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Monthly Program Report March 2015

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LANL Executive Summary

The majority of Pu239 operations are undergoing readiness assessments prior to returning to operational status.

Operations (b) (7)(F)

A funding model including programmatic and RTBF support and a resource-loaded schedule has been developed. The readiness project team provides details in a separate report.

In March of 2015 the Plutonium Sustainment program at LANL completed or addressed the following high-level activities:

- 1) The factory acceptance testing has been completed for the second Precision Measuring Machine (PMM #2). In general, the PMM project is about two months ahead of the baseline schedule.
- 2) Testing and debugging of the new (b) (7)(F) controllers (for heat source fabrication) and glove box continue. A feed through into the box was discovered to have small holes (b) (3) impossible. A new feed through was procured and installed and atmosphere is now stable. Actual (b) (7)(F) has started with a design of experiments to evaluate the transfer of programming from the SM39 development lab to PF4.

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 NNSA Comments

None provided.

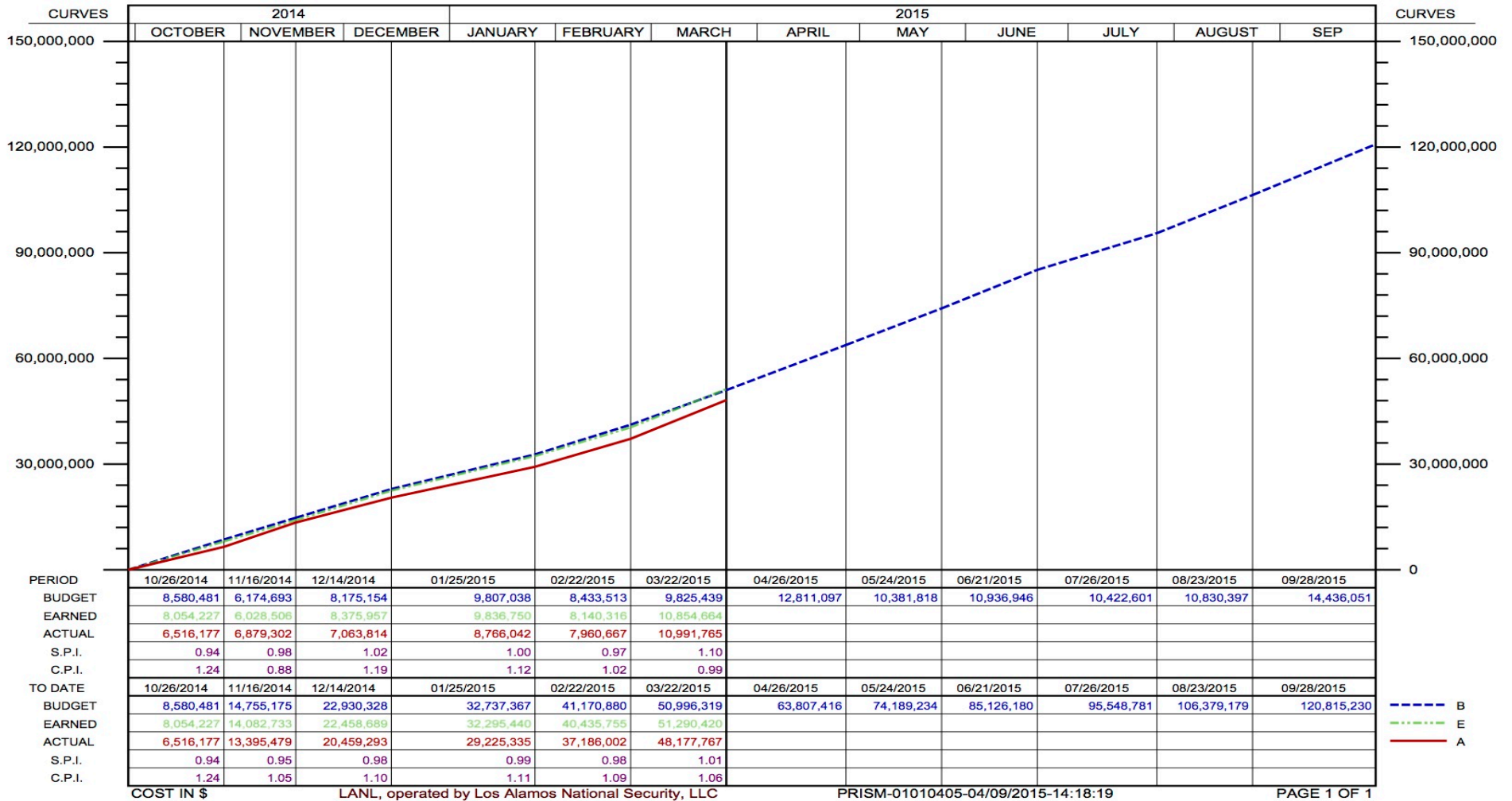
Table 1: March Baseline Change Requests

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-15-003	(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
Pit Equipment	PSM-15-035	D&D XBs	2/11/15	pending	Scope/ Schedule/Cost	TBD	3
Power Supply Development	PSM-15-038	Omnibus Site Split - Power	2/12/15	3/11/15	Scope/ Schedule/Cost	\$500k	3
Production Support	PSM-15-045	Omnibus Site Split for Prev/Corr Maintenance	2/13/15	pending	Scope/ Schedule/Cost	\$500k	3
Production Support	PSM-15-046	Omnibus Site Split for Prev/Corr Maintenance	2/13/15	pending	Scope/ Schedule/Cost	\$500k	3
Pu Sustainment	PSM-15-062	JT29 Realignment	2/18/15	3/2/15	Cost	\$1,146k	3
Pit Equipment	PSM-15-080	DMU-35 Construction	3/23/15	pending	Schedule	none	4
