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Executive Summary

In July of 2012 the Plutonium Sustainment program at LANL completed or addressed the following high-level activities:

- 1) Completed milling operation of the first set of two parts from Lot 2 of Pu parts on DMU-35 mill. Parts were inspected and accepted by LANL DA. Parts are ready for assembly.
- 2) (b) (5), (b) (7)(F)
- 3) Completed the Software Quality Assurance Plan on the (b) (7)(F) System.
- 4) Supported Stockpile Management (SM) Execution Summit.
- 5) Supported Defense Programs FY 2012 – 2018 Weapon Program Review.

There are currently no major issues associated with achieving MRT L2 Milestones 4195-4198 or the relevant PBIs associated with Plutonium Sustainment.

There are no budget issues associated with FY12 final budget guidance. Table 1 identifies all Baseline Change Requests (BCRs) that were initiated, in process, or completed during the month.

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

Each of the 5 major LANL WBS elements is discussed in detail below with a section at the end that is provided by LLNL.

Table 1: July Baseline Change Requests

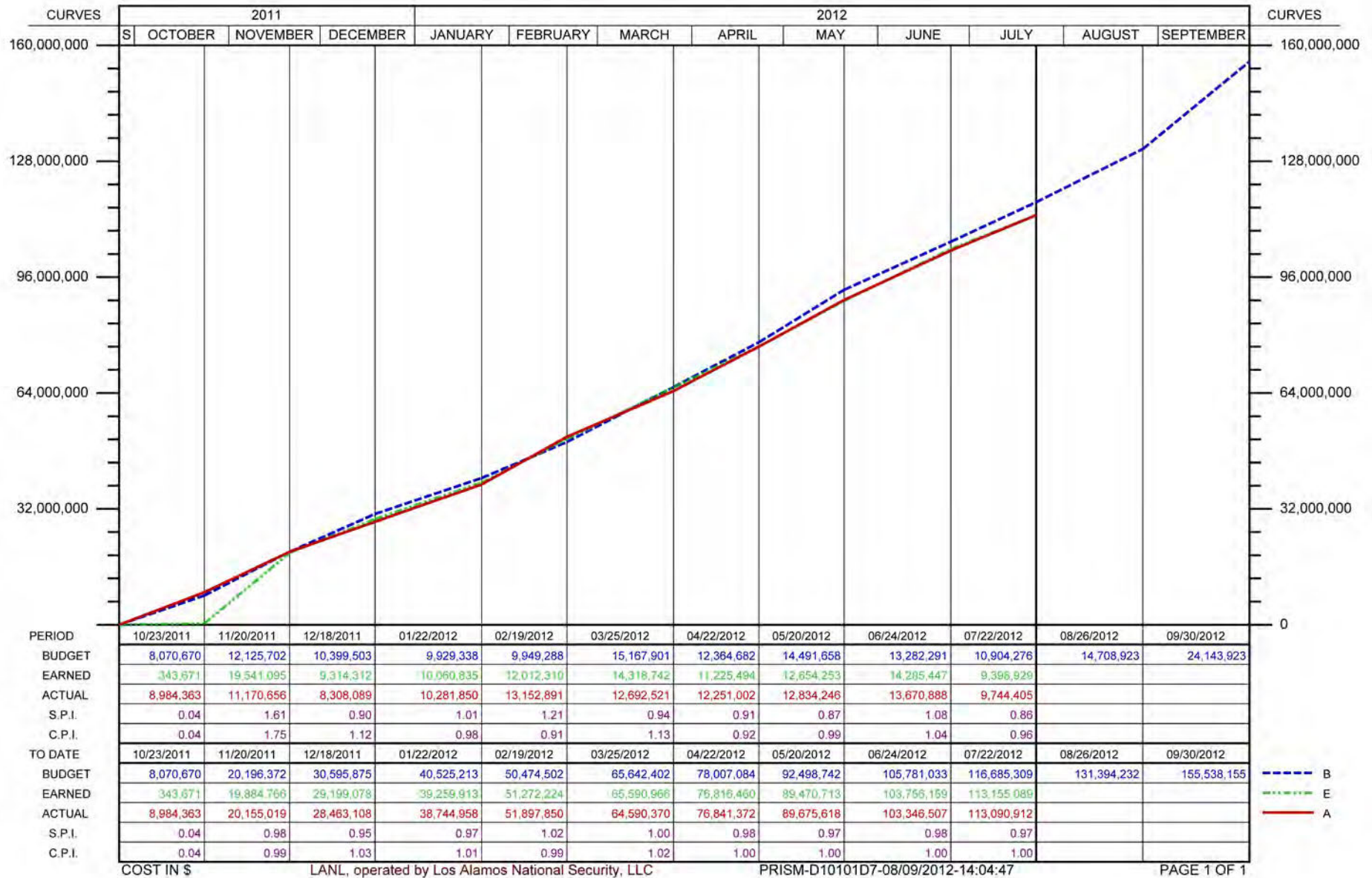
WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
Power Supply	PSM-12-032	Civil/Structural/Architectural - In scope scope changes	4/20/12	7/19/12	Cost/Scope	\$98K	3
Power Supply	PSM-12-033	Demo - Mechanical	4/20/12				
Power Supply	PSM-12-035	Scope Modification for Heat Source, Fabrication & Inspection	5/1/12	5/9/12	Scope	N/A	3
Pit Development	PSM-12-045	ER Line - CBOM Procurements to Reduce Schedule Risk	8/1/12		Cost/Scope		3
Pit Development	PSM-12-046	ER Line - Breaking Press Fab/MTS Design	8/6/12		Cost/Scope		3

