

LA-CP-

Los Alamos Controlled Publication;
distribution is limited.

Title: Los Alamos National Laboratory Plutonium Sustainment
Monthly Program Report November 2014

Author(s): (b) (6)

Intended for: Report

DISTRIBUTION LIMITATION STATEMENT

Further dissemination authorized to the Department of Energy and DOE contractors only; other requests shall be approved by the originating facility or higher DOE programmatic authority.

~~Unclassified Controlled Nuclear Information (UCNI)~~

~~Not for public dissemination.~~

~~DOCUMENT REVIEW~~

~~Unauthorized dissemination subject to civil and criminal sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).~~

~~Reviewing Official: _____~~

~~Date: _____~~

~~Guidance Used: _____~~

~~(List all UCNI guidance used)~~



Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the Los Alamos National Security, LLC for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396. By acceptance of this article, the publisher recognizes that the U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

Form 1756a (7/06)

LANL Executive Summary.....	4
LANL Response to October NNSA Comments.....	4
Table 1: November Baseline Change Requests	5
1.0 LANL - Pit Development	7
1.1 Technical Progress	8
1.2 Equipment	8
1.3 Issues.....	8
1.4 Variance Analysis and Recovery Plan	8
1.5 BCRs	8
1.6 Risk Table	9
1.7 Earned Value Metrics.....	10
2.0 LANL - Power Supply	12
2.1 Technical Progress	12
2.2 Equipment	12
2.3 Issues.....	13
2.4 Variance Analysis and Recovery Plan	13
2.5 BCRs	13
2.6 Risk Table	14
2.7 Earned Value Metrics.....	15
3.0 Program and Manufacturing Support Services.....	16
3.1 Program Management	16
3.2 Support.....	16
3.3 Issues.....	18
3.4 Variance Analysis and Recovery Plan	18
3.5 BCRs	18
3.6 Earned Value Metrics.....	19
4.0 Facilities and Readiness/Waste and Institutional Support	20
4.1 Technical Progress	20
4.2 Equipment	20
4.3 Issues.....	20
4.4 Variance Analysis and Recovery Plan	20
4.5 BCRs	20
4.6 Earned Value Metrics.....	21

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 issued allowing previously resumed operations to operate in PF-4 (primarily Pu238 and small sample testing related). The majority of Pu239 operations require a series of readiness assessments prior to returning to operational status.

The majority of plutonium operations have been (b) (7)(F)

. A funding model including programmatic and RTBF support and a resource-loaded schedule has been developed. The readiness project team will provide a separate monthly report as a follow-up to this report.

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

- 1) Completed the (b) (7)(F) readiness Management Self-Assessment (MSA) and Red Team evaluation. Began closing out MSA findings. Continue to perform criticality safety reviews.
- 2) The (b) (7)(F) for heat source fabrication have been installed in PF4. Testing and debugging the new controllers is now on-going.
- 3) Preparation for the first demonstration run of oxide production (Demo 1) is complete. The first Fuel Storage Outer (FSO) was opened using the new FSO opener without issue. All support equipment for Demo 1 is in place and the glovebox has been cleaned.

All three proposed NNSA Level 2 Milestones (MRT 5366, 5367, and 5373) associated with Plutonium Sustainment are on track for success in FY15.

The earned value metrics overall for LANL are within acceptable thresholds.

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

LANL Response to October NNSA Comments

The FY15 monthly financial minifile for October was a LANL generated document based on the FY14 minifile. The NNSA provided minifile will be used for November and the remainder of FY15. There are some minor discrepancies in the budget data as the funding allocations catch up to the BCRs.