Pit Manufacturing	PSM-15-081	Machining Capability	3/23/15	pending	Cost	\$750k	3
Pit Equipment	PSM-15-083	CMM#2 GB Title Block	3/30/15	pending	Scope/ Schedule/Cost	\$50k	3

Earned Value Metrics

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01.01.04.05 - Pu Sustainment



[NOTE: September 2015 includes 5% FY16 carryover holdback of \$6.084M 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) 4. Start external installation for chlorine supply room 5. 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	Completed	February 6, 2015	BLUE	
Receive PMM#1	May 29, 2015	Completed	February 26, 2015	BLUE	
Conduct Factory Acceptance Test on Infinity PMM#2	May 15, 2015	Factory Acceptance Testing of Infinity PMM#2 completed, 6 weeks early.	March 30, 2015	BLUE	
Receive PMM#2	July 24, 2015	On track and forecasting an early delivery (first week of June 2015).		GREEN	
Develop Checklist for Glovebox Mockup for PMM#1	January 2, 2015	Completed	December 15, 2014	BLUE	
Approve Final Glovebox Mockup for PMM#1	June 26, 2015	Maintenance acceptance 100% complete. Operational acceptance 75% complete and on track.		GREEN	
Approve PMM#1 Glovebox Fabrication Design for Construction (Release for procurement)	September 11, 2015	On Track		GREEN	
(b) (7)(F)	May 29, 2015	Scheduled to complete 7 weeks ahead of schedule. Forecasted completion date of April 10, 2015.		GREEN	
Complete Factory Acceptance Test (b) (7)(F)	September 11, 2015	On Track		GREEN	
Start equipment procurement for Chlorine Supply Room	November 7, 2014	Completed	October 29, 2014	BLUE	
Start Construction for Chlorine Supply Room	March 20, 2015	Completed	January 14, 2015	BLUE	
Procurement (ASM) issues request for proposal (RFP) for (b) (7)(F) Glovebox	January 30, 2015	Completed	December 2, 2014	BLUE	
Kickoff meeting with vendor for (b) (7)(F) Glovebox	March 13, 2015	Completed	December 19, 2014	BLUE	
Start (b) (7)(F) Glovebox fabrication	April 3, 2015	Completed	December 19, 2014	BLUE	

1.1 Technical Progress

- The majority of pit manufacturing development is focused on readiness related activities.

