

LA-CP-

*Los Alamos Controlled Publication;
distribution is limited.*

Title: Los Alamos National Laboratory Plutonium Sustainment
Monthly Program Report October 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
1.0 LANL - Pit Development	6
1.1 Technical Progress	7
1.2 Equipment	7
1.3 Issues.....	7
1.4 Variance Analysis and Recovery Plan	7
1.5 BCRs	7
1.6 Risk Table	8
1.7 Earned Value Metrics.....	9
2.0 LANL - Power Supply	11
2.1 Technical Progress	11
2.2 Equipment	11
2.3 Issues.....	11
2.4 Variance Analysis and Recovery Plan	11
2.5 BCRs	11
2.6 Risk Table	12
2.7 Earned Value Metrics.....	13
3.0 Program and Manufacturing Support Services.....	14
3.1 Program Management	14
3.2 Support.....	14
3.3 Issues.....	15
3.4 Variance Analysis and Recovery Plan	15
3.5 BCRs	15
3.6 Earned Value Metrics.....	16
4.0 Facilities and Readiness/Waste and Institutional Support	17
4.1 Technical Progress	17
4.2 Equipment	17
4.3 Issues.....	17
4.4 Variance Analysis and Recovery Plan	17
4.5 BCRs	17
4.6 Earned Value Metrics.....	18

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

- 1) Began the (b) (7)(F) readiness Management Self-Assessment (MSA).
- 2) (b) (7)(F)
- 3) The Mass Spectrometry system for the Xenon Leak Check station has been delivered and cold testing is underway.

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

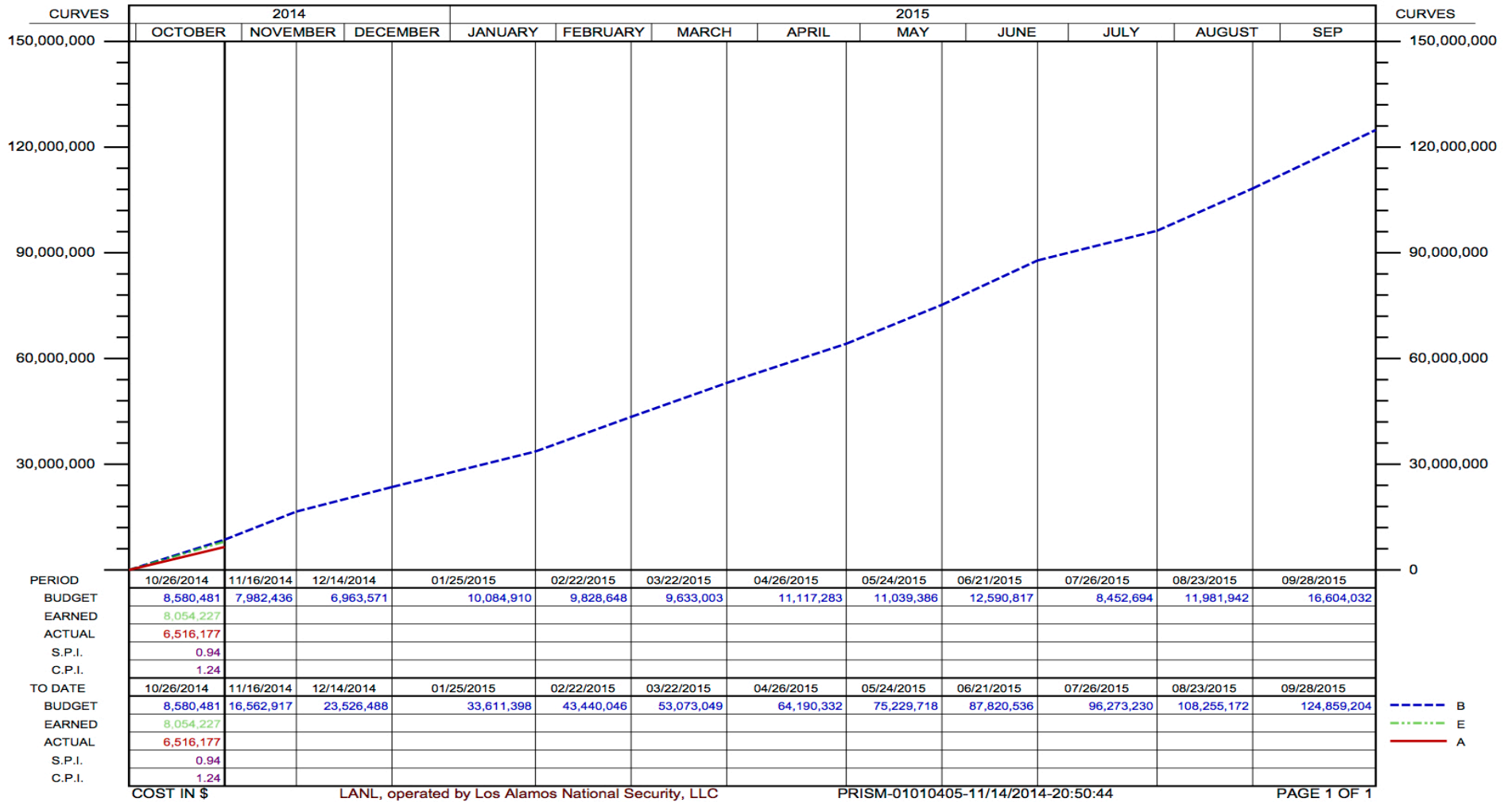
The earned value metrics overall for LANL are within acceptable thresholds.