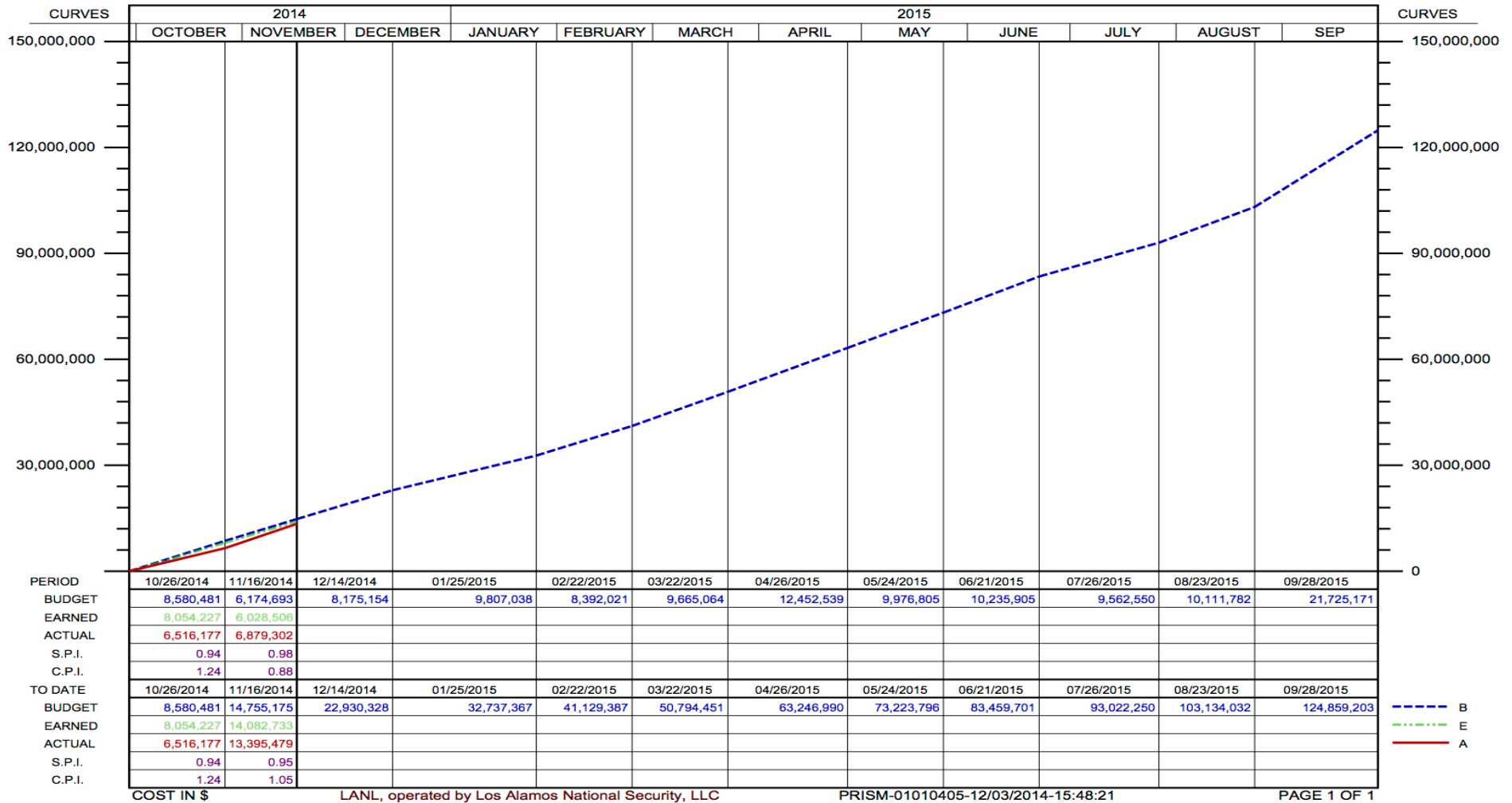
Table 1: November Baseline Change Requests

WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
Pit Equipment	PSM-15-002	ER-Line Baseline	11/17/14	In process	Schedule	none	3
Pit Equipment	PSM-15-004	(b) (7)(F)	11/17/14	In process	Schedule/Cost	TBD	3
Pit Equipment	PSM-15-005	Foundry D&D Baseline	11/17/14	In process	Schedule	none	3
Readiness/ Production Support	PSM-15-015	Redistribution of KKRA IFIT Funds in to Pu Sustainment	11/23/14	12/8/14	Scope/ Schedule/Cost	TBD	3
Project Controls	PSM-15-017	Correct Financial Periods in P6	12/1/14	12/2/14	Time phasing	none	4

Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05 - Pu Sustainment



[NOTE: September 2015 includes 6% FY16 carryover holdback of \$7.496M in addition to the five major WBS elements.]

1.0 LANL - Pit Development

MRT 5366		GREEN	Complete FY 2015 Key Equipment Upgrades and Replacement Activities		
Continue equipment upgrade and replacement activities including the following: 1. Receive Precision Measurement Machines (PMM) #1 and #2 (Infinity) at LANL 2. Release PMM #1 glove box fabrication design to procurement 3. Complete factory acceptance testing for (b) (7)(F) System #1 4. Complete decontamination and decommissioning (D&D) of 2 glove boxes (XB's) (assuming a disposition path is available at LANL) 5. Start external installation for chlorine supply room 6. Start glove box fabrication of (b) (7)(F)					
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB	
Conduct Factory Acceptance Test on Infinity PMM#1	March 27, 2015			GREEN	
Receive PMM#1	May 29, 2015			GREEN	
Conduct Factory Acceptance Test on Infinity PMM#2	May 15, 2015			GREEN	
Receive PMM#2	July 24, 2015			GREEN	
Develop Checklist for Glovebox Mockup for PMM#1	January 2, 2015	On track for December completion		GREEN	
Approve Final Glovebox Mockup for PMM#1	June 26, 2015			GREEN	
Approve PMM#1 Glovebox Fabrication Design for Construction (Release for procurement) (b) (7)(F)	September 11, 2015			GREEN	
(b) (7)(F)	May 29, 2015			GREEN	
(b) (7)(F)	September 11, 2015			GREEN	
Start D&D of 2 XBs (gloveboxes)	January 9, 2015			GREEN	
2 XBs (gloveboxes) removed from room	May 15, 2015			GREEN	
IBC reports of completion of D&D of XBs	June 19, 2015			GREEN	
Start equipment procurement for Chlorine Supply Room	November 7, 2014	Completed	October 29, 2014	BLUE	
Complete equipment procurement for Chlorine Supply Room	February 27, 2015			GREEN	
Start Construction for Chlorine Supply Room	March 20, 2015			GREEN	
Procurement (ASM) issues request for proposal (RFP) for (b) (7)(F) Glovebox	January 30, 2015			GREEN	
Kickoff meeting with vendor for (b) (7)(F) Glovebox	March 13, 2015			GREEN	
Start (b) (7)(F) Glovebox fabrication	April 3, 2015			GREEN	

1.1 Technical Progress

- (b) (7)(F)
- The majority of pit manufacturing development is focused on readiness related activities. Accordingly, most of the budget and scope is captured in a “level of effort” activity.