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 – 4-6 wks ahead of schedule.
 2. Release PMM #1 glove box fabrication design to procurement – on track for early completion.
 3. Complete factory acceptance testing for (b) (7)(F) – on track for early completion..
 4. Start external installation for chlorine supply room – COMPLETED.
 5. Start glove box fabrication of (b) (7)(F) – COMPLETED.
- Precision Measurement Machines (b) (3)
 - o Factory Acceptance Testing for PMM#2 was completed on March 30, 2015.
 - o PMM#2 is being prepared for shipping and scheduled to arrive at LANL in June.
 - PMM#1 glove box procurement
 - o PMM#1 installation at SM-39 with the glovebox mockup is complete and testing continues.
 - o The maintenance acceptance testing is complete and the glovebox design met the requirements.
 - o Operational testing and acceptance continue and are on track for early completion.
 - (b) (7)(F) (b) (3)
 - o Preparation for HV Tank testing is scheduled for completion on April 10, 2015.
 - o Factory Acceptance Testing is scheduled for August.
 - Decontamination and Decommissioning of (b) (7)(F) (b) (3)
 - o (b) (7)(F) D&D is scheduled for May.
 - Chlorine Distribution & Detection System (b) (3)
 - o Chlorine Supply Room construction has started and the final procurements are scheduled to be complete in April.
 - Foundry Furnace Upgrade, GB-1
 - o The original recovery schedule planned installation of the new power supply in first quarter of FY15. During vendor testing in the Detroit facilities prior to factory acceptance testing some performance parameters were not met. Specific components sent back to Norway for replacement and/or modification.
 - o The Underwriters Laboratory testing and certification process became iterative and took significantly longer than projected. The UL stamp was obtained on February 17, 2015.
 - o The power measurement method has been evaluated and an improved technique will be used to reevaluate the supplies.
 - o NPI-8 personnel began the evaluation of the revised power supplies in March.
 - o Two 500 Hertz power supplies are scheduled to arrive at LANL in mid-April.
 - o Two 23 Kilohertz power supplies scheduled to arrive at LANL in Mid-June. Expediting efforts underway.

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

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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-15-003: 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.
- PSM-15-035: This BCR pushes some FY15 scheduled scope into FY16 as a result of a LANL site split reduction and readiness conflicts.
- PSM-15-080: This BCR establishes the baseline Primavera schedule for the DMU-35 project based on the Continuing Resolution budget.
- PSM-15-081: This BCR provides additional funds to maintain Pu machining capability.
- PSM-15-083: This BCR initiates the design process for the second PMM glovebox.

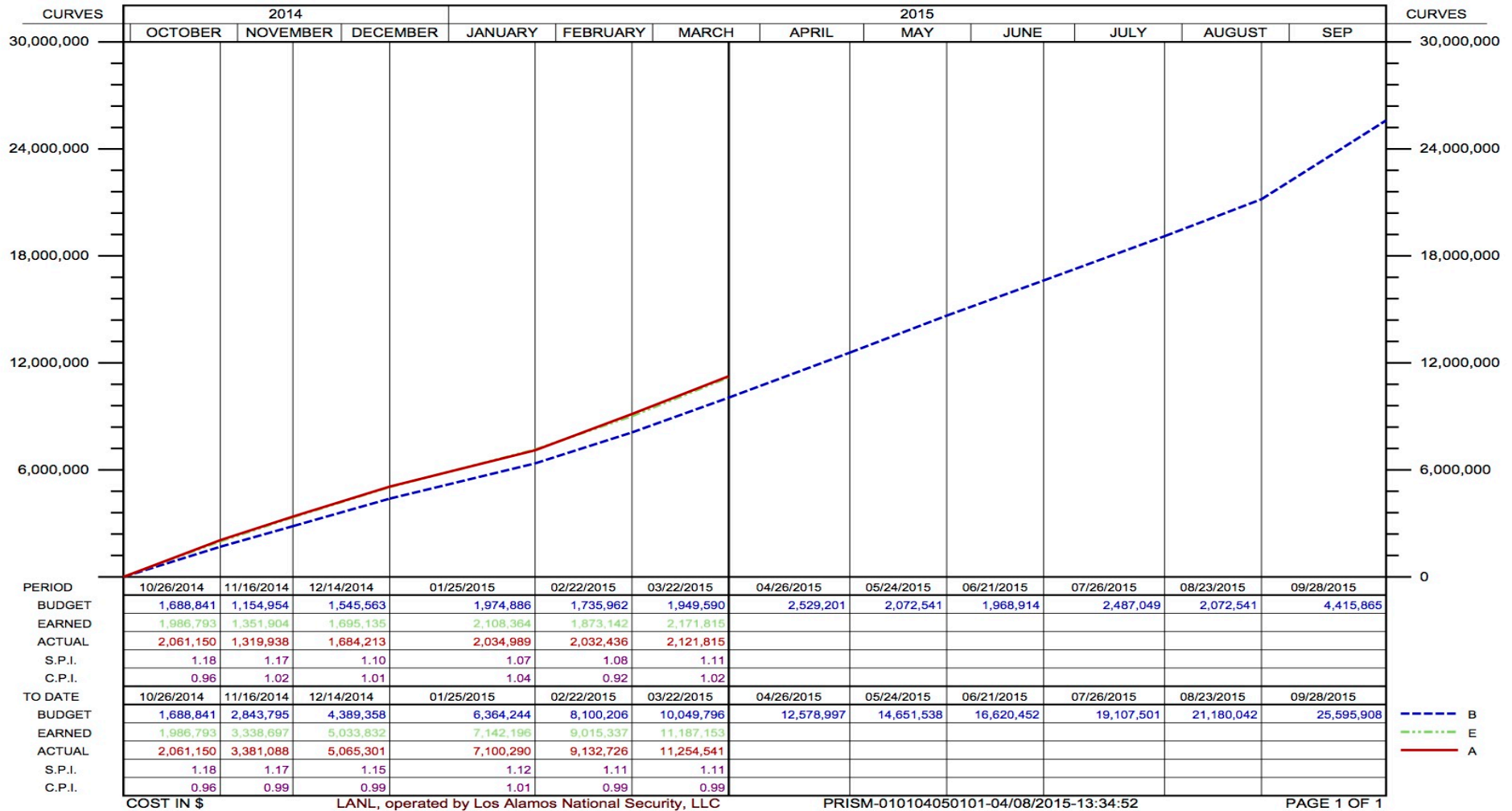
1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(b) (7)(F)		
	(b) (5)		
Installation of equipment in PF-4	Readiness activities could take conflict with D&D and installation of equipment in PF-4. Since readiness, in general, is a higher priority than equipment installation, equipment schedule delays could occur.	Prioritize installation work to emphasize areas of limited conflict (ie. PF-4 basement, SM-39, areas not subject to readiness, etc.).	(b) (7)(F) and PMM are slowed in FY15. A BCR will be generated once the magnitude of the impact is known.
	(b) (7)(F)		