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

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)				
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			GREEN
Approve Final Glovebox Mockup for PMM#1	June 26, 2015			GREEN
Approve PMM#1 Glovebox Fabrication Design for Construction (Release for procurement)	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	Started development of CBOM and initiated long lead procurements	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) lovebox	March 13, 2015			GREEN
Start (b) (7)(F) Glovebox fabrication	April 3, 2015			GREEN

1.1 Technical Progress

- (b) (7)(F)
- Development of the Consolidated Bill of Materials (CBOM) for the Chlorine Supply Room was initiated along with long lead procurements.
- 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).
- Precision Measuring Machine (b) (3)
 - Training of Laboratory staff on the operation and calibration of the PMMs has started.
 - Equipment for the factory acceptance testing is being prepared for shipment to the Leitz factory.
 - The glovebox mockup design using simulation software is progressing and the checklist is underway.
 - Glovebox manufacturers are reviewing current design.
- (b) (7)(F) (b) (3)
 - Evaluations have successfully determined that the mechanical skid can be moved into place in the basement.
 - The Space Committee has formally approved the basement location for the (b) (7)(F) mechanical skid.
- Decontamination and Decommissioning of (b) (7)(F) (b) (3)
 - The XB location has been de-posted and material removed.
 - Demolition sequencing has been finalized.
 - Crafts have been assigned and have started work execution documentation (IWDs) for D&D.
- Chlorine Distribution & Detection System (b) (3)
 - Briefing for the Program Management Working Board prepared.
- (b) (7)(F) (b) (3)
 - The request for proposal (RFP) and supporting exhibits have been prepared and submitted to Acquisition Services Management (ASM-PUR)