1.2 Equipment

- The plan to meet the grading criterion L2 milestone MRT 5366 includes the following by September 30, 2015:
 1. Receive Precision Measurement Machines (PMM) #1 and #2 (Infinity) at LANL
 2. Release PMM #1 glove box fabrication design to procurement.
 3. Complete factory acceptance testing for (b) (7)(F)
 4. Complete decontamination and decommissioning (D&D) of 2 glove boxes (XB's) (assuming a disposition path is available to LANL).
 5. Start external installation for chlorine supply room.
 6. Start glove box fabrication of (b) (7)(F).
- Receive Precision Measurement Machines (PMM) #1 and #2 (Infinity) at LANL (b) (3)
 - Continued preparation of the factory acceptance testing document.
- Release PMM #1 glove box fabrication design to procurement
 - Continued to develop the checklist for mockup glovebox acceptance.
- (b) (7)(F) (b) (3)
 - Began evaluating whether (b) (7)(F) will be installed in PF-4 or SM-39 and the impact, if any, on (b) (7)(F)
- Decontamination and Decommissioning of (b) (7)(F) (b) (3)
 - IWDs for D&D under preparation.
- Chlorine Distribution & Detection System (b) (3)
 - Scrubber design nearing completion.
- (b) (7)(F) (b) (3)

1.3 Issues

- None

Unclassified Controlled Nuclear Information

1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- PSM-15-002: This BCR establishes the baseline Primavera schedule for the ER line upgrades project based on the Continuing Resolution budget.
- PSM-15-004: This BCR funds the PF-4 location study for (b) (7)(F) to conclude at the end of January.
- PSM-15-005: This BCR establishes the baseline Primavera schedule for the Foundry D&D project based on the Continuing Resolution budget.

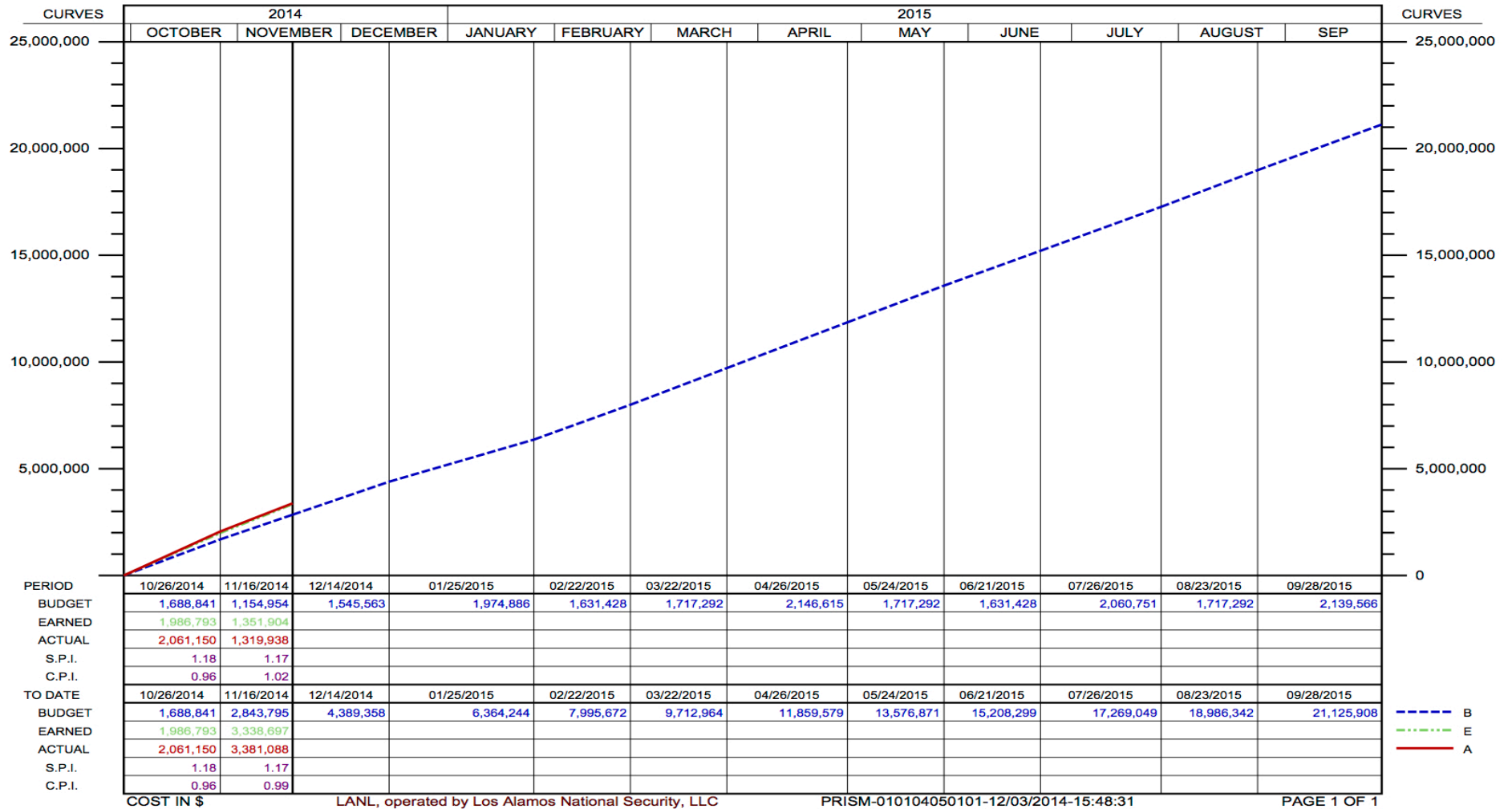
1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(b) (7)(F)	If operations are not resumed in about mid-July when pits are hoped to be built, the workforce will continue to focus on resuming operations by supporting readiness activities, supporting equipment investments, and exercising the flow sheet with surrogates if possible. When operations are resumed an (b) (7)(F)	(b) (7)(F) Management Self Assessment is underway with the Red Team Review scheduled for November and the Contractor Readiness Assessment scheduled to begin in December 2014. Plans of Action are being developed for Machining and the Pit Flowsheet Readiness areas.