1.7 Earned Value Metrics

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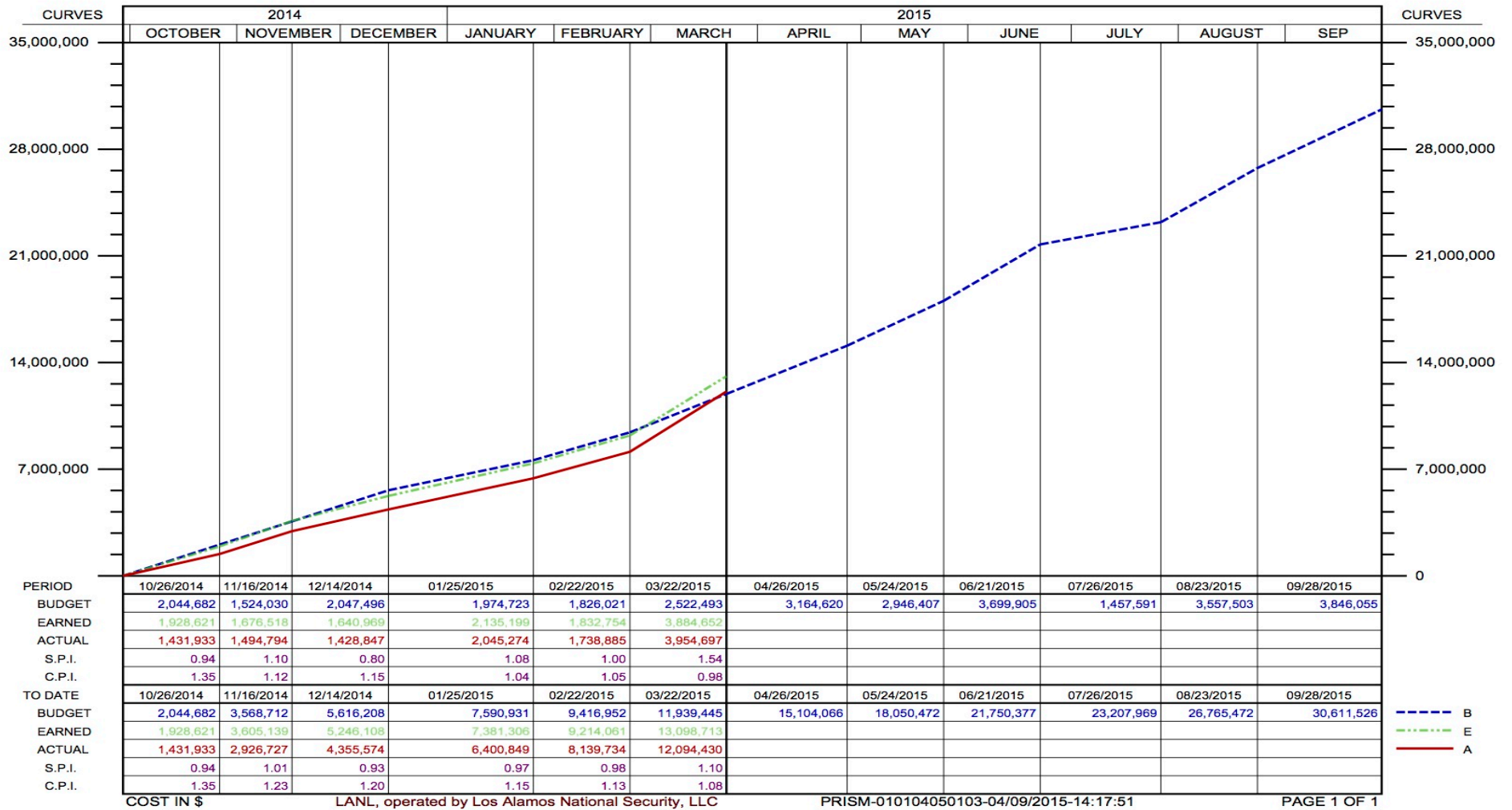
01.01.04.05.01.01 - Pit Manufacturing and Design D