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Earned Value Metrics

PERFORMANCE S-CURVE

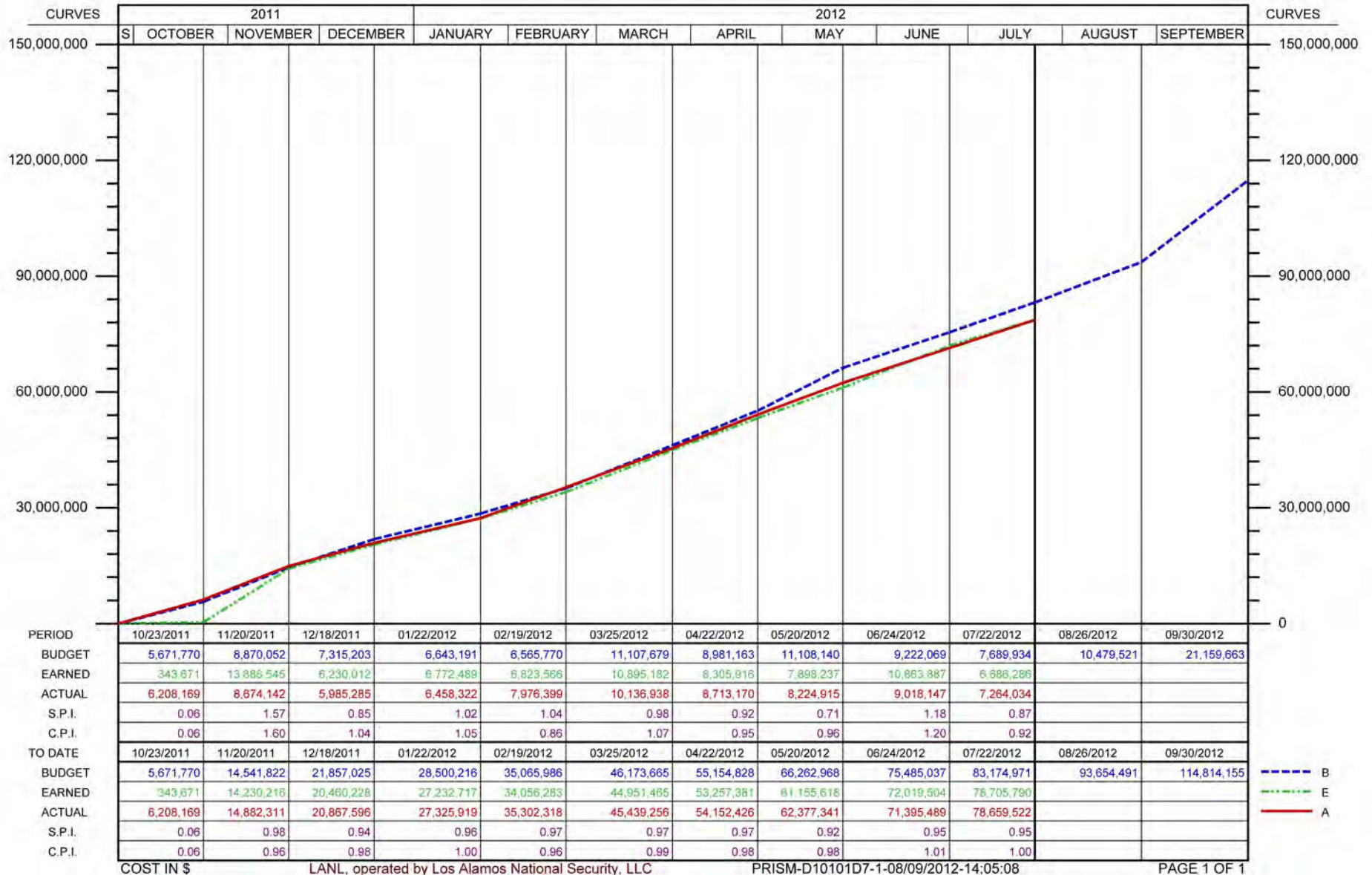
Pu Sustainment



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PERFORMANCE S-CURVE

Pu Sustainment W/O Facility Infrastructure



1.0 LANL - Pit Development

MRT 4196	GREEN	Perform Activities to Sustain Base Pit Material Processing and Fabrication Capability		
1. (b) (7)(F)				
2. Continue installation and upgrade to pit capability equipment per PEP				
3. (b) (7)(F)				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
Non-nuclear components necessary for an (b) (7)(F) are available for use.	July 13, 2012		June 13, 2012	BLUE
Suitable nuclear material is available as ER	September 21, 2012		May 14, 2012	BLUE
(b) (7)(F) documentation approved • Technical Specifications & Requirements • Functional & Operations Requirements • Cold System Test Plan	September 21, 2012	TS&R Approved by PMB/WB F&OR Approved by PMB/WB	June 27, 2012 June 27, 2012	GREEN
(b) (7)(F) Corrective Maintenance Complete	June 29, 2012	Corrective Maintenance completed. Weld performed	June 28, 2012	BLUE
Preparation Unit Installed	August 14, 2012	Post installation operation demonstrated on part	June 26, 2012	BLUE
Production Strategy and TRL/MRL assessment	September 30, 2012			GREEN

1.1 Technical Progress

- (b) (5), (b) (7)(F)
- (b) (7)(F)
- Started outer contour inspection on the CMM.
- Completed a draft of the MRL and TRL stages and completion criteria that apply to a legacy pit demonstration.
- Performed (b) (7)(F) on test specimens in preparation of (b) (7)(F)

1.2 Equipment

- (b) (7)(F)
 - o The glovebox boot and O-ring designs were completed.
 - o Boot procurement process started.
 - o Software Quality Assurance Plan completed
- (b) (7)(F)
 - o On June 28, 2012, (b) (7)(F) successfully performed a weld. Milestone met.

- o Assembling evidence package for MRT4196 closure documentation
- Surface Preparation
 - o Performed functional testing of the unit with a component on June 26, 2012. Milestone met
 - o Assembling evidence package for MRT4196 closure documentation