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

1.5 BCRs

- None

Unclassified Controlled Nuclear Information

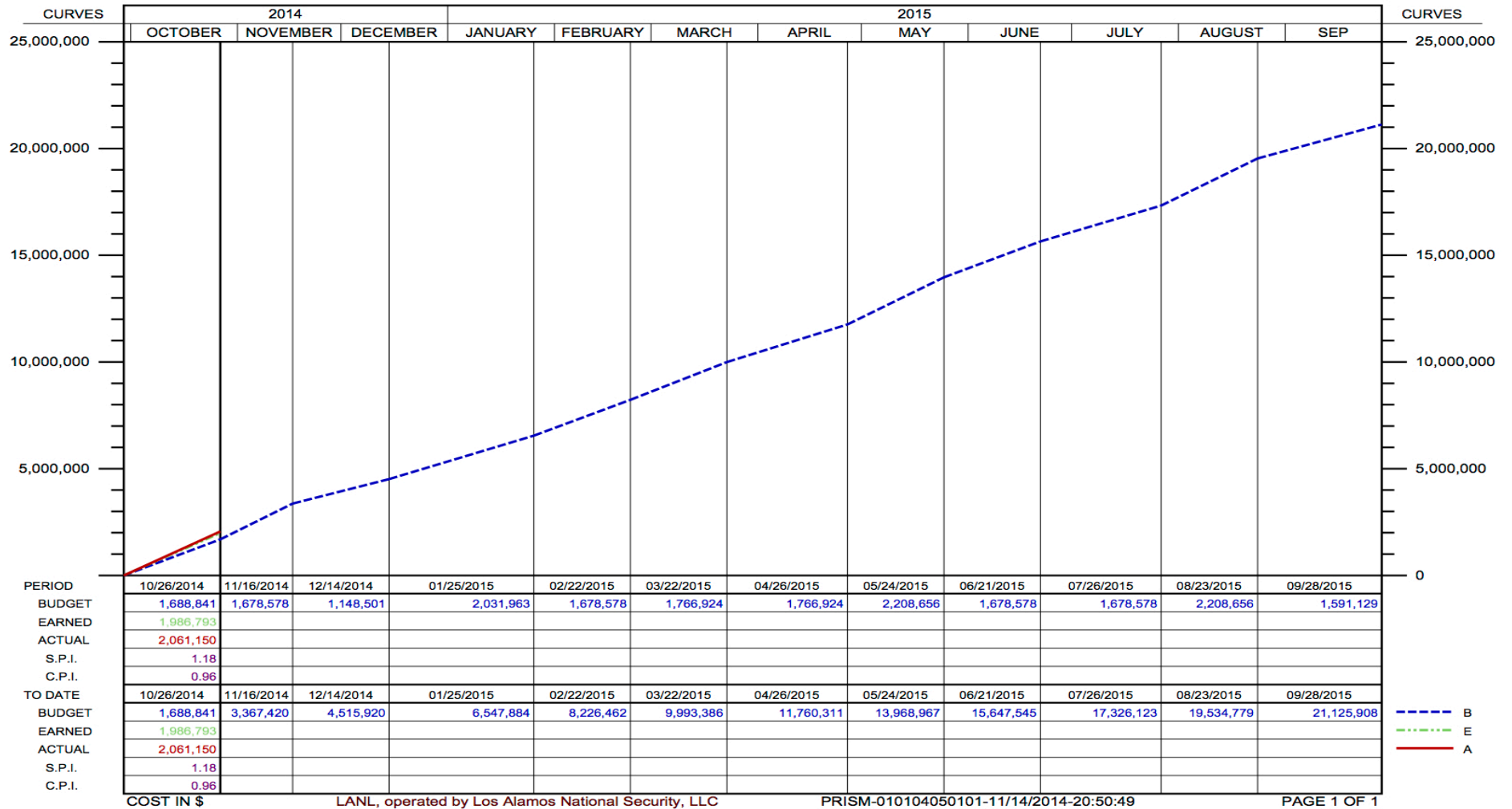
1.6 Risk Table

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 (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.
(b) (5)			
(b) (7)(F)			