1.7 Earned Value Metrics

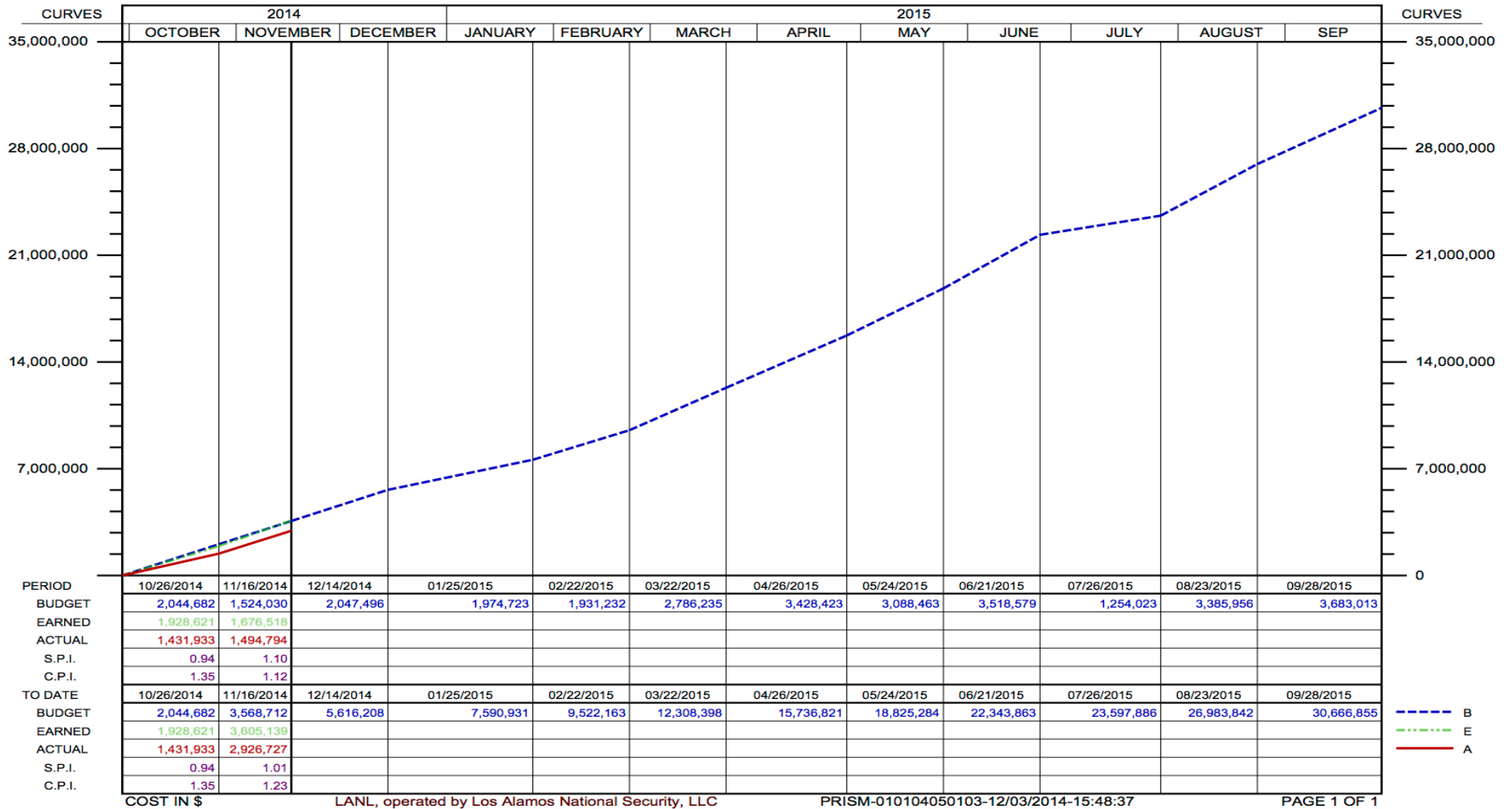
PERFORMANCE S-CURVE

01.01.04.05.01.01 - Pit Manufacturing and Design D



UNCLASSIFIED

PERFORMANCE S-CURVE 01.01.04.05.01.03- Pit Manufacturing Equipment



2.0 LANL - Power Supply

MRT 5367		GREEN	Complete FY 2015 Power Supply Development Activities		
Continue the development of Power Supply production capability by completing one functional Atmosphere Control Box (ACB) Line in Assembly Test Facility (ATF) including the following:					
1. Install prototype Xenon backfill station in ACB line					
2. Install prototype Xenon leak check station in Assembly Test Facility (ATF)					
3. Manufacture surrogate Power Supply using KCP provided (b) (7)(F) components					
L3 Milestone	Baseline Date	Status/Comments	Completion Date	RGYB	
Install prototype Xenon backfill station in ACB line	September 30, 2015	Delivery to LANL expected in January, 2015		GREEN	
Install prototype Xenon leak check station in ATF	September 30, 2015			GREEN	
Manufacture surrogate Power Supply using KCP-provided DEV 2 components	September 30, 2015	An ICO has been issued to KCP by the DA for procurement of material to make the DEV2 parts		GREEN	