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

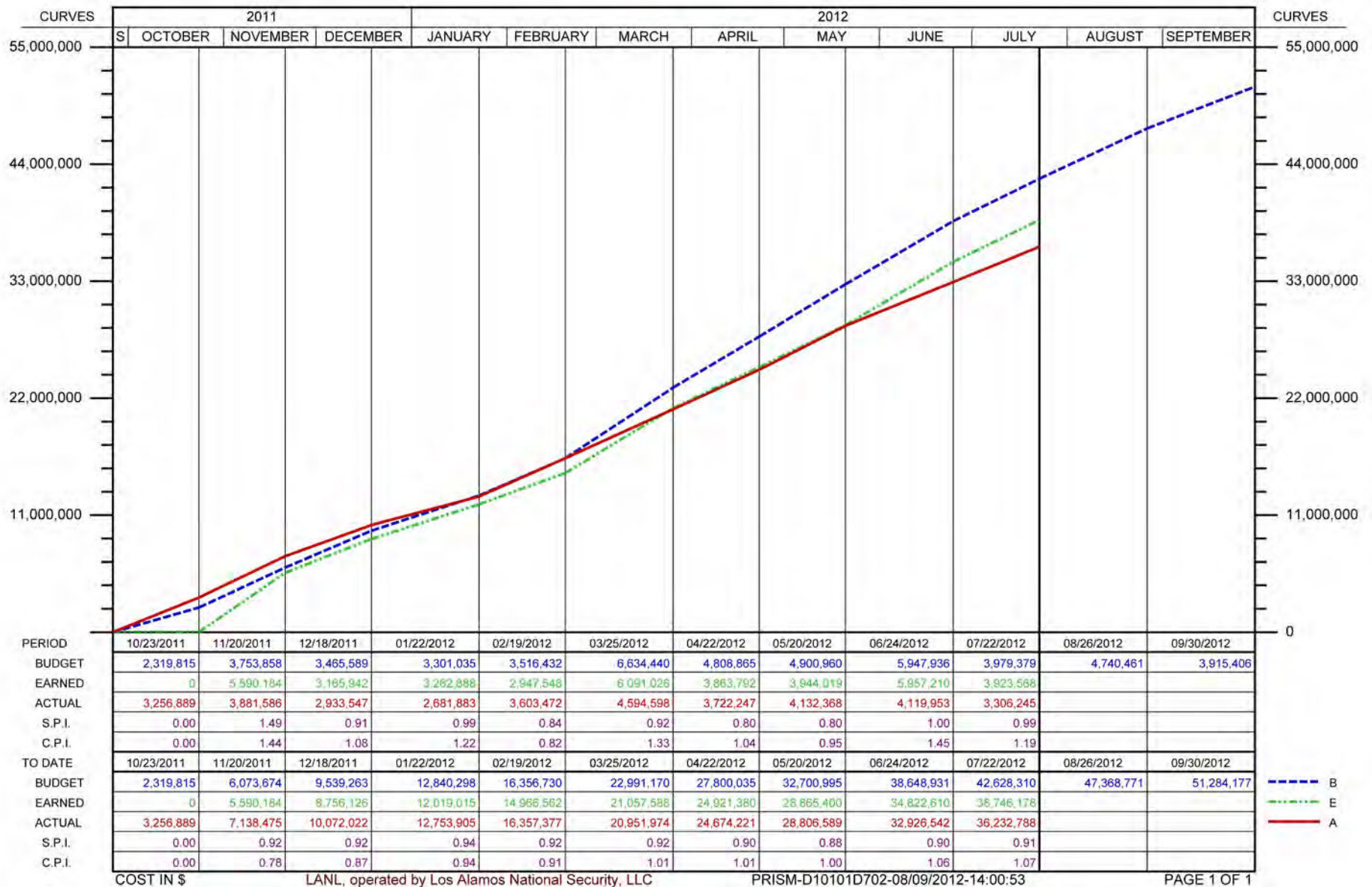
- None

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1.6 Earned Value Metrics

PERFORMANCE S-CURVE

Pit Manufacturing



2.0 LANL – Experimental Component

4198	GREEN	Perform activities to sustain base pit material processing and fabrication capability through Experimental Component Fabrication		
1. Experimental Component Fabrication and Shipment of Gemini / Pollux in accordance with PEP but no later than September 30, 2012				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
Start Cold Machining	January 10, 2012		Nov 18, 2011	BLUE
Start Hot Machining	February 21, 2012		March 23, 2012	BLUE
Casting Complete	February 27, 2012		February 27, 2012	BLUE
Complete Castor Sub-Assembly	May 3, 2012		May 31, 2012	BLUE
Start Hot Development Assembly	May 7, 2012	First assembly chosen as a shipping fixture test in lieu of hot assembly.	May 14, 2012	BLUE
Complete Machining Lot 1 – DEV	June 14, 2012	MET-2 has elected not to perform a (b) (7)(F)		BLACK
Complete Machining Lot 2 – Pollux	August 1, 2012		July 27, 2012	BLUE
Start Pollux Assembly	August 13, 2012			GREEN
Pollux Complete	September 6, 2012			GREEN

2.1 Technical Progress

- Completed milling operation of the first set of two parts from Lot 2 of Pu parts on DMU-35 mill. Parts were inspected and accepted by LANL DA. Parts are ready for assembly.
- Completed (b) (7)(F) machining the second set of two parts from Lot 2 of Pu parts on (b) (7)(F). Parts were inspected and accepted by LANL DA. Parts are ready for milling operation, if needed.
- Completed unpacking Castor at DAF.

2.2 Equipment

- Completed installation of on machine probing on (b) (7)(F).

2.3 Issues

- Delay in non-nuclear components for the Pollux assembly from the Gemini Project team has resulted in a 3-week delay in the Pollux assembly. While we may still meet the FY12 shipment date, it has pushed the back-up assembly into October thus presenting a very significant increase in risk to the milestone. The milestone is being refined at this point to reflect the preferred technical approach that allows for shipping in October. This would maintain the overall Gemini project schedule while minimizing technical risk.
- Compressed schedule will require overtime minimizing the schedule risk.

2.4 Variance Analysis and Recovery Plan

- SPI – Decision to forego the development build has resulted in a 9% schedule variance.
- CPI – Line organizations have revised the cost estimate for the remaining scope for Pollux. Additional budget will be made available from Pu Sustainment reserve. No BCR is planned and a variance has occurred.