1.7 Earned Value Metrics

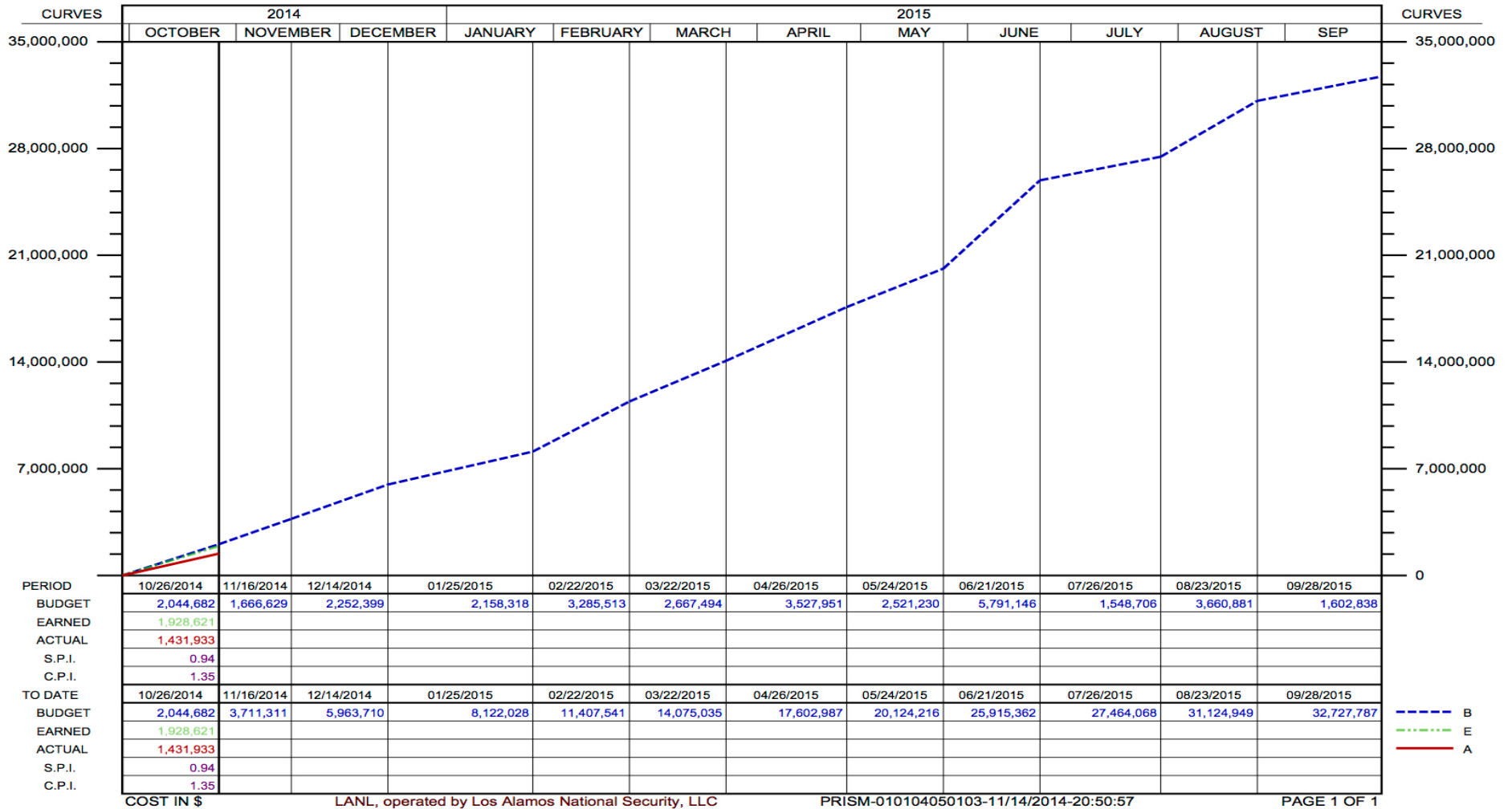
PERFORMANCE S-CURVE

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 I (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

- The demo lot for FSO-520 dissolution has been delayed due to maintenance issues with the PF-4 trolley system. However, the fuel was successfully introduced into the glovebox line, opened, and placed in an approved container. Projected start is now early December.
- Xenon-leak check system is awaiting chamber modifications. The Mass Spectrometry system has been delivered and cold testing is underway.
- DCF for installation of pressure relief and bubbler system for PF-5 environmental chambers is in progress.
- Procedures for two systems, Laser Etching and (b) (7)(F) are in the final approval stage.
- Priority drawings for PF-5 environmental chamber gas delivery system are complete.

2.2 Equipment

- Delivery of the Xenon backfill station chamber delivery is expected in January; this chamber is at 90% complete at the vender.
- The pressure safety review for the Xenon backfill station is ongoing.

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 now early December 2014.

