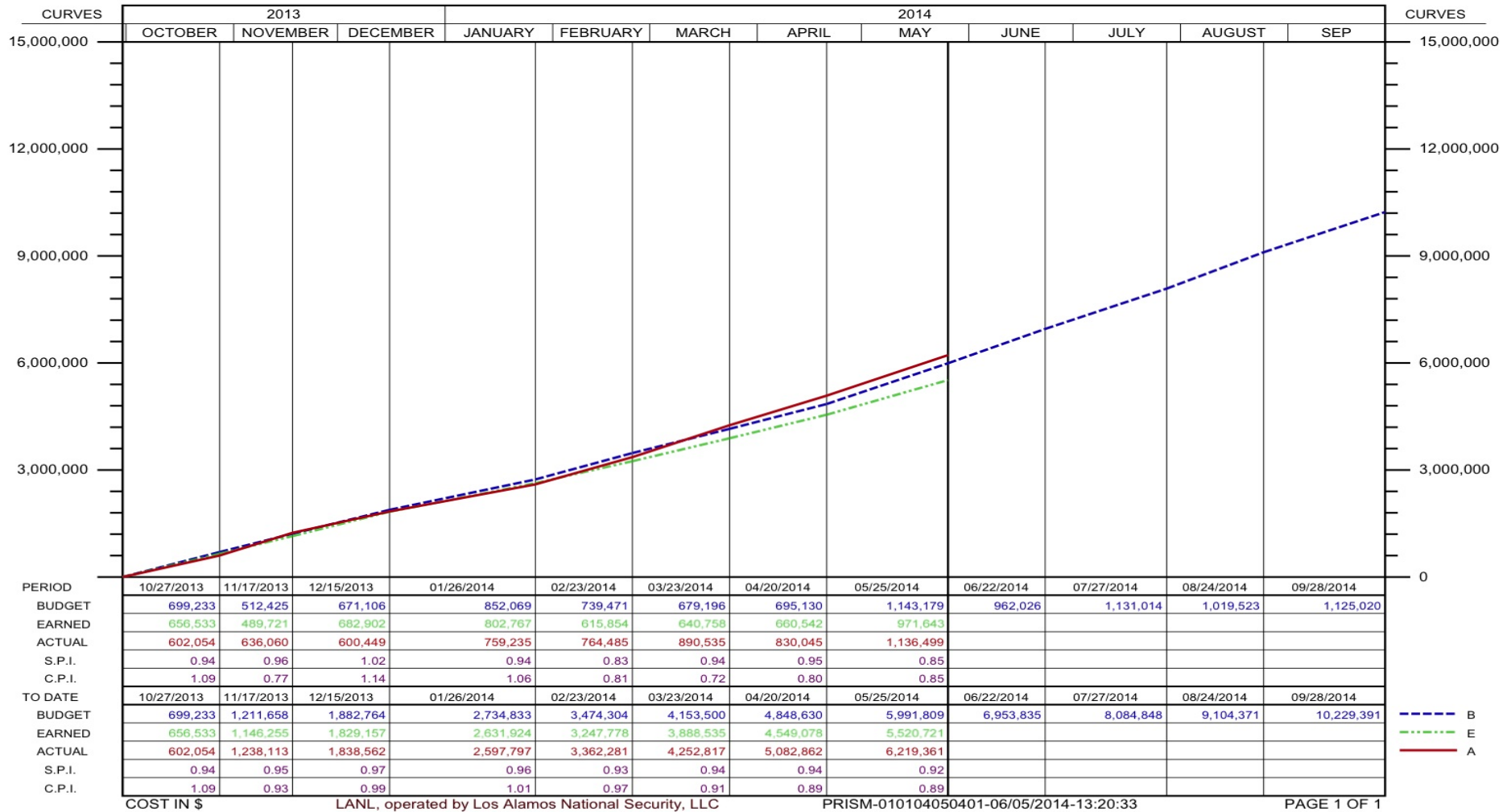
2.6 Risk Table

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 that LANL and LAFO management 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 delivery of 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 formally manage 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; this will not affect FPU schedule.	(b) (7)(F) Installation is expected to be complete in late FY14.
UT Cold Development	(b) (7)(F)	1. (b) (7)(F)	Hardware bought and on-hand. Equipment delivered at SM39 but installation/integration on-hold due to cancellation of FY14 funding. Funding for development and installation will resume in FY15.