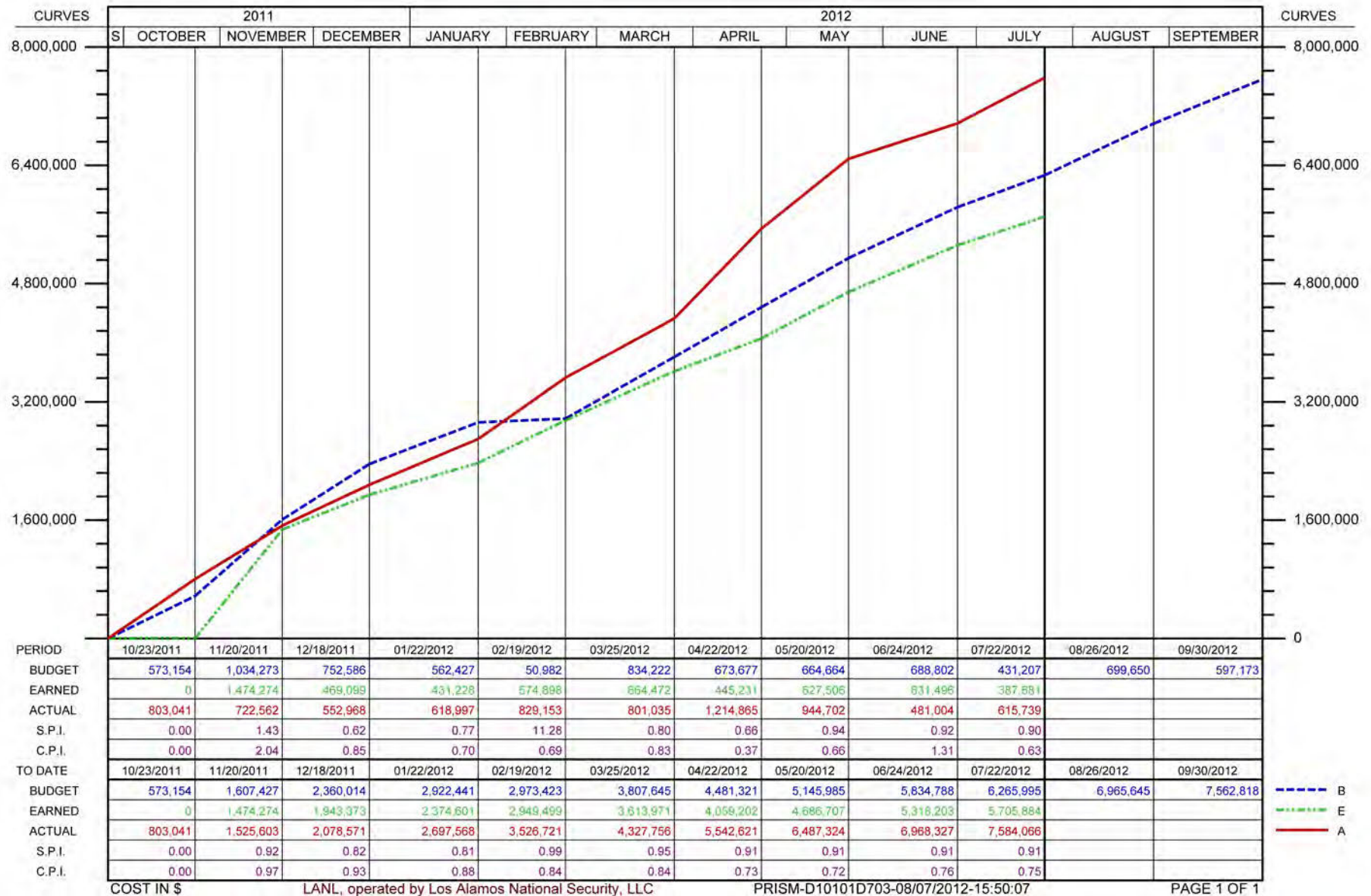
2.5 BCRs

- None

2.6 Earned Value Metrics

PERFORMANCE S-CURVE

Experimental Component Manufacturing



3.0 LANL - Power Supply

4195	BLUE	Install the Power Supply Assembly Area Equipment and Upgrades per the FY2012 Power Supply PEP		
1. Begin construction on the PSAA by March 31, 2012. 2. Start installation of the Analytical Chemistry GBs by June 30, 2012. 3. Start installation of the (b) (7)(F) by June 30, 2012.				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
Start Construction – Capital (PSAA)	December 15, 2011		Dec 7, 2011	BLUE
Start Construction – Facility (PSAA)	December 15, 2011		Dec 7, 2011	BLUE
GB-1240 - Construction Field Start (Pu Assay)	March 1, 2012		May 7, 2012	BLUE
GB-1241 - Construction Field Start (Radiochemistry)	March 9, 2012		May 7, 2012	BLUE
Mobilize and Field Start (b) (7)(F)	June 14, 2012		April 30, 2012	BLUE

4197	BLUE	Complete FY 2012 Power Supply material recovery activities IAW the Plutonium Sustainment PEP		
1. Dismantle lesser of 480 units or 95% of the (b) (7)(F) items received by June 30, 2012 2. Recover and store the oxide by Sept 30, 2012				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
Material Recovery Complete Shipment #1	October 18, 2011		Oct 18, 2012	BLUE
Material Recovery Complete Shipment #2	January 4, 2012		Dec 22, 2011	BLUE
Material Recovery Complete Shipment #3	March 8, 2012		Feb 15, 2012	BLUE
Material Recovery Complete Shipment #4	April 25, 2012		Mar 15, 2012	BLUE
Material Recovery Complete Shipment #5	June 27, 2012		June 21, 2012	BLUE

3.1 Technical Progress

- Material Recovery
 - o Shipment #6 was received in July and will be part of the FY13 harvesting milestone.
 - o All material received before June 30, 2012 has been recovered (milestone 4197 is complete)

3.2 Equipment

- Power Supply Assembly Area (PSAA)
 - o Construction continues and is on track.
 - o Completed new concrete placement of the roof for the source storage area.
 - o Continue construction of electrical primary service raceways to the ground floor of PF-5.
 - o Completed excavation from the duct-back to the switch gear pad.
 - o Completed the rebar placement for the new Argon tank and gas bottle pad.
- The (b) (7)(F)

- o Started installation (anchoring and utility hook-up).
- Analytical Chemistry gloveboxes (Pu Assay and Radiochemistry)
 - o Both gloveboxes are received and moved into PF-4.
- SM-39 Development Laboratory
 - o Scheduled electricity installation for early August.