2.4 Variance Analysis and Recovery Plan

- None

2.5 BCRs

- None

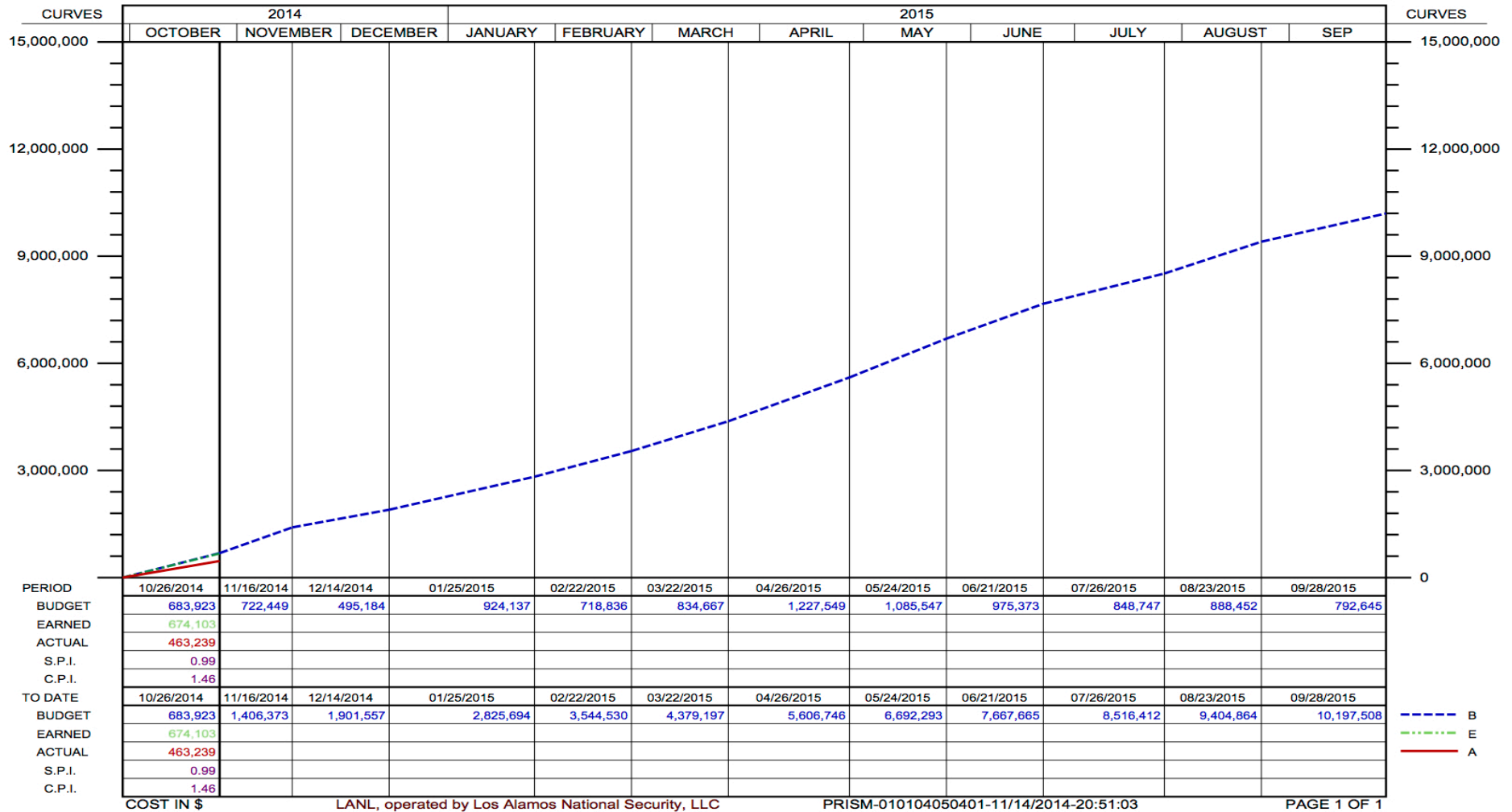
2.6 Risk Table

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)	
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 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

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 FY 14 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, 2013	BLUE
November Report	December 24, 2014			GREEN
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

- Provided a comprehensive Program briefing to NA123 (b) (6) including history, current and near-term, and future program details.
- Supported the resumption scheduling effort with priority assignments and procedure list review.
- Continued work package finalizing for FY25.
- Working with other programs to insure shared scope, like preventive and corrective maintenance, are equitably portioned across programs.
- Working with Preventive and Corrective Maintenance Group on developing PF-4 equipment inventory.

