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Monthly Program Report June 2015

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(List all UCNI guidance used)



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LANL Executive Summary

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

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

- 1) Precision Measurement Machine #2 was received at LANL.
- 2) The final approval for commencing operations with fueled heat sources in PF-5 has been granted and LANL successfully transferred six fueled units designated for the “Live” unit build from PF-4 to PF-5.
- 3) PF-4 Readiness – The request to resume operations for (b) (7)(F) was submitted and the Federal Readiness Assessment (FRA) for Machining began. The Management Self-Assessment (MSA) for Pit Flow Sheet was closed out.

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.

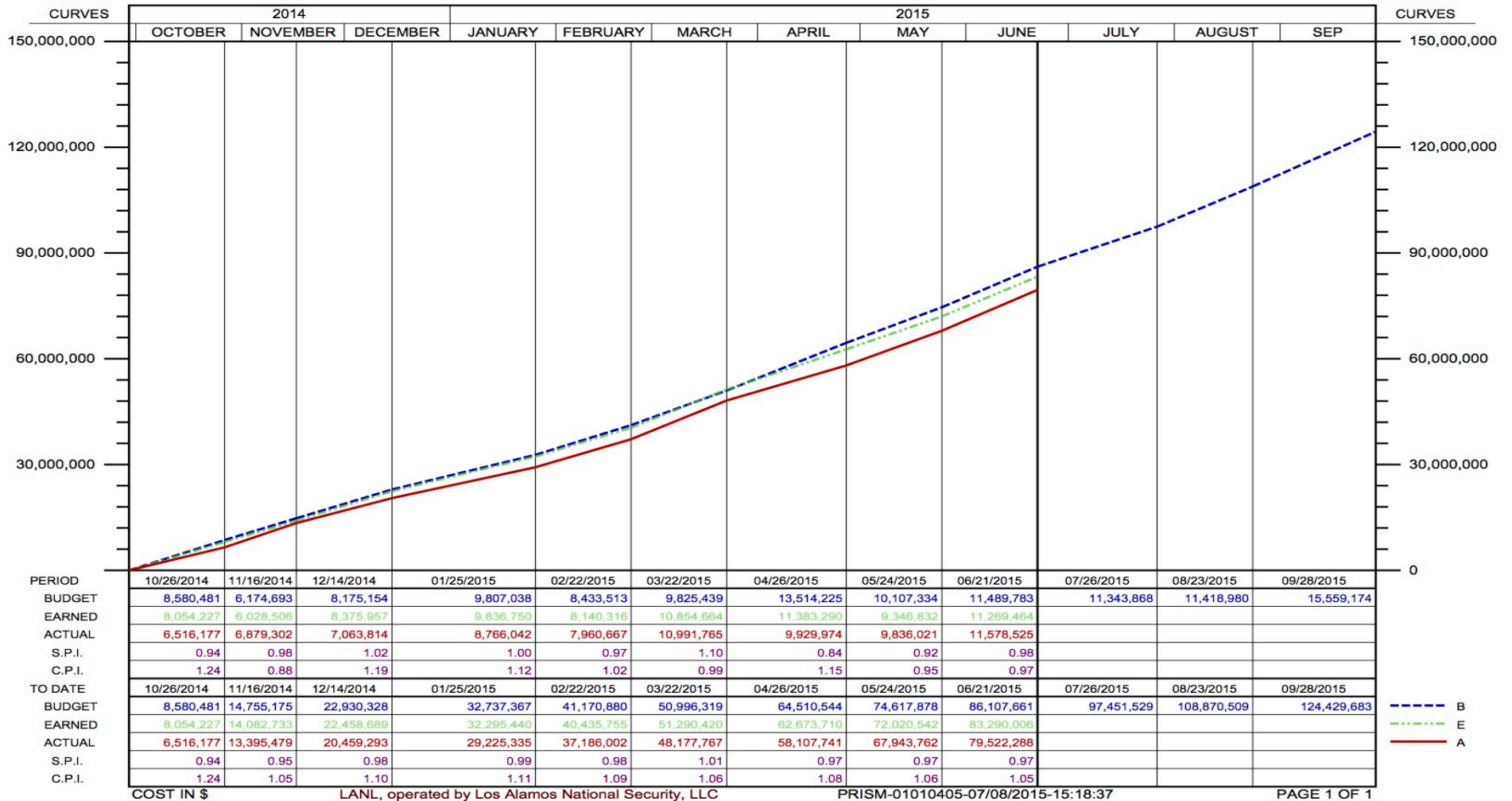
Table 1: June Baseline Change Requests

WBS	BCR #	BCR Description	Date Assigned	Date Approved	Impact	Cost Impact	Change Level
~~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 Manufacturing	PSM-15-069	Omnibus Site Split - Pit Flow Sheet New Hires	3/2/15	pending	Cost	\$1,100k	3
Pit Manufacturing	PSM-15-070	Omnibus Site Split – Assembly Uplift	3/2/15	pending	Schedule/Cost	\$750k	3
Pit Manufacturing	PSM-15-071	Omnibus Site Split – AC Uplift	3/2/15	pending	Schedule/Cost	\$920k	3
Pit Manufacturing	PSM-15-072	Omnibus Site Split – QE Uplift	3/2/15	pending	Schedule/Cost	\$200k	3
Pit Equipment	PSM-15-098	Aqueous Waste Line Upgrades	5/6/15	pending	Schedule/Cost	\$508k	3
Pit Equipment	PSM-15-101	(b) (7)(F)	5/19/15	pending	Schedule/Cost	\$393k	3
Pit Equipment	PSM-15-107	Pack/Unpack Upgrades	5/27/15	pending	Scope/ Schedule/Cost	\$350k	3
Pit Manufacturing	PSM-15-108	Technology Investments	5/28/15	6/22/15	Scope/ Schedule/Cost	\$650k	3
Pit Manufacturing	PSM-15-109	Security Upgrades	5/28/15	6/22/15	Scope/ Schedule/Cost	\$150k	3
Production Support	PSM-15-110	University Projects	5/28/15	pending	Scope/ Schedule/Cost	\$310k	3
Pit Equipment	PSM-15-114	CMM#2 Operations and Trunk-line Design	6/1/15	pending	Schedule/Cost	\$400k	3
Pit Equipment	PSM-15-117	CMM#1 Vendor Support Re-baseline	6/4/15	pending	Schedule	none	3

Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05 - Pu Sustainment



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. 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	Completed	March 30, 2015	BLUE	
Receive PMM#2	July 24, 2015	PMM#2 received at LANL seven weeks ahead of schedule.	June 8, 2015	BLUE	
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	Completed	May 11, 2015	BLUE	
Approve PMM#1 Glovebox Fabrication Design for Construction (Release for procurement)	September 11, 2015	On track for completion in early July.		GREEN	
(b) (7)(F)	May 29, 2015	Completed	April 17, 2015	BLUE	
