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

- 1) (b) (7)(F) The attempt resulted in a failed leak check presumed to be a failed (b) (7)(F). A follow-up second attempt was aborted when the (b) (7)(F) chiller failed.
- 2) Received the Certificate of Occupancy for the Radioisotope Thermoelectric Generator - Assembly & Testing Facility (RTG-ATF).
- 3) Completed all MSA Pre-Start findings associated with construction activities for the RTG-ATF.
- 4) Submitted the initial FY14 budget allocation matrix.

All four NNSA Level 2 Milestones (MRT 4622-4625) associated with Plutonium Sustainment are on track for success in FY13. MRT 4623 and 4624 are complete.

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 with a section at the end that is provided by LLNL (the KCP report is filed separately and directly).

LANL Response to May NNSA Comments

none.

Table 1: June Baseline Change Requests

WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
Pit Equipment	PSM-13-070	Chlorine Distribution Detection Systems	5/7/13	6/5/13	Cost/Schedule	\$163k	3
Pit Equipment	PSM-13-074	ER Line	5/16/13	7/2/13	Cost/Schedule	\$600k	3
Power Supply	PSM-13-077	Oxide Recovery of Miscellaneous Material	6/11/13	7/8/13	Schedule	N/A	3
Program Management	PSM-13-078	Sequestration	6/17/13	working	Cost/Schedule	TBD	1
Power Supply	PSM-13-081	Shipping & Receiving	6/21/13	working	TBD	TBD	TBD