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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	Completed	February 3, 2015	BLUE	
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	Completed	February 5, 2015	BLUE	

2.1 Technical Progress

- LANL hosted a PRT meeting on March 24, 2015. An update on the progress of the Live Unit was made. A second aqueous batch to confirm the findings of the first batch was completed all the way through granule production. It still appears that a single dissolution is good enough to meet the fuel specifications. Bugs continue to pop up and be dealt with (b) (3) using the (b) (7)(F) has progressed without incident. The Live Unit is scheduled to be completed and tested by the first week of July 2015.
- Testing the new xenon backfill station chamber has continued. The backfill station (b) (3) has successfully gone through the purge/backfill/purge/backfill cycle using argon as the fill gas. Argon is being used for testing as it is much less expensive than xenon. The ball bearing seal fixture inside the vacuum chamber has also been tested and works as designed.
- Heat source piece parts to support LANL PPI and QER for heat source manufacturing are scheduled to be available in October 2016 as reported at the March 24 PRT. This means manufacturing of qualified heat sources will likely start about 6 months later. Pre-production of heat sources as a risk reduction to PF4 operations being interrupted can start about March 2017 (about two years ahead of FPU).
- Safety Basis has given final approval of the heat source liner design revision D04 clearing one hurdle for moving heat sources from PF4 to PF5. D04 passed all the tests for Department of Transportation special forms sealed source certification (49CFR 173.469).

2.2 Equipment

- Testing and debugging of the new (b) (7)(F) (for heat source fabrication) and glove box continue. A feed through into the box was discovered to have small holes (b) (3) impossible. A new feed through was procured and installed and atmosphere is now stable. Actual (b) (7)(F) has started with a design of experiments to evaluate the transfer of programming from the SM39 development lab to PF4.
- Components for the xenon leak check station have begun to arrive. The manifold has been manufactured and delivered. The pressure safety documentation has been completed and submitted for approval. Two LANL engineers went to the mass spectrometer vendor site for 4 days of training and a vendor visit has been scheduled for May 2015 to provide on-site aid after LANL assembles the station.
- The final design review for the electrical testers was held at Kansas City on March 24th. LANL, SNL, and KC-NSC personnel all participated. There were no showstoppers in the hardware chosen to make the power supply measurements. Some minor software changes were identified and will be incorporated. LANL will supply two working surrogate power supplies and travel to KC to participate in testing the e-testers in May 2015.