2.1 Technical Progress

- LANL participated in the Development Lot 2/3 full drawing review at Kansas City. The drawings incorporated all the changes determined during Development Lot 1 testing and analysis. Special "one off" parts (for very specific tests) were discussed and drawings planned for these items.
- In conjunction with the drawing review, a product specification review was also accomplished. All components were reviewed, as well as assembly and weld specifications. SNL took the action to update or complete product specifications.
- An electrical tester review for LANL activities was also accomplished. The product specification was stepped through line-by-line to ensure that the tester being designed will have sufficient flexibility to meet all the needs. It appears the design is right on track. A surrogate power supply was delivered from LANL to KCP to aid in fixture design.
- The xenon backfill station has been completed at the vendor. A factory acceptance test has been scheduled for December with shipping to occur immediately after.
- FSO 520/FSI 0048 has been opened for oxide production demonstration run one (Demo 1). The new equipment introduced into the line to support openings worked perfectly. All support equipment for Demo 1 (filters, small calcine furnace, reagents) as well as cleaning the box has been accomplished. Vials for samples to be sent to Analytical Chemistry have also been introduced.
- The heat source liner (D04) testing for Department of Transportation special forms sealed source certification (49CFR 173.469) is two-thirds complete without issue. It is expected to be finished in January.

2.2 Equipment

- The (b) (7)(F) or heat source fabrication have been installed in PF4. Testing and debugging the new controllers (an expected activity) is now on-going.
- Major pieces of the Xenon leak check station have arrived. Drawings to support the design have been completed and valves, gauges, and tubing have been ordered.
- Furnaces for performing the air fired process step on the Min-K have been ordered. Modifications to the facility (pulling 208V) have been planned and should be completed in January when the furnaces should arrive.

2.3 Issues

- NNSA and SNL systems have provided LANL with a challenge to produce a live unit by Baseline Design Review (BDR). LANL has agreed to give their best effort to meet the challenge. All groups at LANL that have a role have been contacted and a comprehensive activity list has been developed. The unit to be produced and the tests to be accomplished have been defined in a joint SNL-LANL-KCP document (GE2A3752) published by SNL.