Earned Value Metrics

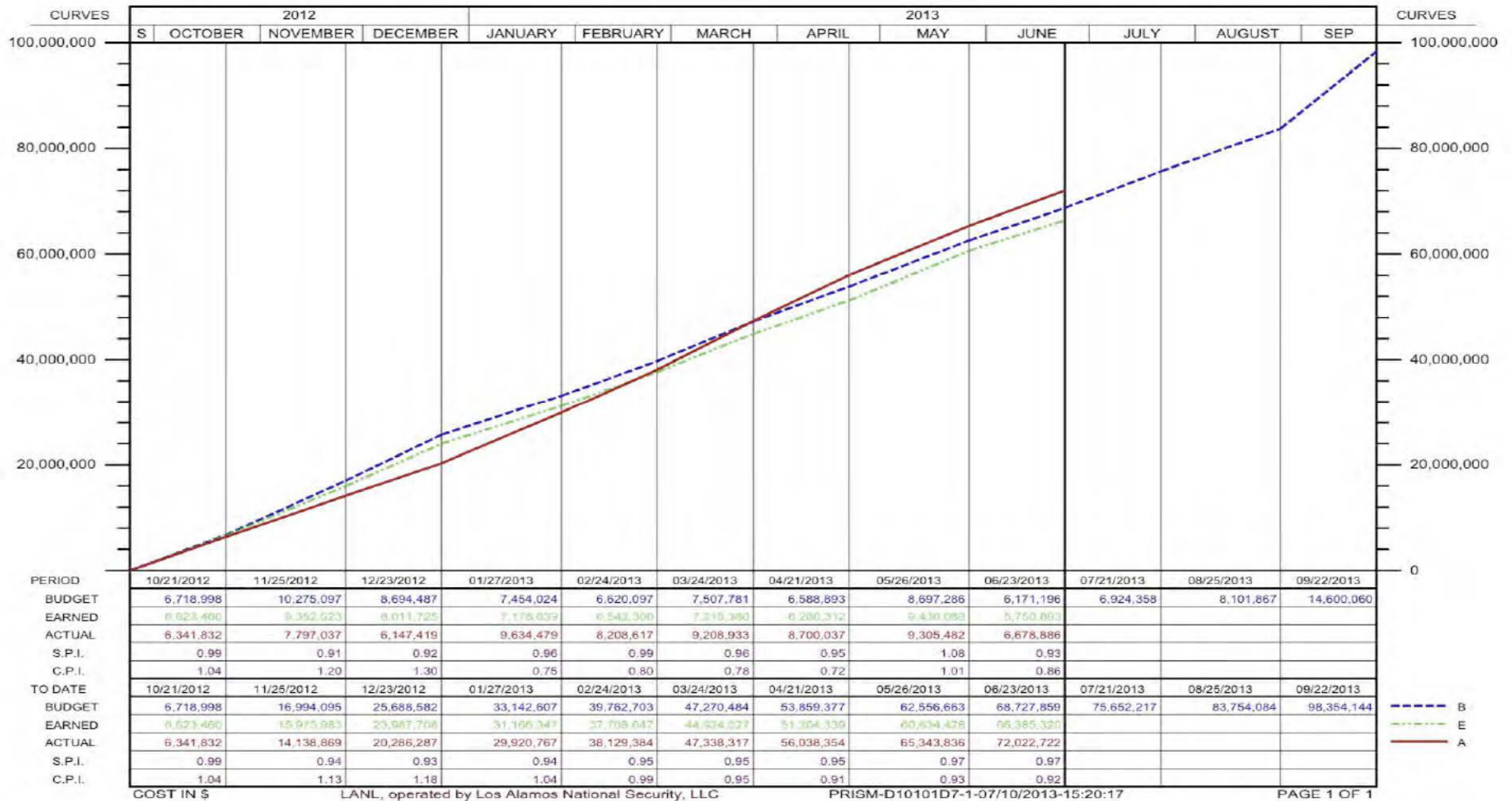
PERFORMANCE S-CURVE

LANL Pu Sustainment



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PERFORMANCE S-CURVE LANL Pu Sustainment W/O Facility Infrastructure



1.0 LANL - Pit Development

MRT 4622		GREEN	Perform Activities to Sustain Base Pit Material Processing and Fabrication Capability		
1. (b) (7)(F)					
2. Maintain pit manufacturing capability by producing (b) (7)(F) and/or exercising the pit fabrication flow sheet.					
3. Continue to make progress on the Electro-Refining line, Plutonium Foundry, and (b) (7)(F) projects.					
(b) (7)(F)				RGYB	
				BLUE	
				BLUE	
				BLUE	
				BLUE	
				BLUE	
				BLUE	
				BLUE	
				BLUE	
Equipment					
(b) (7)(F)		November 1, 2012		October 17, 2012	BLUE
		March 13, 2013		March 12, 2013	BLUE
		March 21, 2013		March 4, 2013	BLUE
		April 19, 2013		February 27, 2013	BLUE
		June 27, 2013		June 27, 2013	BLUE
		June 30, 2013	With variance for Criticality Safety. Used related craft IWD to start construction	June 11, 2013	BLUE
		July 19, 2013	PF-4 pause to operations has impacted IWDs for installation & testing		RED
		July 26, 2013	On track to meet milestone		GREEN
		July 30, 2013			GREEN
		August 29, 2013			GREEN
		September 20, 2013		April 22, 2013	BLUE
		September 30, 2013			GREEN
		September 30, 2013			GREEN
MRT 4623		BLUE	(b) (7)(F)		
1. (b) (7)(F)					
(b) (7)(F)					

1.1 Technical Progress

- (b) (7)(F)
o (b) (7)(F)
o (b) (7)(F)
- Completed replacement of the spindle motor for the (b) (7)(F). Prove-in testing was halted due to PF-4 work pause.