2.7 Earned Value Metrics

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Power Supply Production



3.0 Program and Manufacturing Support Services

3.1 Program Management

- Supported the resumption scheduling effort with priority assignments and procedure list review.
- Began work package planning for FY2015.

3.2 Support

- The NPI-8 procurement team successfully processed 259 procurement requests for TA55 in May. The team was able to work through the period without the development of a substantial (> 1 week) and permanent backlog.
- About 60% complete with development of an automated Procurement Center Request system. The automated system will provide ADPSM procurement requestors the ability to complete an automated online request for procurements. Ultimately, the implementation of the Procurement Request System will enhance the capabilities of the DPR and will provide the customer with an easy to use procurement request system.
- Met with ASM's management team to discuss setting up a blanket order agreement (BOA) with North/Honeywell to help expedite the procurement of GB gloves.
- TA-55 Main Warehouse Transactions
 - 1,337 Warehouse distributions at a cost of \$102,151.
 - 1,680 Warehouse receipts at a cost of \$206,750.
 - 104,599 change in warehouse valuation.
- Calibration
 - The S&CL continues to work with dimensional inspection as requested 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.
 - 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.
 - Continued progress on two Lean Six Sigma process improvement projects to address chronic underperformance in completing calibrations of dimensional measuring and test equipment and to improve the quality of calibration report packages.
 - A total of 20 M&TE items were expected for May and 40 items were actually received. Calibrated 15 M&TE items in May. Successfully and consistently achieved target cycle time rates for equipment turn around to avoid mission and deliverable impacts.
- Records Management
 - Document Control Results
 - New DARs received by the team = 184
 - New DARs received for MET-1 = 30
 - New DARs received for MET-2 = 77
 - Completed DARs by the team = 7
 - Completed DARs for MET-1 = 1
 - Completed DARs for MET-2 = 0
 - Records Management Metrics
 - Boxes of records indexed and shipped out during month = 25
 - Boxes of records indexed and stored locally in VTR during month = 4.75
 - Boxes of records received during month = 0.8

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- Preventive and Corrective Maintenance

Completed preventative maintenance on systems requiring maintenance while in pause.

- Monthly bubbler PM – 300 wing.
- Completed monthly and Weekly Bostomatic Mill PM
- Completed daily rounds – 300 area equipment inspections
- Completed monthly and weekly (b) (7)(F) PM
- Completed monthly TNC Hoist and podlift (manlift) inspections
- Continued on Annual GB Mechanical PM – 400 wing – 100% complete.
- Continued on Annual GB Torque Validation PM – 400 wing – 100% complete
- Glove inspections – used to project glove needs and establish a baseline of glove types and installation and manufacture dates. Will result in annual assessment and correlation to procurement plans.
- Status and Condition inspection of all Glovebox HEPA's – results indicate many are older than 20 years, no defined replacement cycle, but are being replaced when the ventilation indicates filter is plugged. All 68 inlet filters are required to be replaced with SST units and have a firewater splash cover designed and installed.
- HEPA Filter Change tool fabricated and tested ready for use in 238 Filter PMs this summer.
- Glovebox safety assessment initiated on all 405 GBs – to assess condition and plan for repairs/replacement of inadequate components (cracked windows, damaged surfaces, unused intro ports, potentially damaged/leaking connections and doors.

Corrective Maintenance

- Replaced (b) (7)(F) Intro hood HEPA Filter (composite team with MST-16)
- Replaced (b) (7)(F) Intro hood HEPA Filter (composite team with MST-16)
- Trouble call – (b) (7)(F) – Ongoing efforts to determine power failure. Several repair attempts made.
- Trouble call – (b) (7)(F) – Attempts made to repair, new troubleshooting plan is under development.
- Trouble call – Drill and Press – Determined that a AC to DC converter is defective, SE is working on obtaining a replacement part. Current status: parts are on order.
- Trouble call- Electrical conductors exposed to PVD-44 pump #2. Repairs completed.