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

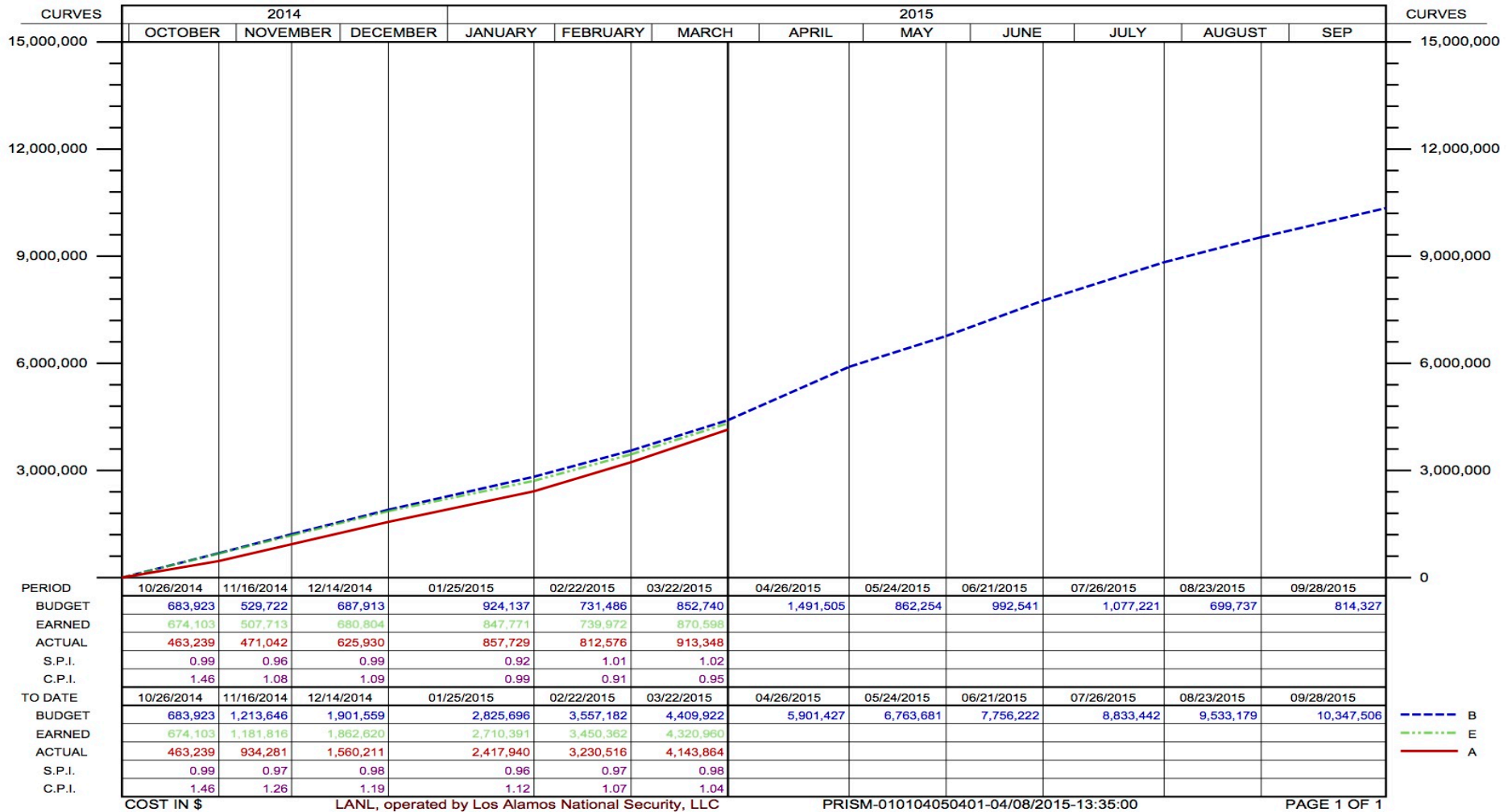
2.6 Risk Table

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. Engineering (MET-1) has added three young engineers that are developing into SMEs for PF-5 assembly and testing operations.
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.	The PRT is working to resolve schedule issues that could delay FPU. As of this monthly report, FPU is not in danger of being missed.
(b) (7)(F)	(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	Complete and submit a monthly report to NA-123.1 detailing the programmatic status of the Plutonium Sustainment Program by Site		
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	Issued	January 23, 2015	BLUE
January Report	February 24, 2015	Issued	February 23, 2015	BLUE
February Report	March 24, 2015	Issued	March 24, 2015	BLUE
March Report	April 24, 2015	Issued	April 24, 2015	BLUE
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.
- Managing FY2015 work packages.

3.2 Support

- Working with other programs to insure shared scope, like preventive and corrective maintenance, are equitably portioned across programs.