3.3 Issues

- None

3.4 Variance Analysis and Recovery Plan

- None

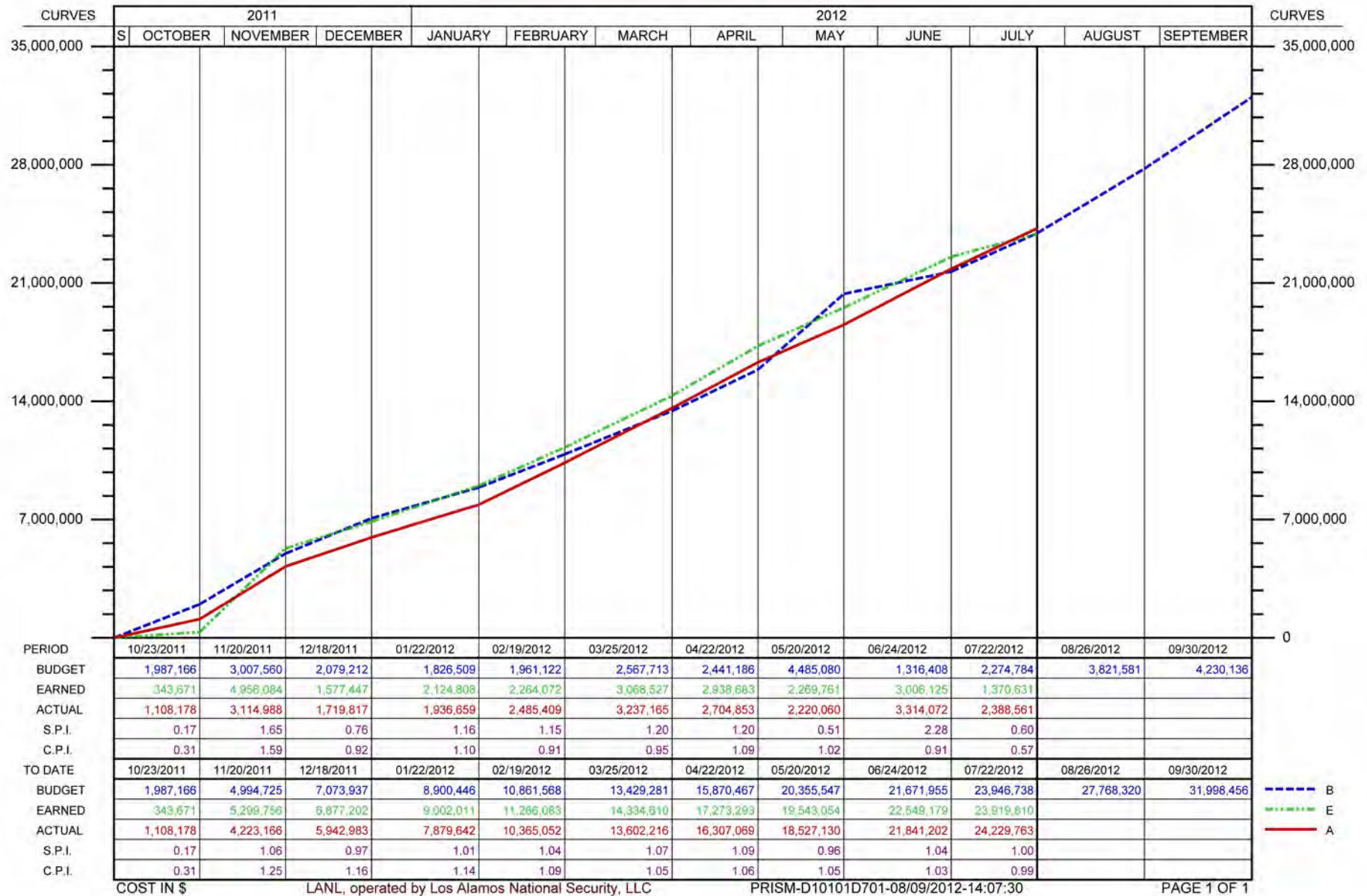
3.5 BCRs

- None

3.6 Earned Value Metrics

PERFORMANCE S-CURVE

Reconstitution of Power Supply Manufacturing



4.0 Program Management and Support

4.1 Technical Progress

- Completed draft work package across the portfolio for Fiscal Year 2013.
- Continued budget planning for Fiscal Year 2013.
- Completed Non-Nuclear Component Manufacturing Evaluation.
- Supported Stockpile Management (SM) Execution Summit.
- Supported Defense Programs FY 2012 – 2018 Weapon Program Review.