- Small Job Projects

- (b) (7)(F)
- DMU-35 Installation:
 - Install new moisture sensor, support bracket and signal wiring to Dri-train.
 - Re-configure dri-train wiring to accept signals from moisture sensor and 2 Delta F O2 analyzers.
- Drill and Press Fixture installation – Began to work on relocating controller to dedicated cabinet. Will continue this effort in June.
- (b) (7)(F)
- Installed 11 ea. Electrical Feed-thru's on (b) (3). 2 additional feed-thru's are on order, scheduled to install ~August.
- Glovebox Assessment - Assisted with field walk-downs/data collection

- New Work (planning and work package development)

- Install new foot switches to 3 ea. Hardinge lathes (b) (3)
- Electrical Outlet Replacement – Complete 400 wing 1st
- (b) (7)(F)
- Repair outlet (b) (7)(F)
- Standing WO to repair/replace inert gas solenoid valves
- Standing WO for Photohelic Gauge PM and CM
- TSP for AMETK pump installation to moisture analyzer
- Preparing Standing IWD to fill PF50/50 reservoir

- Work Management & Control:
 - Continued to collect specific equipment history.
 - Supported MEL entries (cont)
 - Repair GB door (b) (7)(F) need SE to approve door gasket, (b) (6) assigned.
 - Repair GB door (b) (6) Need SE to develop EED for replacement Regulator – (b) (6) Assigned. Need new IWD.
 - Repair service in (b) (3) – Need to replace leaking filter on compressed air service. EED needed, assigned to (b) (6) . IWD needed.
 - Replace Tuna Can Filters (b) (7)(F) Walk-down completed, decision was made to have the Pipefitters complete this request.
 - Install speed controls to furnace op's in (b) (3) . Scoping completed, awaiting approval from GB system engineering to secure controller to GB support leg.
 - TSP – Replace Delta F analyzer with EED Omega analyzer. Waiting for drawing package from (b) (6)
 - Closed out Asset Suite WO's and recorded history against 14 PM/CM W.O.'s completed in May.
 - Recorded Old/archived history from File Maker Pro CMMS.
 - Recorded several GB assessment data records in CMMS
- General Support
 - Assist MC&A hold ticket issues in 400 area. Operated TNC hoists.
 - Supported WETF with Teledyne O2 analyzer issues.
 - Supported MET and (b) (6) with start up of (b) (3) dri-train.
 - Supported/participated in VSP and WSST activities and meetings
 - Supported GBSS Committee (chair and participation)
 - Supported development of GB assessment form.
 - Coordinated and Scheduled PM/CM/TSP's and Project Support work through the room controllers/customers/IPOP.
 - Processed Pre-job completions to GL.
 - Supported the installation of GB LED lighting. In the process of adding the work history (LED replacement) in CMMS.
 - Supported (b) (6) – apply LOTO/tags to (b) (7)(F) Argon system.
 - Assisted and reviewed MET-2 IWD – Classified Component Glovebox Clean out
 - Supported development of IWD (PA-IWD-01163) Maintenance tasks – (b) (6) .
 - Supported development of IWD on Bagout Transient Combustibles
 - Supported development of Sliding Airlock Trays IWD/Plan. Participated in cold shop walkdown.

3.3 Issues

- Metrology
 - Funded to meet anticipated M&TE calibration requirements, however, aging calibration equipment is beginning to fail (one item failed in November) and replacement will be required to avoid impacts. Additional funds were allocated in February to partially fund service contract and equipment replacement needs and replacement equipment is being procured within budget constraints. This will continue to be an on-going issue until enough equipment is replaced to mitigate the potential for equipment failure.

3.4 Variance Analysis and Recovery Plan

- Through month end April under spending relative to planned on facility and production support activities. Developing recovery plans for work packages spending at rates higher than planned. Monitoring end of year plans for work packages spending below planned with multiple BCRs planned for equipment procurements.