1.2 Equipment

- The plan to meet the grading criterion #3 for L2 milestone MRT 4622 includes the following:
 1. (b) (7)(F)
 2. The Plutonium Foundry Upgrades - complete cold testing, issue an approved design for construction, and start construction on the first of three foundry gloveboxes by September 30, 2013.
 3. The Electro-Refining Line Upgrade - complete all mechanical and electrical construction activity associated with the eleven electro-refining boxes and systems by September 30, 2013.
- (b) (7)(F) (b) (3)
 - o The control skid for the hot glovebox was brought into PF-4 and located under the glovebox.
 - o The PF-4 operations pause impacted cold and hot glovebox installation and testing.
 - o IWDs were enhanced to address the PF-4 operations pause, and are undergoing review and approval.
- Foundry Upgrade (b) (3)
 - o DCP 11-008 for the GB-1 Cooling Installation was approved for construction
 - o Integrated Work Documents (IWDs) for the Foundry Cooling System Upgrade were at 75% complete and on track for a July completion.
 - o System functionality testing continues in the Cold Laboratory
 - o Issues with performance of the power supply and power transfer systems are being addressed. Results of testing and analysis will be available in July.
- Electro-Refining Line Upgrade (b) (3)
 - o Continued work on mechanical and electrical installation for MTS Conveyor, Dri-Train, and Trunklines I & IV to meet L3 milestone in July.
 - o Ahead of schedule for selected items of electrical/mechanical installation for Braking Press, HPU to meet the L3 Milestone in August.