3.2 Support

- Procurement and Warehousing
 - The NPI-8 procurement team successfully processed 89 procurement requests in October. The team was able to work through the period without the development of a substantial (> 1 week) and permanent backlog.
 - Large procurements:
 - \$563,238 - (b) (7)(F)
 - \$304,000 – Nuclear Waste Partnership– Mod to existing PO.
 - \$620,000- University of Texas at Austin- Mod to existing PO
 - 5,000,000-RFP- Software & Service Contract
 - The TA55 Warehouse is working on developing a potential Blanket Order Agreement (BOA) with Government Scientific Sales (GSS) for GB Gloves.

- Calibration
 - Finalized implementation plan on Lean Six Sigma Black Belt project to address chronic underperformance in completing calibrations of dimensional measuring and test equipment within established target cycle times. Established target completion dates for plan actions.
 - A re-organization within ADBI has resulted in the S&CL being mapped over to the Acquisition Services Management Division effective Dec 1, 2014.
 - S&CL is strategizing with CCS-6, Statistical Group, to utilize statisticians in addressing or analyzing strategic areas within S&CL operations. Some possible areas are torque wrench OOTs, accelerometer control charting, and NCR process trends. This can help the S&CL deliver on Engineering Support and Continuous Improvement activities within the S&CL work package.
 - A total of 22 M&TE items were calibrated in October, with an additional 8 item inactivations. Successfully achieved target cycle time rates for equipment turn around to avoid mission and deliverable impacts.
- Document Control and Records Management
 - New DARs received by the team = 117
 - New DARs received for MET-1 = 34
 - New DARs received for MET-2 = 14
 - Completed DARs by the team = 55
 - Completed DARs for MET-1 = 13
 - Completed DARs for MET-2 = 0
- Records Management Results
 - Boxes indexed and shipped offsite = 0
 - Boxes indexed and stored in VTR = 1.75
 - Boxes received for processing = 2.625
- Preventive Maintenance
 - Refining equipment inventory and MEL.
- Corrective Maintenance:
 - Continuing to work the Glovebox window replacement issue. Cost continues to be a consideration.

3.3 Issues

- Facility temperature issues at the S&CL are at risk of impacting program calibrations. For items that can be outsourced when facility problems prevent their calibration at LANL, there should be no impact due to the current calibration Blanket Order Agreement in place; however, for specialty items that cannot be outsourced, there is a risk that a calibration need might come at the same time as a facility problem, impacting the S&CL's ability to calibrate in house. In the month of September, the S&CL experienced several days of 'Stop Work' conditions due to environmental issues.
- The metrology information management system "Mudcats" will need to be replaced in early FY15 as the company that supports the current system has gone out of business. This will also require the web interface with M&TE customers to be replaced.

3.4 Variance Analysis and Recovery Plan

- Through month end October spending relative to planned at the MAL level. Some work packages are under running while others are overrunning in the first month. Working with work package managers to ensure spending tracks close to planned with exceptions fully explained.