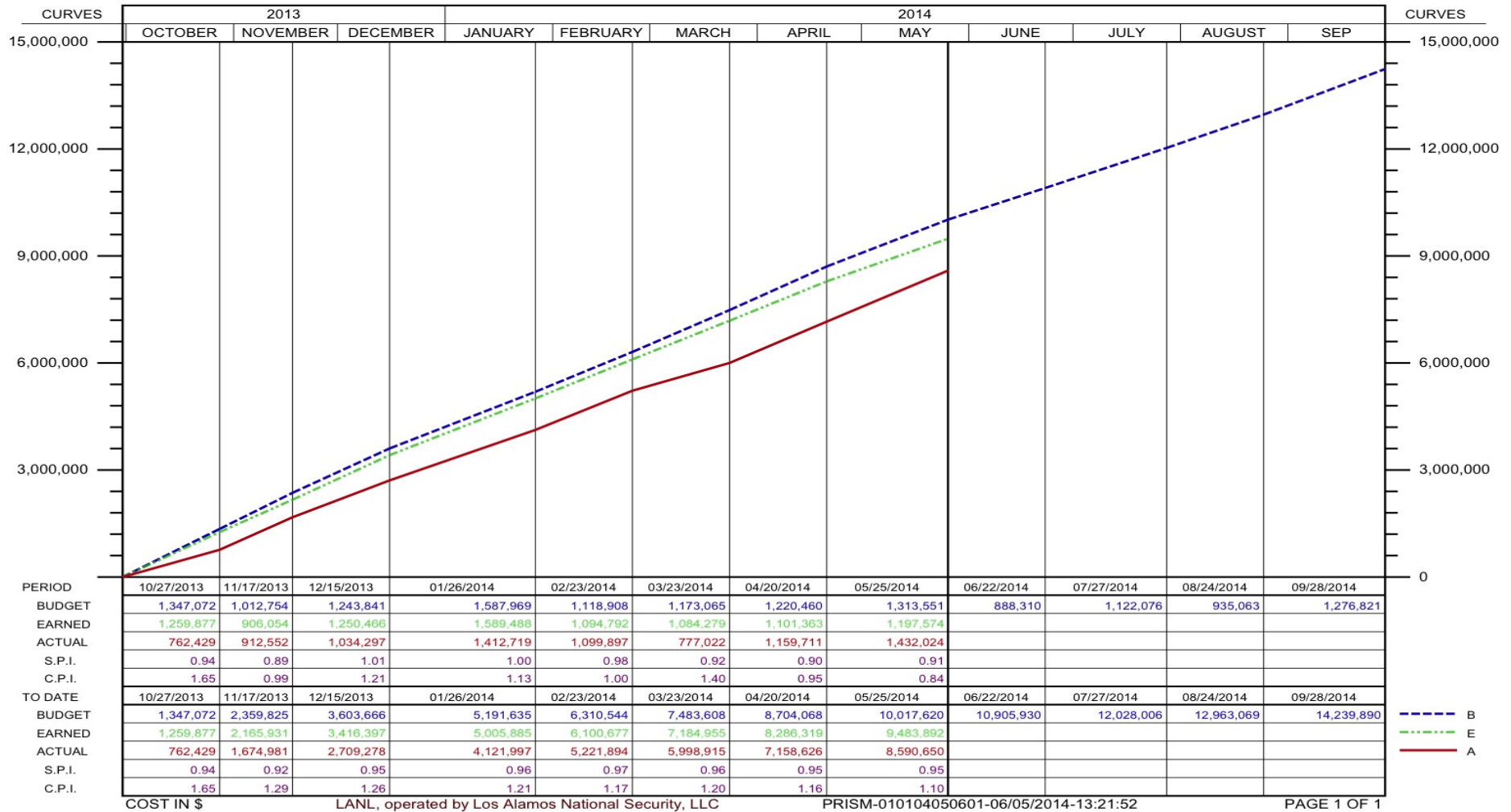
3.5 BCRs

- none.

3.6 Earned Value Metrics

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Program & Manufacturing Support Services



4.0 Facilities, Waste and Institutional Support

4.1 Technical Progress

PF-4 Facility availability in May 85.36%

- Mode-1 Operations Restored May 12, 2014 - NHHO Event Notification: TA55 Degraded FCS (Facility Control System)
- TA-55 Building 4 description: Reliable communication between master PLC (Programmable Logic Controller) and field.
- Shaker Testing for HUB Network Switch Components Technical Evaluation and Acceptance Plan Complete: Development of the Component Packages Ongoing.
- Mode-1 Operations Restored May 12, 2014 - NHHO Event Notification: TA55 Degraded FCS (Facility Control System).
- TA-55 Building 4 description: Reliable communication between master PLC (Programmable Logic Controller) and field.

Maintenance Modifications

- Bleed-off Sewer Vent Relocation.
- Public Address Interface upgraded.
- PF-8 diesel fuel tank installation.
- Procurement of high temperature HEPA filter received LISC approval.

4.2 Equipment

- TA-55 deferred 1 preventive maintenance (PM) due to a DOP needing revision, 1 PM due to equipment OOS and 1 PM due to Engineering.