2.4 Variance Analysis and Recovery Plan

- None

2.5 BCRs

- None

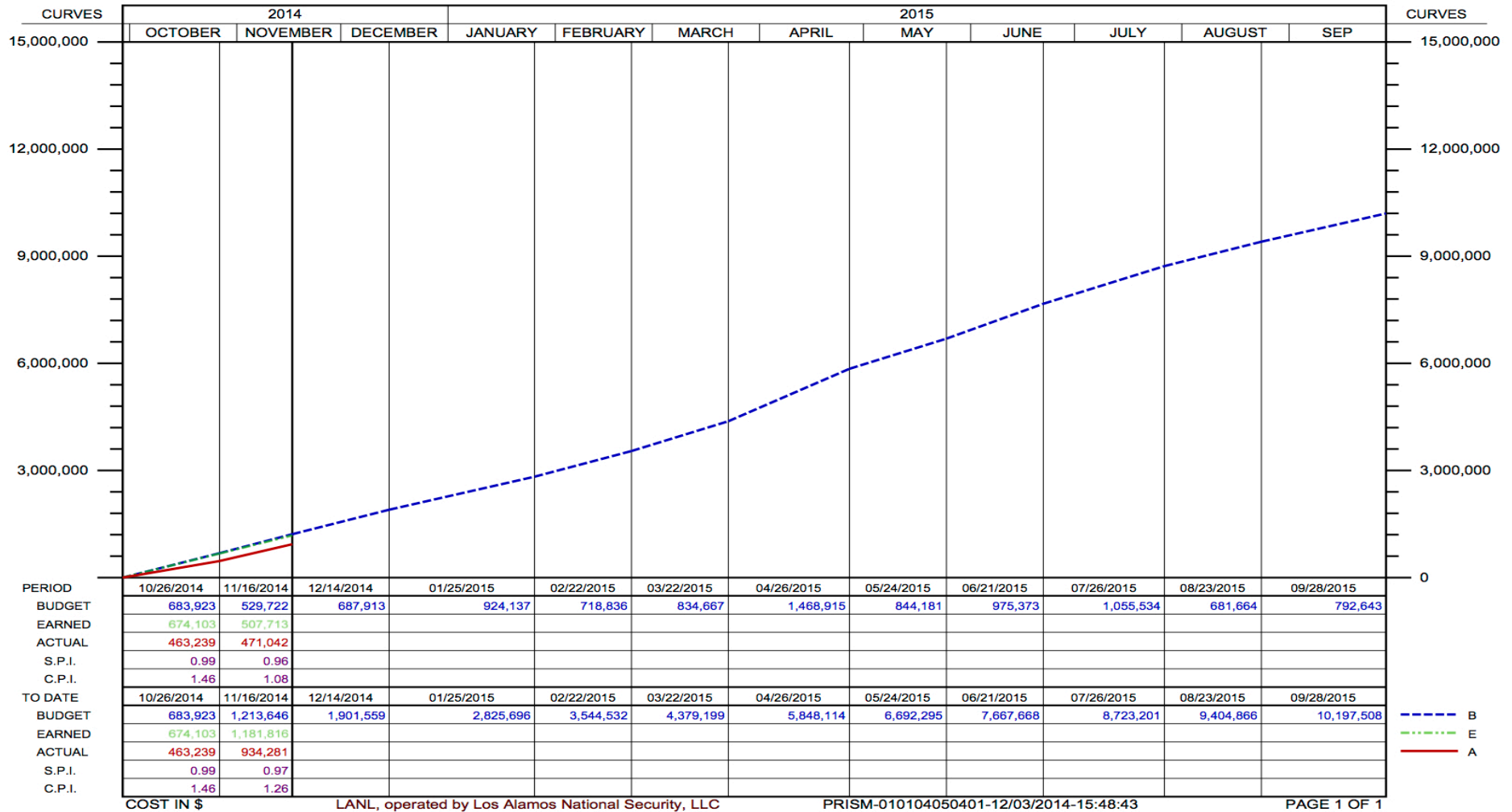
2.6 Risk Table

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.	Working closely with other Programs to maintain adequate personnel coverage for all, and optimize use of resources.
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.
(b) (7)(F)	(b) (7)(F)	(b) (7)(F)	
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; funding for development and installation has resumed in FY15.

2.7 Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05.04.01 - Power Supply Production



3.0 Program and Manufacturing Support Services

MRT 5373	GREEN	<i>Complete and submit a monthly report to NA-123.1 detailing the programmatic status of the Plutonium Sustainment Program by Site</i>		
Provide program status on technical, cost and schedule, funding, milestones and risk to NNSA on a monthly basis				
1. All participants must submit a site specific monthly status report to NA-123.1 no later than the 24th day of each month. 2. The monthly report should be a word document in report type format using the FY14 reporting template and include submission of excel spreadsheet supporting financial data. 3. Minimum topics include (extracted from FY14 format): a. Executive Summary, Milestone Status (Level 2 and Level 3), Technical Progress, EVMS charts (where available), Issues, Variance Analysis and Recovery Plan and Risk Table. b. The financial portion includes: Cost and schedule, funding (FY15 budget authority and FY14 carryover), time phased spend plan by month, actual to date expenditures, estimates to complete, commitments (liens or encumbrances)				
Activity	Baseline Date	Status/Comments	Completion Date	RGYB
October Report	November 24, 2014	Issued	November 24, 2014	BLUE
November Report	December 24, 2014	Issued	December 22, 2014	BLUE
December Report	January 24, 2015			GREEN
January Report	February 24, 2015			GREEN
February Report	March 24, 2015			GREEN
March Report	April 24, 2015			GREEN
April Report	May 24, 2015			GREEN
May Report	June 24, 2015			GREEN
June Report	July 24, 2015			GREEN
July Report	August 24, 2015			GREEN
August Report	September 24, 2015			GREEN

3.1 Program Management

- Supported the resumption scheduling effort with priority assignments and procedure list review.
- Continued finalizing FY2015 work packages.
- Working with other programs to insure shared scope, like preventive and corrective maintenance, are equitably portioned across programs.
- PF-4 Readiness: In order to equitably distribute the PF-4 Readiness costs to each benefitting program, a Readiness Model was developed with input from program managers, program directors and division leaders for the owners of the processes with readiness activities. The Readiness Model is under change control with a board composed of the program directors representing the three major program areas and CFO. Direct funded through programmatic support within the Readiness Model are activities tied to specific components of readiness activities to include the Management Self-Assessments (MSA) and Contractor Readiness Assessments (CRA). Ancillary to the Assessments are the Readiness Managers, Readiness Technical Coordinators, and criticality safety evaluations. Readiness activities will continue throughout FY2015 and possible beyond.

3.2 Support

- Procurement and Warehousing
 - The NPI-8 procurement team successfully processed 186 procurement requests this month. The team was able to work through the period without the development of a substantial (> 1 week) and permanent backlog.

- Warehouse transactions
 - Warehouse distributions: 1,542
 - Warehouse receipts: 4,691
 - Cost of warehouse distributions: \$122,581
 - Cost of warehouse receipts: \$110,706
 - Change in warehouse valuation: (\$11,875).
- Calibration
 - Processed over 45 pieces of M&TE required to support operations.
- Document Control and Records Management
 - New DARs received by the team = 130
 - New DARs received for MET-1 = 34
 - New DARs received for MET-2 = 13
 - Completed DARs by the team = 52
 - Completed DARs for MET-1 = 7
 - Completed DARs for MET-2 = 2
- Records Management Results
 - Boxes indexed and shipped offsite = 3
 - Boxes indexed and stored in VTR = 1.0
 - Boxes received for processing = 0.0
- Preventive and Corrective Maintenance
 - Preventive Maintenance has been operating on a “replace as it fails” basis. A detonator production and surveillance equipment plan was compiled. This plan included an investment prioritization along with a risk table.
- The NPI-3 TA-55 300 Area maintenance team processed the following tasks
 - Trouble-call/Repairs GB Systems – 7 ea.
 - Preventive Maintenance GB Systems – 8 ea.
 - Trouble-call/Repairs Programmatic Equipment – 11 ea.
 - Preventive Maintenance Programmatic Equipment – 13 ea.
 - Power Supply and Heat Source
- Projects Supported
 - Foundry West (GB 351/354)
 - (b) (7)(F)
 - (b) (7)(F) D&D.
 - Transition spool design – engineering issue, cannot repair current design
 - Aqueous Line re-design
- The NPI-3 TA-55 100/200 Area maintenance team processed the following tasks
 - Trouble-call/Repairs GB Systems – 4 ea. (Window Changes).
 - Preventive Maintenance GB Systems – 2 ea.
 - (b) (3) line 7, NPI-3 support NCO-5 FSR scoping walk down
 - Various hydrogenous shielding removal from (b) (3)
 - NPI-3/NPI-7 working water discard issues (RCRA)
 - Re-install hydrogenous shielding in (b) (3)
 - HEPA filter change in (b) (3), GB-267 and GB-1213
 - Discarded 8 dry vacuum pumps throughout the 200 area
 - 3 Stainless Steel hydrogenous door fabrication completed

- Work Management and Control
 - Collected and evaluated issues compiled by radiation protection and glovebox engineers and added to our Service Request backlog list for prioritization and planning over the next 5 years. Current List consists of over 150 issues ranging from abandoned contaminated equipment to major projects (design, fabricate, test, install).
 - Continued to improve performance analysis utilizing the past few years of history (i.e. frequency of door component repairs).