4.2 Equipment

- None

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

- None

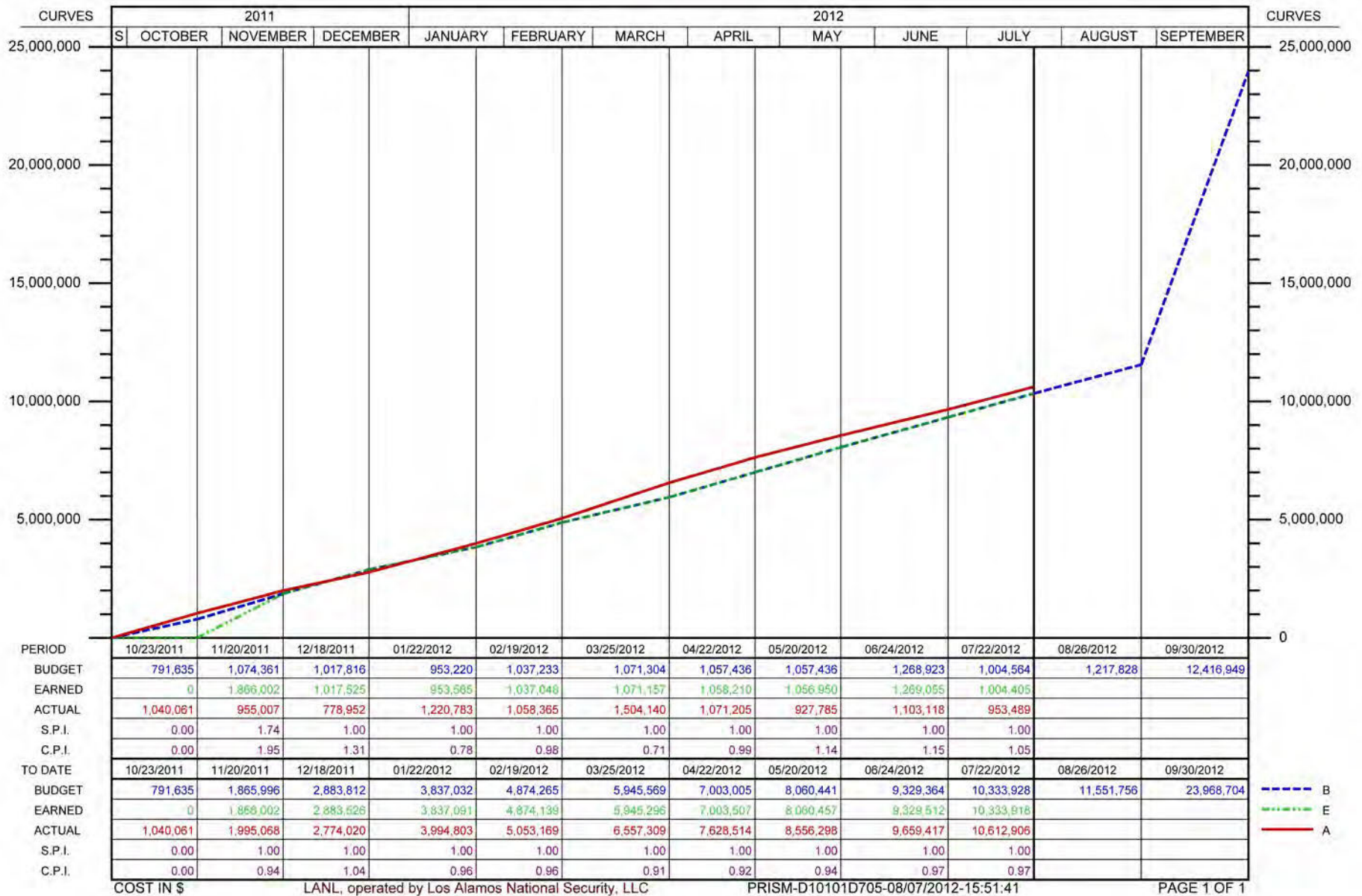
4.5 BCRs

- None

4.6 Earned Value Metrics

PERFORMANCE S-CURVE

Program Office



5.0 Facilities, Waste and Institutional Support

5.1 Technical Progress

- PF-4 Facility Availability: July 97.84%
 - o 100 Area: 97.14%
 - o 200 Area: 98.94%
 - o 300 Area: 100%
 - o 400 Area: 95.29%