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- PSM-13-070: Chlorine Distribution & Detection Systems - provides additional scope to perform trade study, hazards analysis, and work package support.
- PSM-13-074: Electro-Refining (ER) Line – additional FY13 scope to perform Phase 2 of ER Control System (ERCS) enhancements and execute associated software proven in, modification of breaking press boot, conveyor upgrades, and end panel glove port reconfiguration.

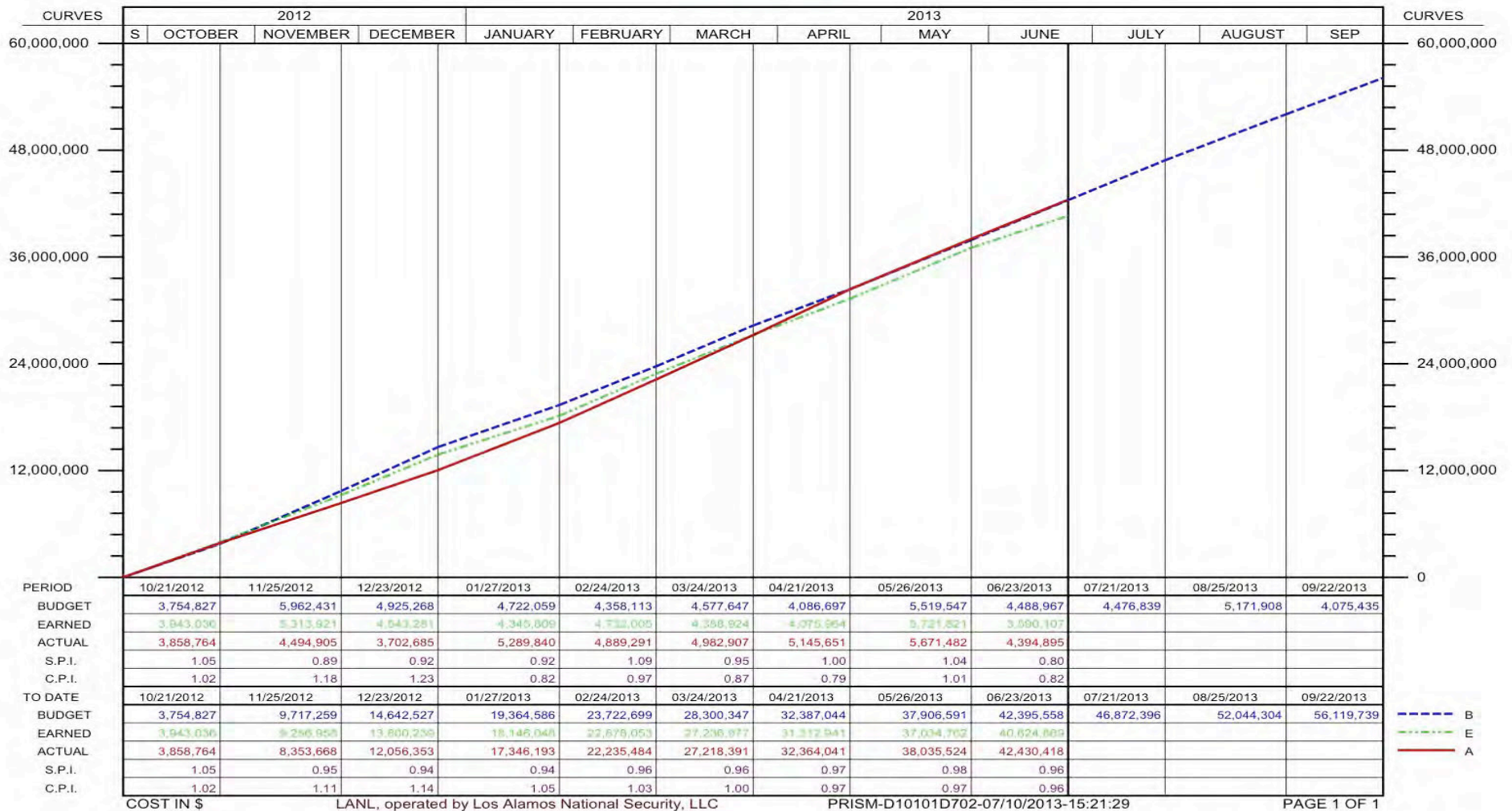
1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(b) (5), (b) (7)(F)	(b) (7)(F)	This risk was not realized as we built the 4 th pit.
Use of the (b) (7)(F) may not be authorized given the need for an updated Criticality Safety Evaluation Document (CSED) for the process.	Programmatic Criticality Safety Evaluations have been placed hold per Memorandum AD-NHHO:13-060. (b) (7)(F)	This is tracked as a potential impact at a weekly AD-PSM project /program status briefing	This problem has been exacerbated by the recent procedure pause. Not only are criticality safety evaluations required for procedures but several procedures need to be released in order for the upgrade work to proceed.
(b) (7)(F)	Installation and testing delayed by review, enhancement, and approval of IWDs per the PF-4 pause.	IWDs have been given high priority to review and approve. This is tracked at the weekly AD-PSM project/program status briefing.	(b) (7)(F)
(b) (7)(F)			
Analytical actinide chemistry may lose the support from other programs at LANL.	The NA-26 funded ARIES program is considering the option to transfer chemistry out of LANL. Currently the Program and ARIES are the primary funding sources for this capability. The Program has already reduced the number of samples for chemistry analysis. This potential for an ARIES elimination and Program reduction in funding could result in loss of the chemistry capability altogether for actinide samples at LANL.	The risk is now the new baseline.	This risk has been realized and has resulted in a baseline cost of approximately \$10M (including CMR RTBF recovery) to maintain core competencies during the next few transitional years.