3.3 Issues

- None

3.4 Variance Analysis and Recovery Plan

- None

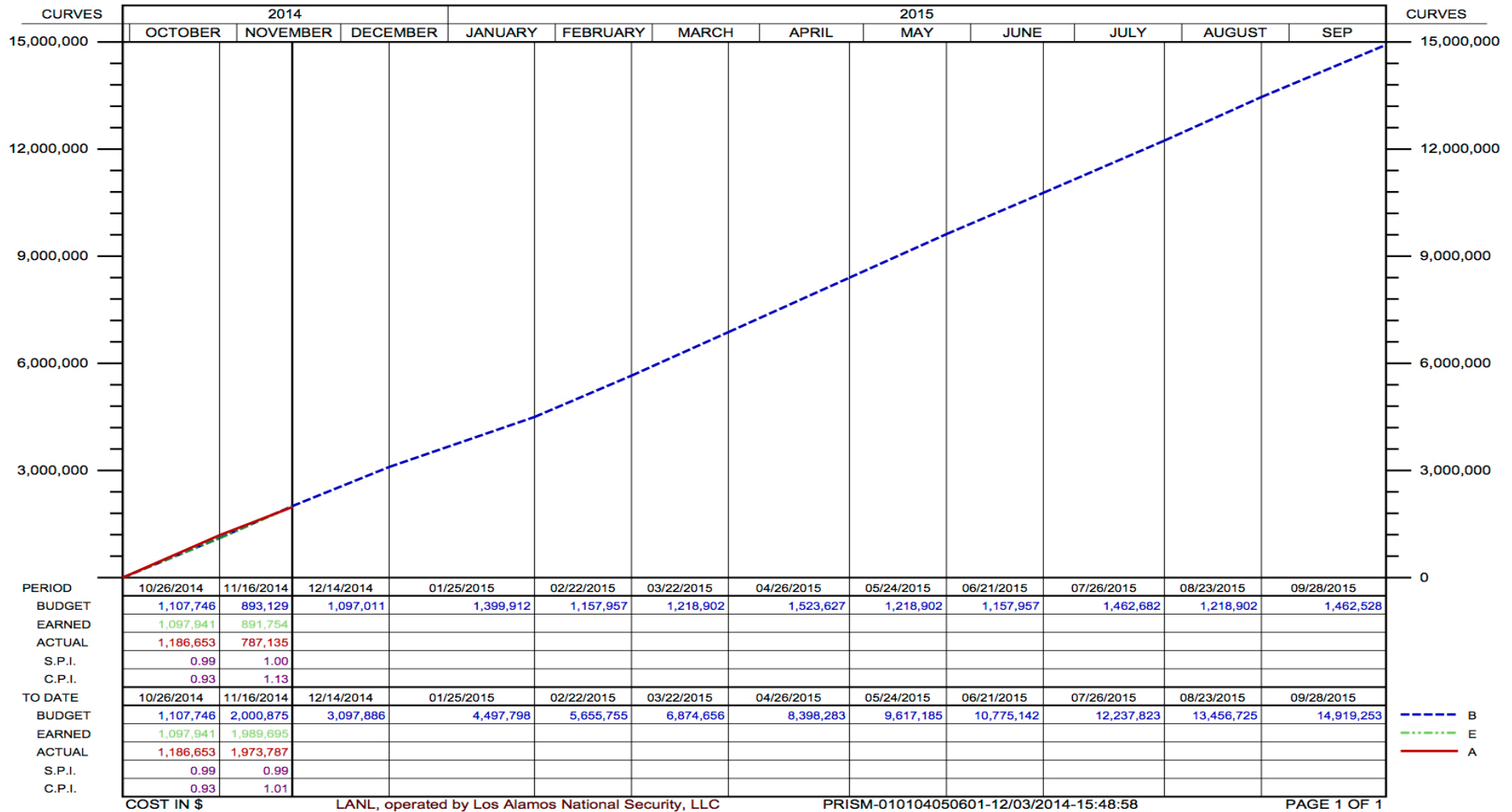
3.5 BCRs

- PSM-15-015: This BCR eliminates the IFIT readiness scope (this will be funded by another program) and reduces industrial engineering scope (resource lost to readiness support) and adds funding to preventive and corrective maintenance supporting pit production. The IFIT/maintenance scope and funding model had previously been established based on a scope swap that was not executed. This BCR aligns scope and funding. A subsequent BCR will push out remaining funding to correct allocation inaccuracies.
- PSM-15-017: This BCR corrects the time phasing of the 2015 fiscal year in Primavera to match the financial reporting periods. New time phasing is reflected in the November minifile.