5.2 Equipment

- None

5.3 Issues

- None

5.4 Variance Analysis and Recovery Plan

- None

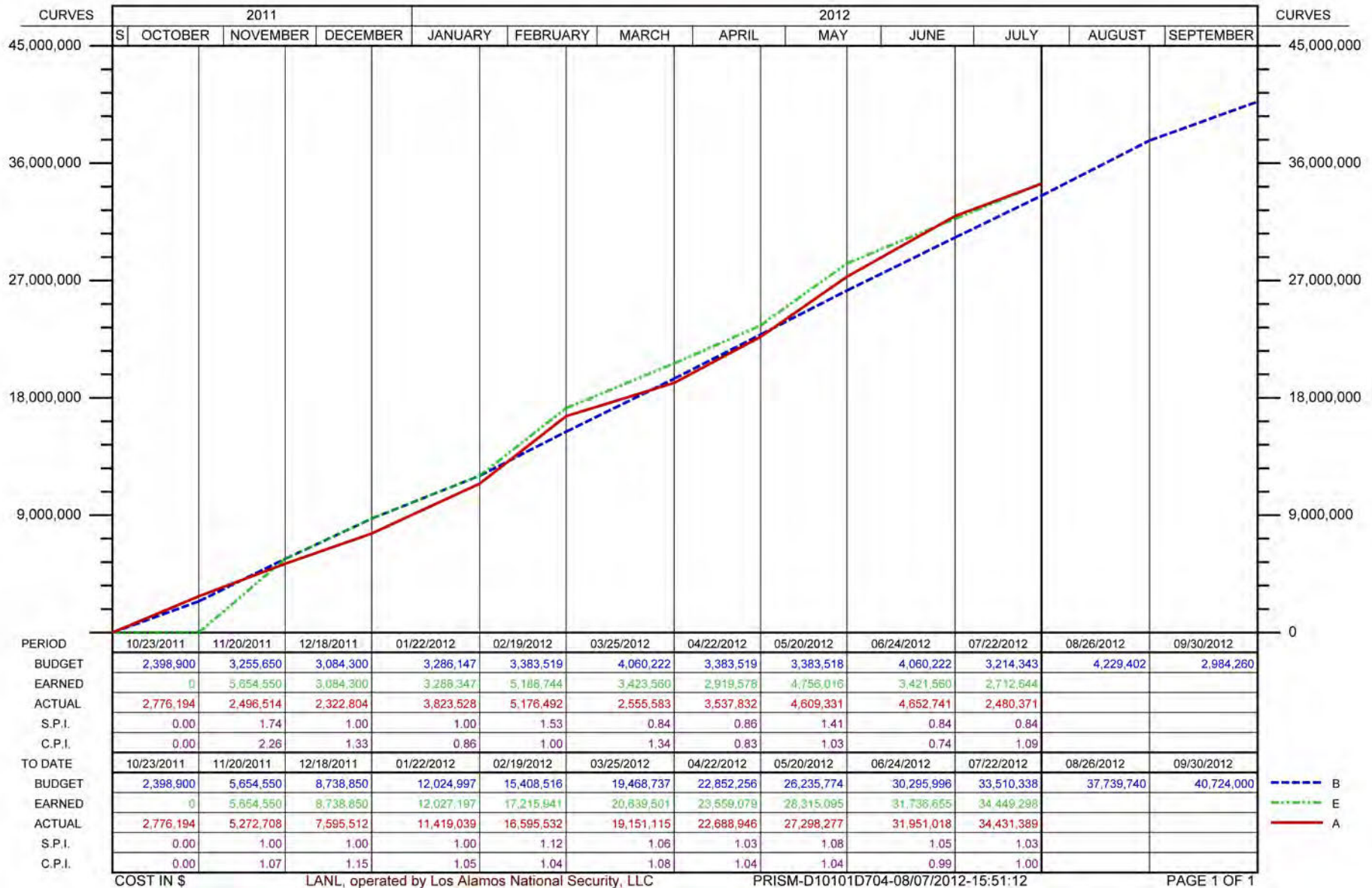
5.5 BCRs

- None

5.6 Earned Value Metrics

PERFORMANCE S-CURVE

Facility Infrastructure



6.0 LLNL

MRT 4196	GREEN	Perform Activities to Sustain Base Pit Material Processing and Fabrication Capability		
1. (b) (7)(F)				
2. Perform initial cold testing of modern foundry				
3.				
4. No later then June 30, 2012, Package and Ship Pu metal to LANL				
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB
LLNL Tasks to supports FY2013 (b) (7)(F)	9/30/2013	Design Definition complete for (b) (7)(F) Working chemistry specification		GREEN
Initial cold testing of modern foundry (b) (7)(F)	9/30/2012	Several systems have been cold tested		GREEN
	9/30/2012	Machining In-Progress		GREEN
Package and Ship Pu metal to LANL	6/30/2012	Shipments completed	6/28/2012	BLUE

6.1 Technical Progress

- IPT held a technical collaboration with a vendor for non-nuclear material. LLNL and LANL provided technical experts and discussed material specification requirements with the vendor. Recognizing that the historical specification is not producible, the goal was to get as close to the specification as possible in order to be certifiable.
- The (b) (7)(F) inspection fixture sent to LANL. Work continues on writing (b) (7)(F) inspection program. Inspection procedure has been approved for use at LANL.
- (b) (7)(F)
- To verify the previous test results, LLNL prepared additional test samples using the (b) (7)(F). These samples are currently being evaluated for metallurgical properties.
- Additional parts have been prepared from other sources for shipment to LANL for ER feed.

6.2 Equipment

- Modern Foundry:
 - Continued verification and testing of the modern foundry control system and also started the completion of the ventilation piping for all gloveboxes. The AHJ inspection and wiring verification of the induction power supply and controller for the casting furnace was completed. Although the AHJ inspection of the shear and Press controller was complete the start-up of the press and shear has an

error message which will require troubleshooting. We expect to start heat –up of the mold and die heaters in August.

6.3 Issues

- None

6.4 Variance Analysis and Recovery Plan

- [REDACTED] (b) (7)(F)
[REDACTED]
- Recovery Plan – Full staffing in August and September will allow completion of projects and will fully use the funds allocated.

6.5 BCRs

- None

6.6 Earned Value Metrics

PERFORMANCE S-CURVE

LLNL