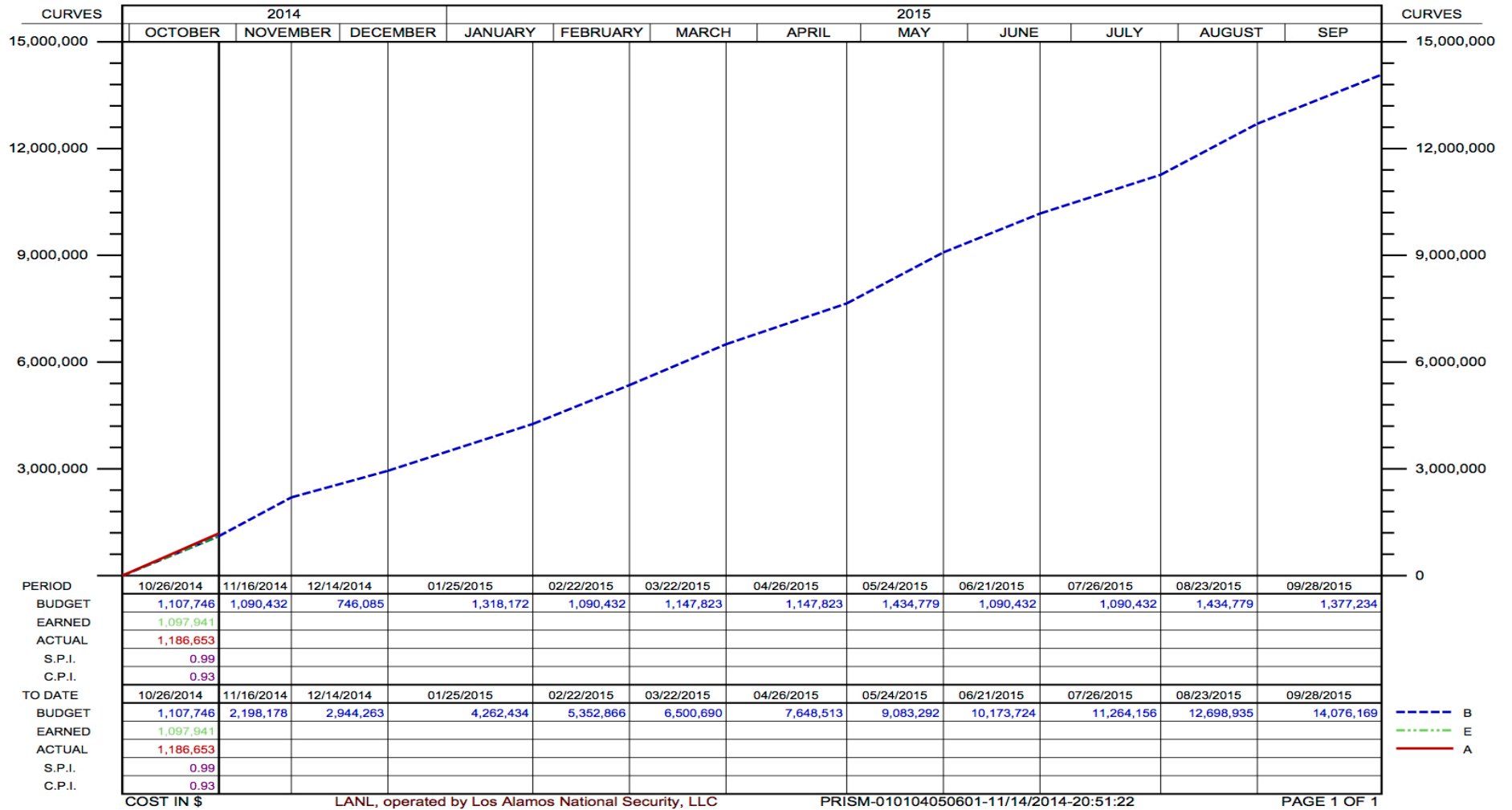
3.5 BCRs

- none

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 in October 97.36%.
- The PF-4 readiness activities organizational chart was distributed.
- The new Simplified LANMAS Inquiry Program (SLIP) has been approved and is now available on all classified ClearCubes at TA-55. SLIP is a program that interfaces with the LANMAS nuclear material database and will allow an Fissile Material Handler (FMH) to rapidly check the inventory of a location in order to meet Material Control and Accountability (MC&A) and criticality safety requirements
- Overall readiness status will be included in a separate monthly report. Readiness activity status pertaining Pu Sustainment program elements can be found in the element's risk table status.

4.2 Equipment

- TA-55 deferred one preventive maintenance (PM) activity due to a red lit room, two PMs to align with Technical Safety Requirements (TSRs), four PMs due to material, one PM due to equipment out of service, two PMs pending cooler temperatures, and one PM due to lack of SOC (protective force) support. Weapons Facilities Operations deferred two PMs due to facility access, two PMs due to materials, and two PMs due to vendor support. Environmental Waste Management Facility Operations deferred two PMs waiting for QA approval. Utilities and Institutional Facilities deferred four PMs due to equipment out of service. Radiological Liquid Waste Facility deferred one PM waiting for Unreviewed Safety Question screening and one PM due to inspector unavailability.

4.3 Issues

- Cost recovery target reduction of 5,000 K in FY15 from FY14 and incorporation of science campaign resulted in areas of over allocation and under allocation of budget for various programs. Target budget utilized for percentages of costing instead of allocated cost in FY15.