Complete Factory Acceptance Test (b) (7)(F)	September 11, 2015	On track to begin in late July.		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.
 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).
- Precision Measurement Machines (b) (3)
 - PMM#2 was successfully shipped and arrived at LANL on June 8, 2015, seven weeks ahead of schedule.
 - PMM#1 glove box procurement
 - Testing of the ventilation system for temperature stratification started in June.
 - Glovebox procurement package development is on track for July completion
 - (b) (7)(F) (b) (3)
 - Factory Acceptance Testing is scheduled to start July 27 with completion in early August.
 - Chlorine Distribution & Detection System (b) (3)
 - Receipt of miscellaneous consumable hardware is still in process.
 - Foundry Furnace Upgrade, GB-1 (b) (3)
 - Several components off the 23 Kilohertz power supplies were sent back to Norway for replacement and/or modification. The contract is being modified to address additional issues.
 - Two 23 Kilohertz power supplies scheduled to arrive at LANL in early August.

1.3 Issues

- None

1.4 Variance Analysis and Recovery Plan

- None

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1.5 BCRs

- PSM-15-069: This BCR provides funds for engineering and operations new hires to support pit manufacturing.
- PSM-15-070: This BCR provides additional funds to maintain pit assembly capability.
- PSM-15-071: This BCR provides additional funds to maintain analytic Chemistry capability and equipment service contracts.
- PSM-15-072: This BCR provides additional funds to maintain quality engineering capability.
- PSM-15-098: This BCR provides funds to pull up planned FY16 scope for Aqueous Waste Line Upgrades into FY15 to eliminate a potential readiness concern.
- PSM-15-101: This BCR provides funds for the installation of the (b) (7)(F) at SM39.
- PSM-15-107: This BCR provides funds to upgrade the Packing and Unpacking capability at TA-55.
- PSM-15-108: This BCR provides funds to investigate a series of technology investment opportunities in support of pit manufacturing including Pu foundry design, density measurement techniques, etc.
- PSM-15-109: This BCR provides funds to upgrade security doors at SM-39 to provide student access to a “cold” workshop.
- PSM-15-110: This BCR provides funds for students at UNM and USC.
- PSM-15-114: This BCR provides funds to include additional in-scope scope associated with surface profilometry, part radiography and leak testing either on machine, in the glovebox or in the vicinity of the new CMMs.
- PSM-15-117: This BCR moves FY15 vendor support scope from FY15 to FY16 and FY17. Planned FY15 costs will push out onto future fiscal years but funds will remain as vendor commitments with no impact to lifecycle budget requirements or FY15 funding requirements.