3.6 Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05.06.01 - Program Support



4.0 Facilities and Readiness/Waste and Institutional Support

4.1 Technical Progress

- PF-4 Facility Availability: November 76.35%
 - 100 Area: 83.94%
 - 200 Area: 76.43%
 - 300 Area: 83.54%
 - 400 Area: 61.50%
- NPI-7 Waste Operations Status: November ME
 - Basement MAR is at 75% capacity.
 - Generation of high MAR Pipe Over-pack Components (POCs) is on going.
 - Working with NCO-5 to resolve issues and prepare a strategy for shipping these POCs to TA-54 consistent with MAR limits.
- CMR: In concert with the FOD, took over ESH R2A2 at CMR.
- Completed permanent closure of fuel tank for generator 50-188
- Completed CMR Fixed Ladder Inventory Annual Assessment
- ALARA Vendor Demonstration Fair Completed
- P121 Variance: Received a variance to P121 so that personnel are not required to self-monitor when exiting an RBA as long as he/she stayed within the swing arc of the door in order to facilitate the 2-person rule.

4.2 Equipment

- None

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

- None

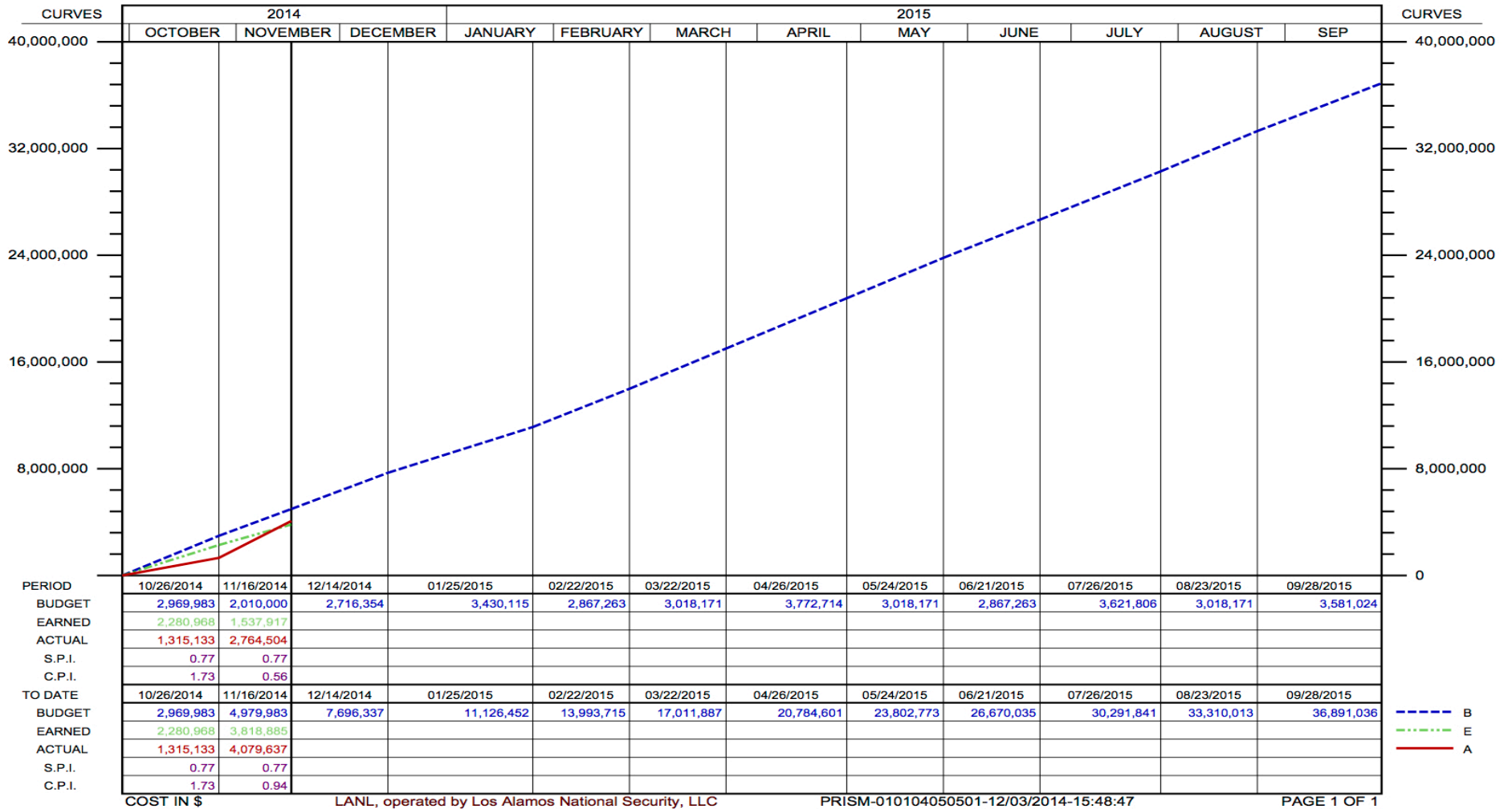
4.5 BCRs

- PSM-15-015: This BCR eliminates the IFIT readiness scope (this will be funded by another program) and reduces industrial engineering scope (resource lost to readiness support) and adds funding to preventive and corrective maintenance supporting pit production. The IFIT/maintenance scope and funding model had previously been established based on a scope swap that was not executed. This BCR aligns scope and funding. A subsequent BCR will push out remaining funding to correct allocation inaccuracies.

4.6 Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05.05.01 - RTBF Recovery



UNCLASSIFIED

PERFORMANCE S-CURVE 01.01.04.05.05.02 - Waste & Other Landlord Recover