3.3 Issues

- None

3.4 Variance Analysis and Recovery Plan

- None

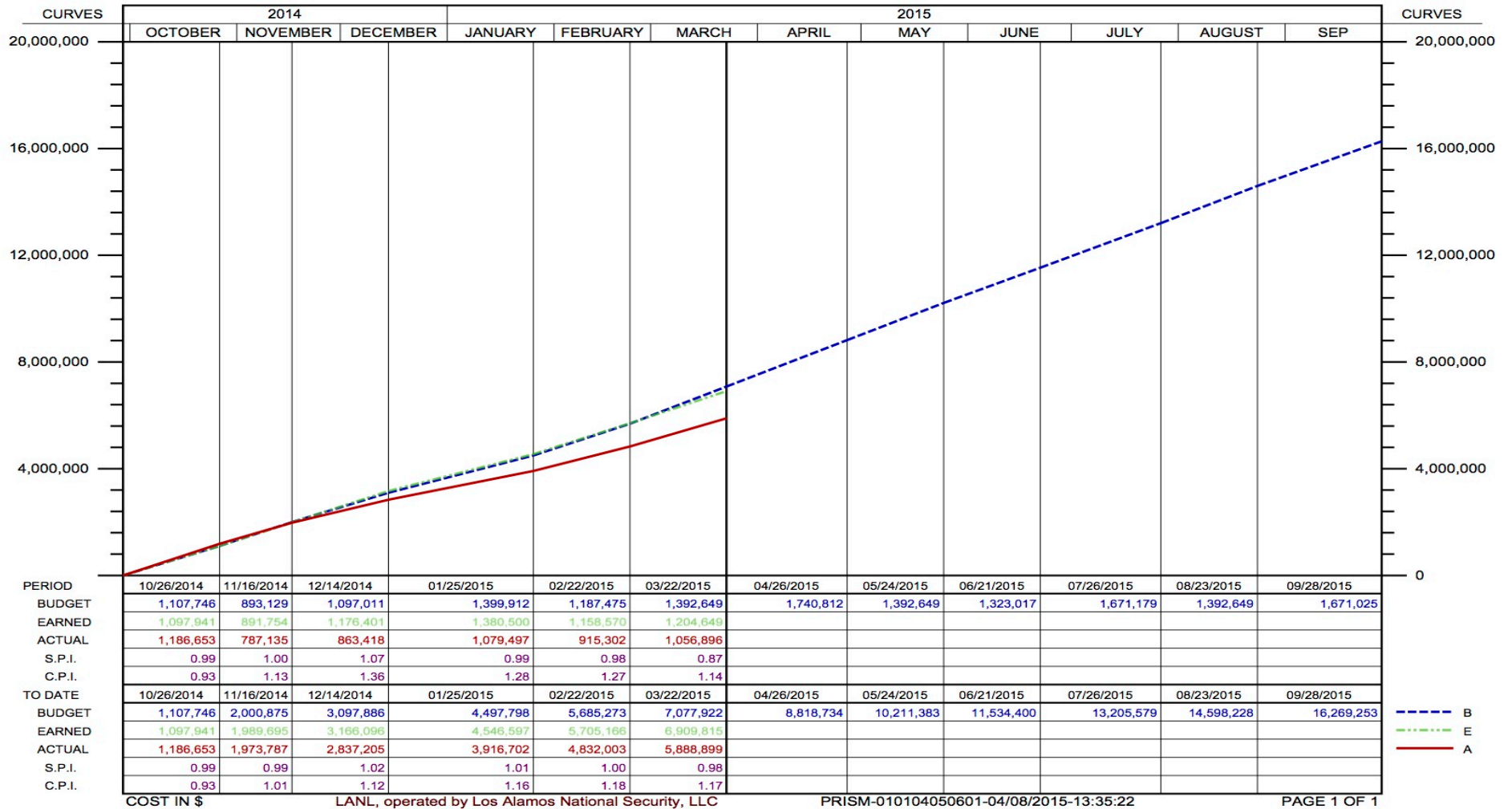
3.5 BCRs

- PSM-15-045: This BCR provides \$500k of new BA to maintenance to support pit operations. Maintenance is severely underfunded in FY15.
- PSM-15-046: This BCR provides \$500k of new BA to maintenance to support power supply production operations. Maintenance is severely underfunded in FY15.
- PSM-15-062: This BCR realigns the carryover holdback to 5% of the new budget (post-omnibus bill).