1.7 Earned Value Metrics

PERFORMANCE S-CURVE

Pit Manufacturing



2.0 LANL - Power Supply

MRT 4624	BLUE	Complete FY 2013 RTG material recovery activities		
(b) (7)(F)				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
(b) (7)(F)				

2.1 Technical Progress

- Material Recovery
 - (b) (7)(F)
 - Completed the Integrated Work Document to open a sampling of non-standard material storage containers. The Electronic-Traveler has been prepared and is being reviewed. Although material harvested from these containers is not part of the L2 milestone with the reduction in FY13 shipments the material recovered from these non-standard containers will assist in meeting the required end-customer fuel requirements.
- The NNSA Los Alamos Field Office completed a QAS-2 audit of the Power Supply Program. Out of the three findings identified one was closed in June. The remaining two findings are set to be closed by December 2013.

- Process Development
 - o Continued process development and testing on the new ultrasonic inspection station.
 - (b) (7)(F)
 - Continued work on procedures, tooling/fixtures and Material & Test Equipment.
 - o Completed a draft “Road Map to Diamond Stamping” that was presented at the PRT meeting. Comments are currently being incorporated. A final draft is expected to be completed by the end of the fiscal year.
 - o Continued (b) (7)(F) development for Heat Source Development Series #1 on the liners, strength members, and clads. Will present status and findings at the PRT meeting in July.
 - o Started shock tower operation training
 - o Validated Electrical-Tester is operational using surrogate material/parts.
 - o Installed and tested new sensors in O₂/H₂O monitors for welding and assembly operations.

2.2 Equipment

- Radioisotope Thermoelectric Generator - Assembly & Testing Facility (RTG-ATF)
 - o Received Certificate of Occupancy
 - o Completed all minor facility modifications related with MSA Pre-Start findings associated with construction activities. Routing closeout documentation for signature and records management.
- The (b) (7)(F)
 - o Completed closeout of all Pre-Starts findings. A Declaration Of Readiness memorandum has been sent to the Associate Director of Nuclear and High Hazard Operations to proceed with the system startup activities.
- Analytical Chemistry glove boxes (Pu Assay and Radiochemistry)
 - o Completed Zone 1 installation.
 - o Completed installation of Fire Skirting and Fire Foe tubing.
 - o A large window that contains two oval gloveports broke during the oval plug removal. A rush order was placed with manufacturer for a replacement window material (Safety Significant). They are expected to arrive in early July.
 - o The construction inspector identified an issue with the bolts that are used to mount the glovebox windows. To address the non-conformance, replacement of the bolts was deemed the best path forward. This will impact to the project schedule and the installation costs. Replacement of the 800 plus bolts will take approximately four days to complete.
 - o Started the Design Change Package (DCP) closeout activities as well as engaged the Management Self-Assessment (MSA) Team on assessment expectations. The MSA will begin upon replacement of the windows and bolts and completion of the DCP.
- SM-39 Development Laboratory
 - o Continued the Xenon leak testing process development.
 - o Continued to work the design and procurement for the Quartz tube assembly for furnace operations.