4.3 Issues

- A restriction is in place for acetylene cylinders brought into PF-4. The TA55-FOD, Deputy FOD, Maintenance Manager, or TA5-OM must approve acetylene to be brought in and the cylinder must be removed at the end of the shift.

4.4 Variance Analysis and Recovery Plan

- None

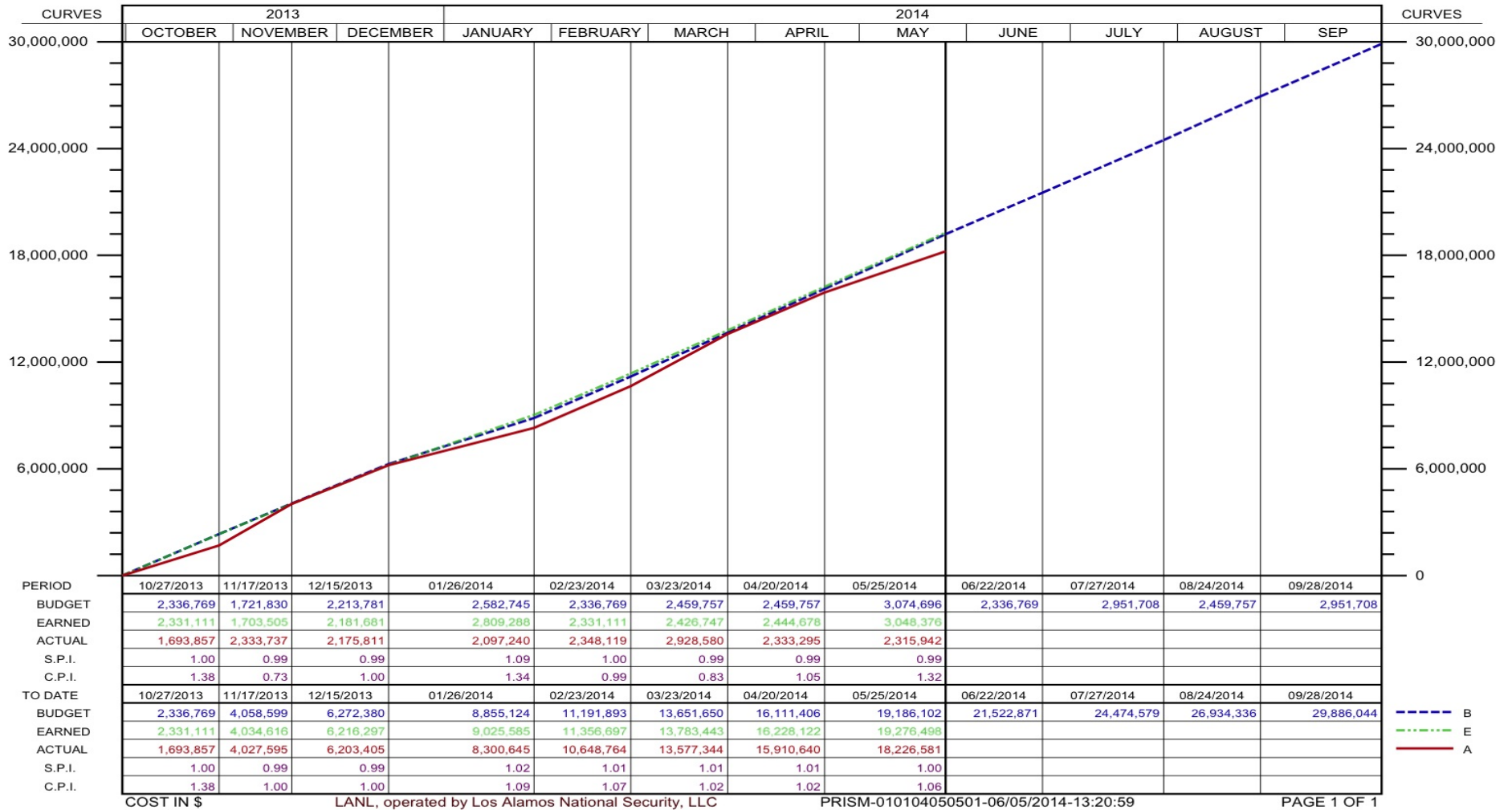
4.5 BCRs

- None

4.6 Earned Value Metrics

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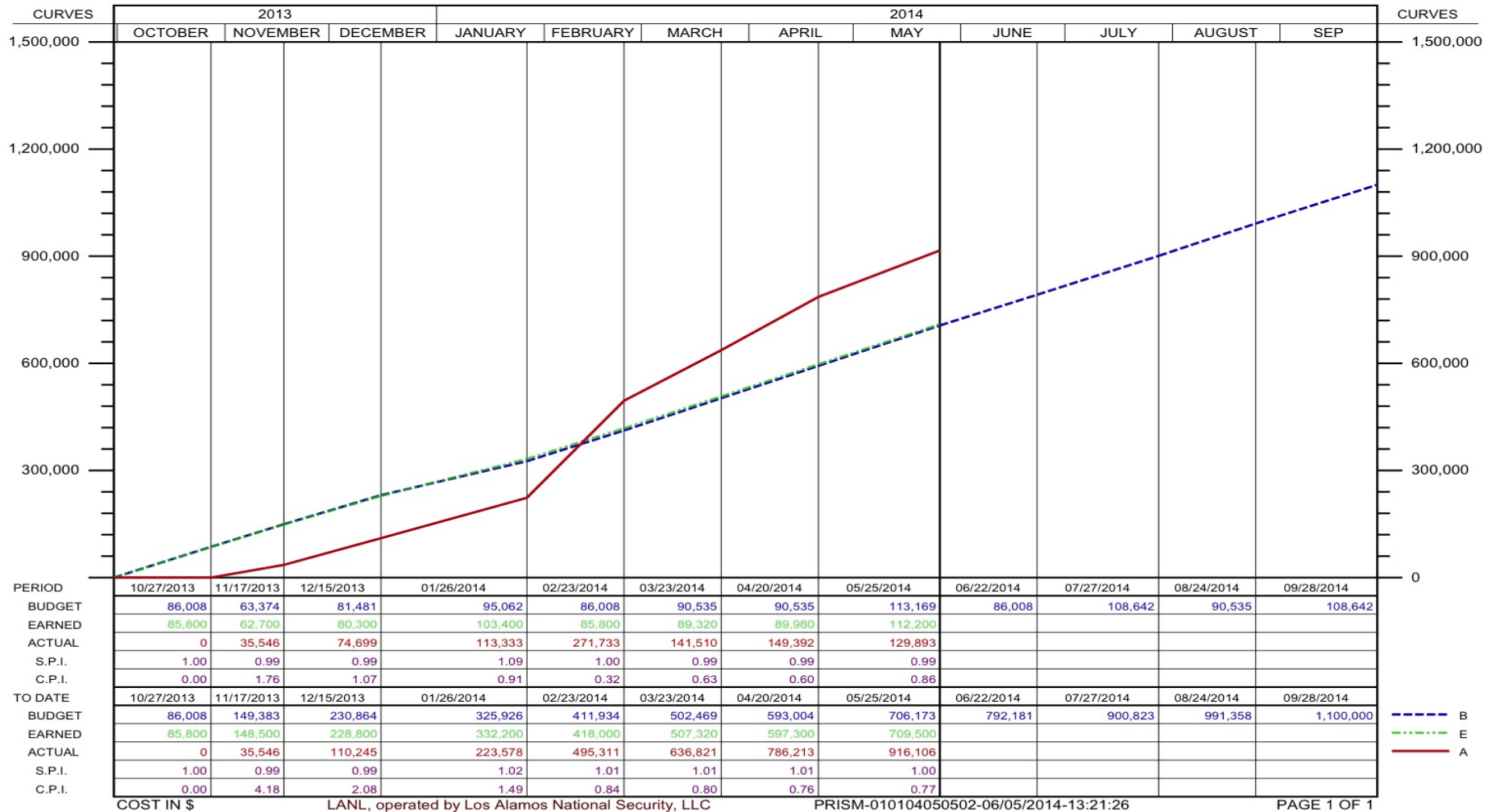
RTBF Recovery



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Waste & Other Landlord Recovery



5.0 Plutonium Experimental Device Fabrication

5.1 Technical Progress

- Resumption requirements were identified to meet the L2 milestone for Z-machine sample fabrication. The procedures and criticality safety documents required were prioritized and are being worked to meet an early June start date required to be successful.

5.2 Equipment

- None.

5.3 Issues

- Work is currently paused.

5.4 Variance Analysis and Recovery Plan

- None

5.5 BCRs

- None

5.6 Earned Value Metrics

PERFORMANCE S-CURVE

Plutonium Experimental Device Fabrication