4.4 Variance Analysis and Recovery Plan

- None

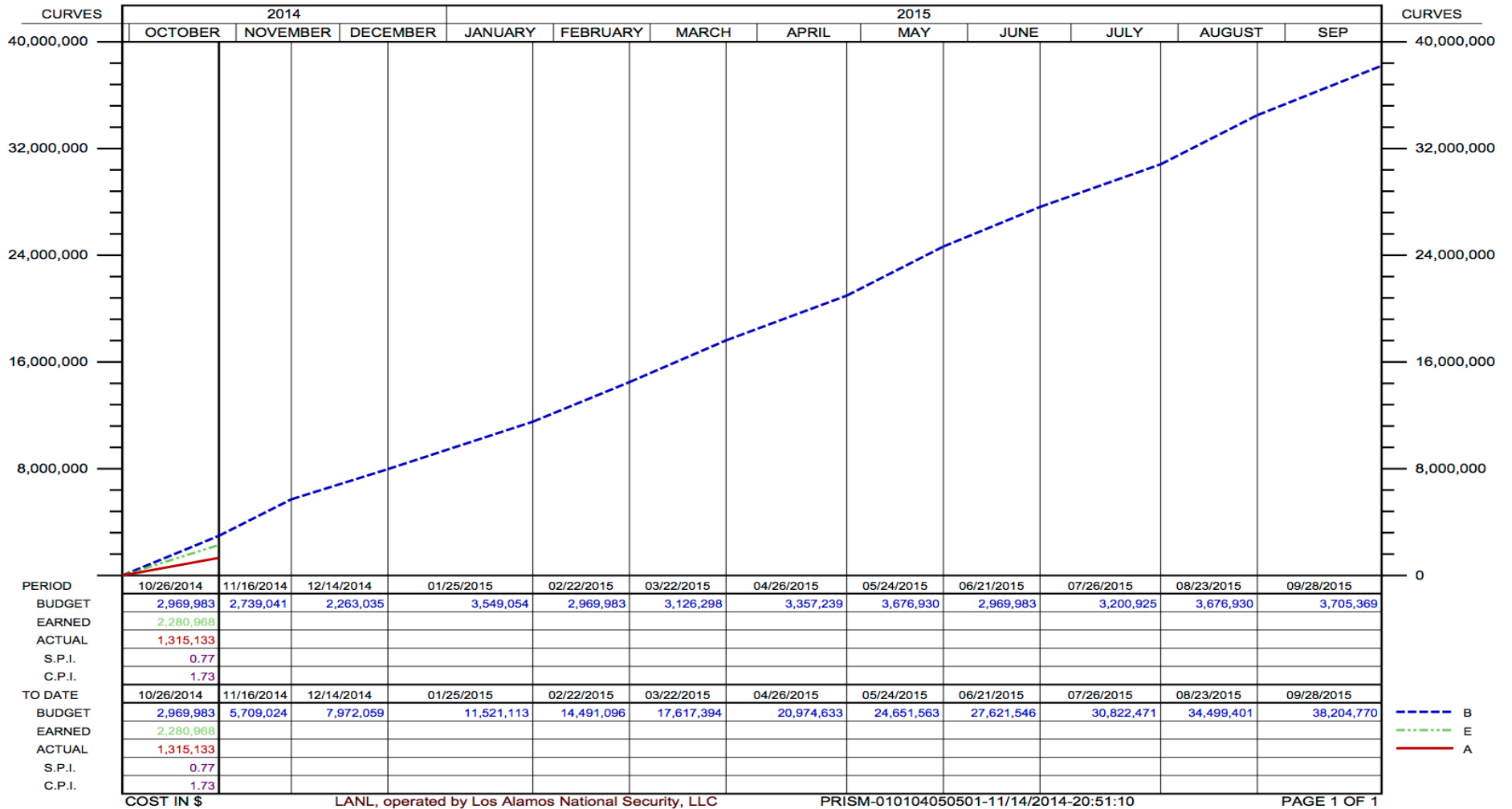
4.5 BCRs

- None

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