2.3 Issues

- None

2.4 Variance Analysis and Recovery Plan

- CPI: Spending deviated from planning basis due to addition of In-Scope scope within the RTG-ATF project, which required the utilization of night and overtime shifts to maintain scheduled completion dates. The Program will continue to carry this variance through project completion. At that time all construction related codes for the RTG-ATF will be closed and the project will be considered complete. As of July 1, 2013 all construction codes have been closed.

2.5 BCRs

- PSM-13-077: This BCR reflects the changes to the shipment schedule and the scope exchange to processing legacy material due to reduction of shipments. There is no cost impact associated with this BCR.

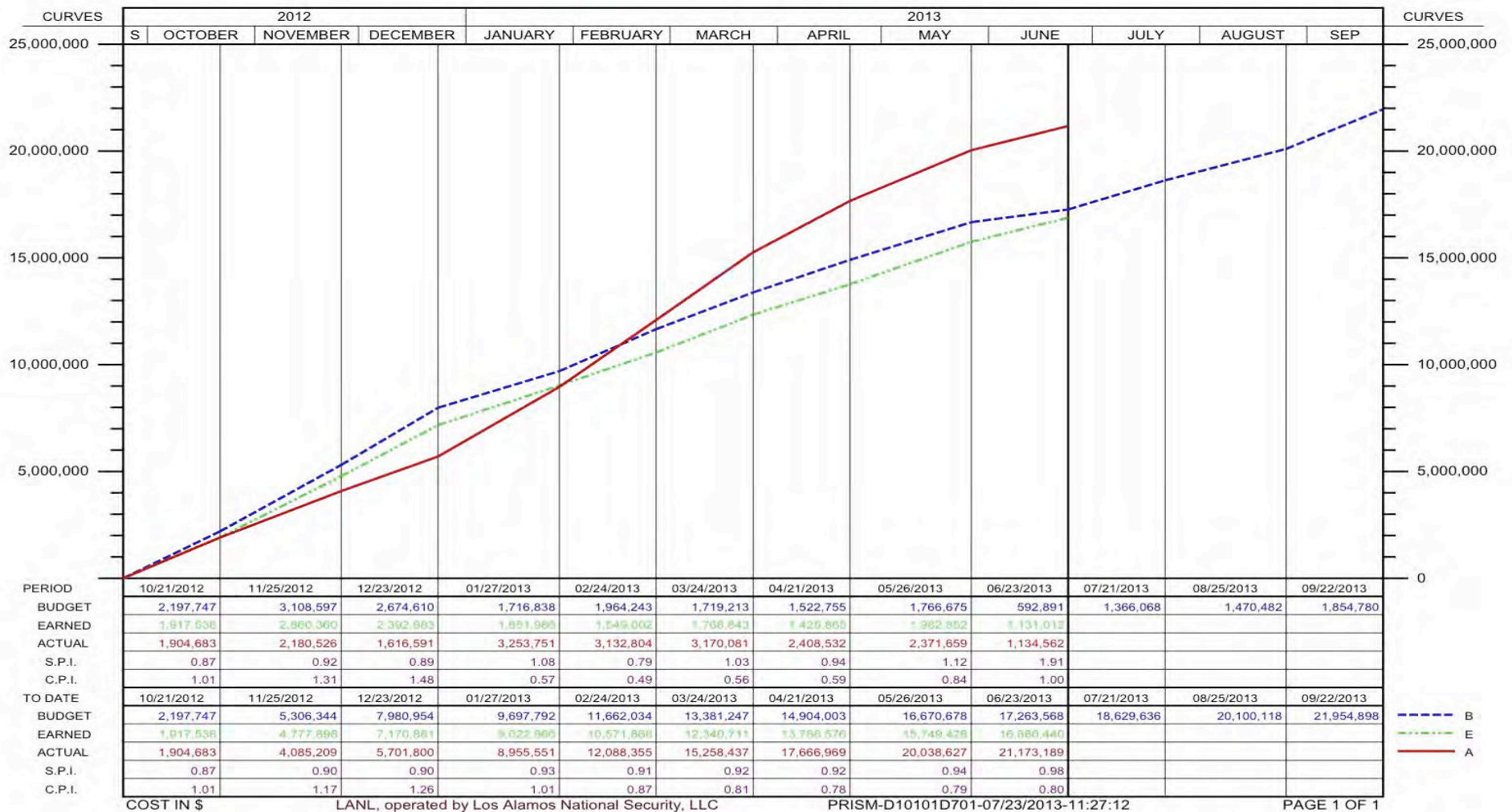
2.6 Risk Table

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 RTG manufacturing development. The plan to start hiring in FY13 for dedicated staffing will 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 RTG surveillance, NE-75, and other programs to make the best use of available staff. 2) Request LANL and LA Field Office management to allow for increase dose in staff assigned to this work. 3) Delay non-critical path activities until they become critical path for FPU.	Daily work planning meetings continue to ensure availability of staffing resources. Completed out-year resource loaded schedule through FY20. This schedule will be used for strategic hiring.
(b) (7)(F)	(b) (7)(F)	(b) (7)(F)	

2.7 Earned Value Metrics

PERFORMANCE S-CURVE

Reconstitution of Power Supply Manufacturing



3.0 Program Management and Support

3.1 Program Management

- Submitted pre-allocation zero matrix with sufficient detail to provide FY14 budget planning.

3.2 Support

- Document Control, Records Management, and Training
 - Supporting the review of all operations greater than 2300 grams.
 - A new and simplified Document Action Request form is available and the process is readied for broader implementation of the Document Review System. This process will be used in the review of all facility and operational documents as part of the restart of operations from Director's pause.
- Production Control
 - Provided M&TE and classified parts coordination support.
 - Continued to provide shop floor control and daily schedule status to Enduring Stockpile and Power Supply projects.
- Maintenance
 - Corrective Maintenance: Initiated work on the dri-vacuum system in the 300 area.
 - Preventative Maintenance: Completed preventative maintenance on six systems.
 - Work Management & Control: Continued to collect specific history and determine how to view, report, and analyze.
- Warehousing and Procurement
 - The procurement team successfully processed over 230 procurement requests for TA55 in June. 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, Pu Assay and Radio Chemistry, Foundry cold testing and Foundry Vacuum upgrades, and (b) (7)(F) upgrades.)
 - The Procurement team continued working with the line organization to ensure all end of year procurements are in place prior to system closure.
 - Identified quality issues with the latest shipment of glovebox gloves procured. The last order had a 25% fail rate. LANL is working to modify the GB Glove procurement specification and the corresponding receipt inspection plan. The goal is to make the inspection process less subjective. Additionally, LANL personnel are planning to visit the glovebox glove vendor later this summer.
- Calibration
 - 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

- Following an infraction in the 400 Area on May 23, operations were paused throughout the room where the infraction occurred. A thorough walk down of all processes in the room followed to assess the implementation of criticality safety limits, operator understanding of limits, and robustness of operational guidance. The investigative phase of that effort in the room where the infraction occurred was completed and as an extension of the work in the room where the infraction occurred, an extent of condition assessment was performed on a selection of fissile material operations throughout PF-4. 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.