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

- (b) (7)(F)
- RTBF budget on track relative to spend plan.
- Preventive and corrective maintenance on track with no issues.
- (b) (7)(F)

4.2 Equipment

- None

4.3 Issues

- (b) (7)(F)
- No 55-gallon drums can be shipped to TA-54 as a result of a recently declared PISA

4.4 Variance Analysis and Recovery Plan

- None

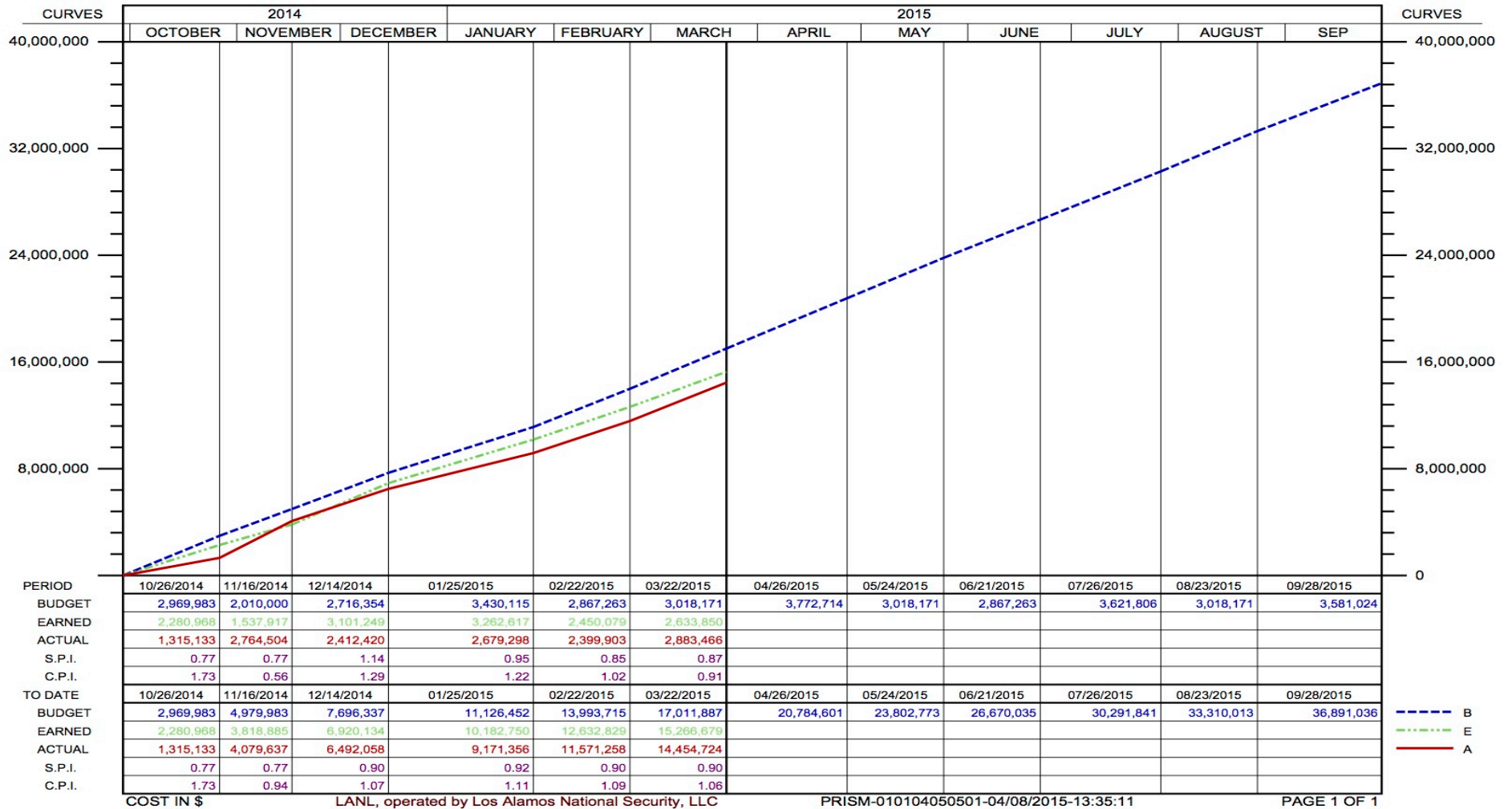
4.5 BCRs

- None

4.6 Earned Value Metrics

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01.01.04.05.05.01 - RTBF Recovery



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PERFORMANCE S-CURVE 01.01.04.05.05.02 - Waste & Other Landlord Recover