3.4 Variance Analysis and Recovery Plan

- None

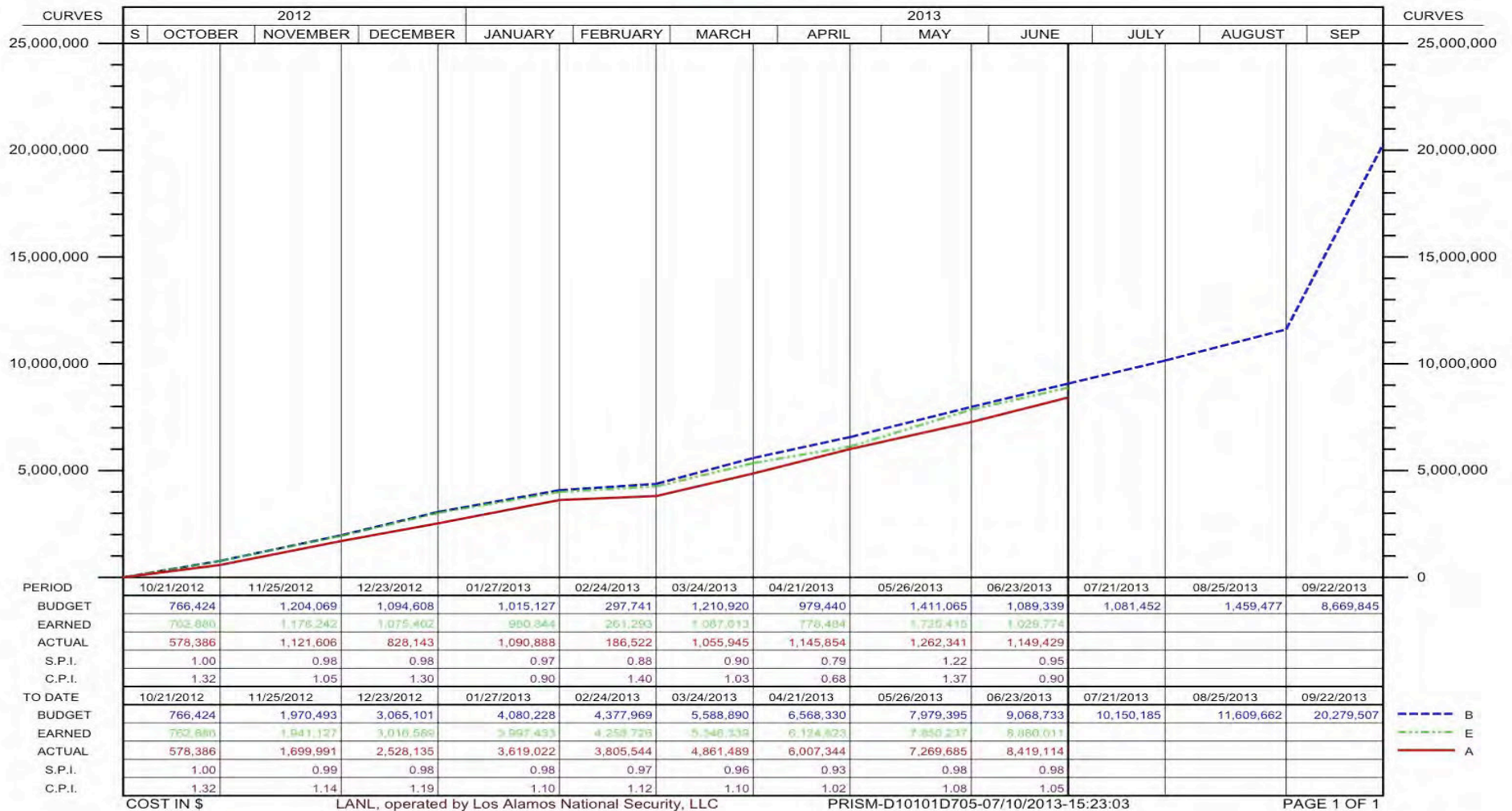
3.5 BCRs

- None

3.6 Earned Value Metrics

PERFORMANCE S-CURVE

Program Office



4.0 Facilities, Waste and Institutional Support

4.1 Technical Progress

- The trolley procedure, used for facility wide movements of material in the conveyor system, was paused based on worker input to correct strict verbatim compliance issues. The procedure was revised, validated, and approved via an immediate procedure change. It was released for operations to resume Wednesday 6/19/13 via a special Shift Order at 1000. A service center has been established within PF-3 to manage procedural changes.
- Procurement and Warehousing May 2013 Metrics Report
 - o The NPI-8 procurement team successfully processed over 280 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.
-

4.2 Equipment

- None.

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

- None

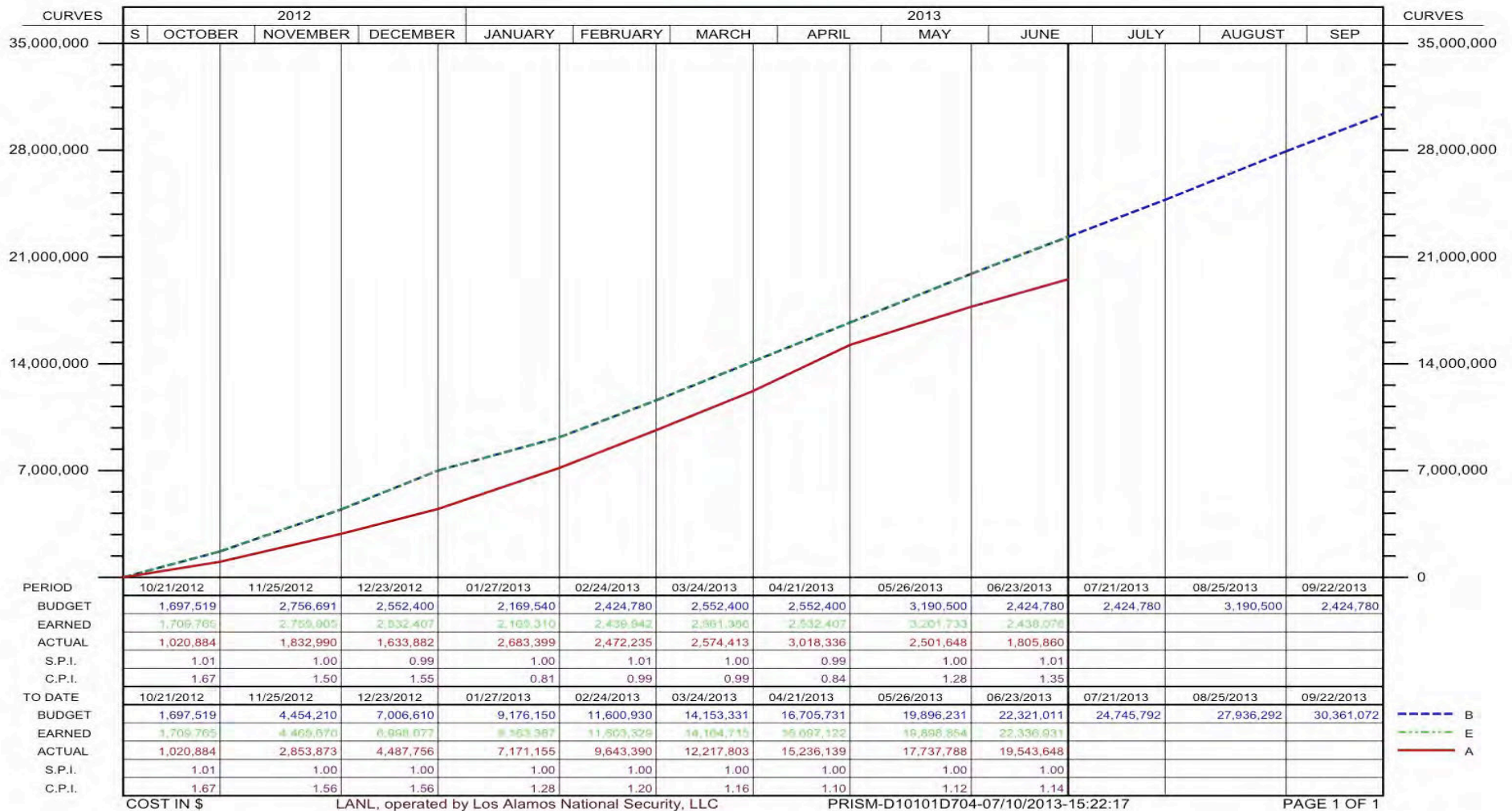
4.5 BCRs

- None

4.6 Earned Value Metrics

PERFORMANCE S-CURVE

Facility Infrastructure



5.0 LLNL

MRT 4749		GREEN	Perform Activities to Enable Plutonium Sustainment Goals		
1. Lead and manage the LLNL Plutonium Sustainment Program.					
2. (b) (7)(F)					
3. (b) (7)(F)					
4. (b) (7)(F)					
5. Sustain minimal “cold testing” on the Modern Foundry system to retain technology and staff for later deployment by NNSA programs.					
Work Package	L3 Milestone	Date	Completion Date	RGYB	
(b) (7)(F)	(b) (7)(F)	9/30/2013	February 2013	BLUE	
	(b) (7)(F)	7/30/2013		GREEN	
	(b) (7)(F)	3/31/2013	March 2013	BLUE	
	Begin setup of compatibility tests	9/30/2013		GREEN	
(b) (7)(F)					
(b) (7)(F)	(b) (7)(F)	12/31/2012	November 2012	BLUE	
	(b) (7)(F)	9/30/2013		BLUE	
Modern Foundry cold testing	Complete integrated test of material transport system	6/30/2013	December 2012	BLUE	

5.1 Technical Progress

-
-
-

(b) (7)(F)

5.2 Equipment

- None

5.3 Issues

- Compatibility testing
 - o Continue to work with LANL and NNSS on fielding test equipment at PF-4 and DAF.

5.4 Variance Analysis and Recovery Plan

- None

5.5 BCRs

- None

5.6 Risk Table

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

5.7 Earned Value Metrics

PERFORMANCE S-CURVE LLNL