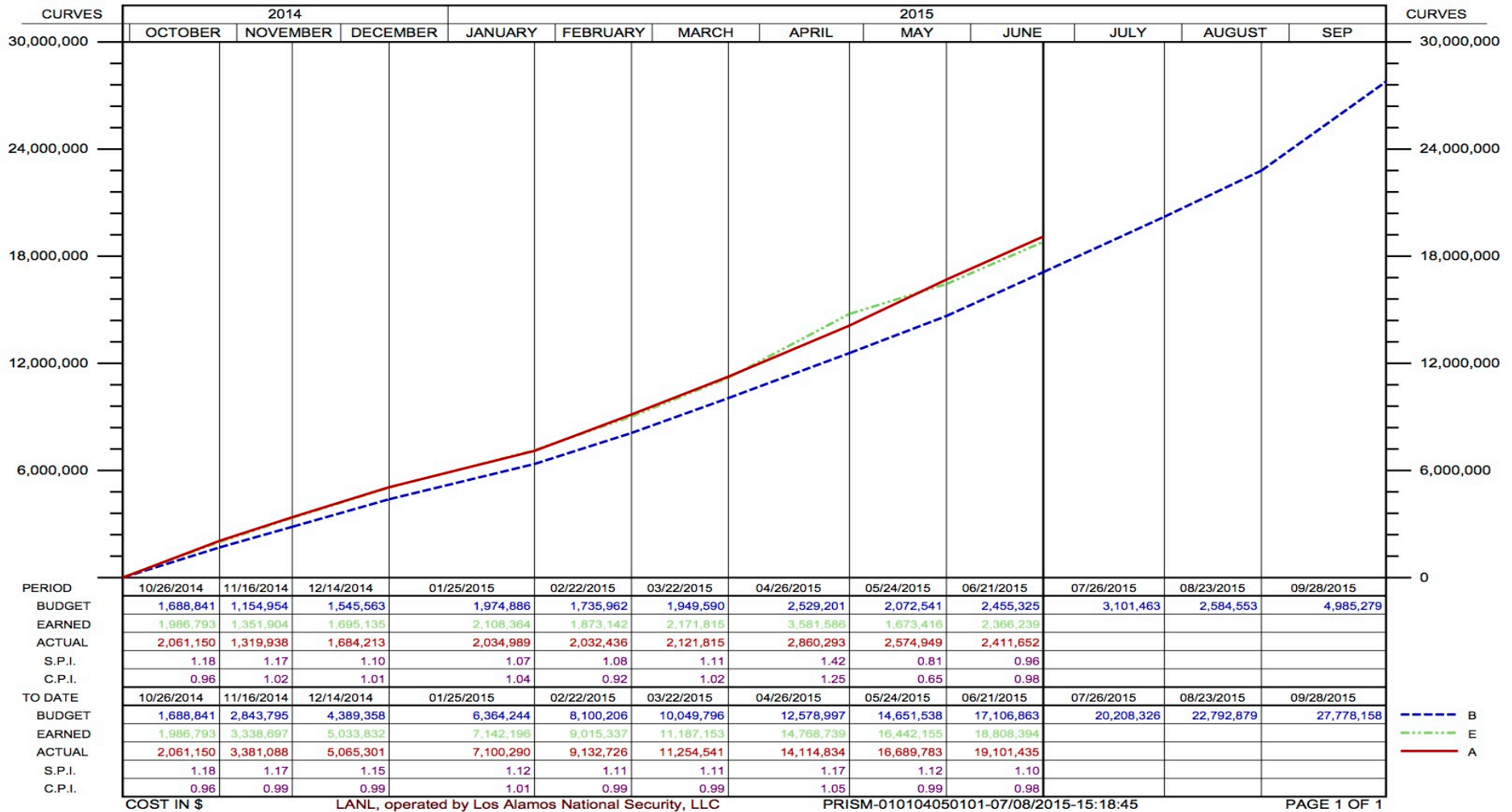
1.6 Risk Table

Work	Description	Handling Strategy	Status
(b) (7)(F)	(b) (7)(F)	Risk has been realized. The Pit Flowsheet is not scheduled to complete readiness until January 2016.	(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

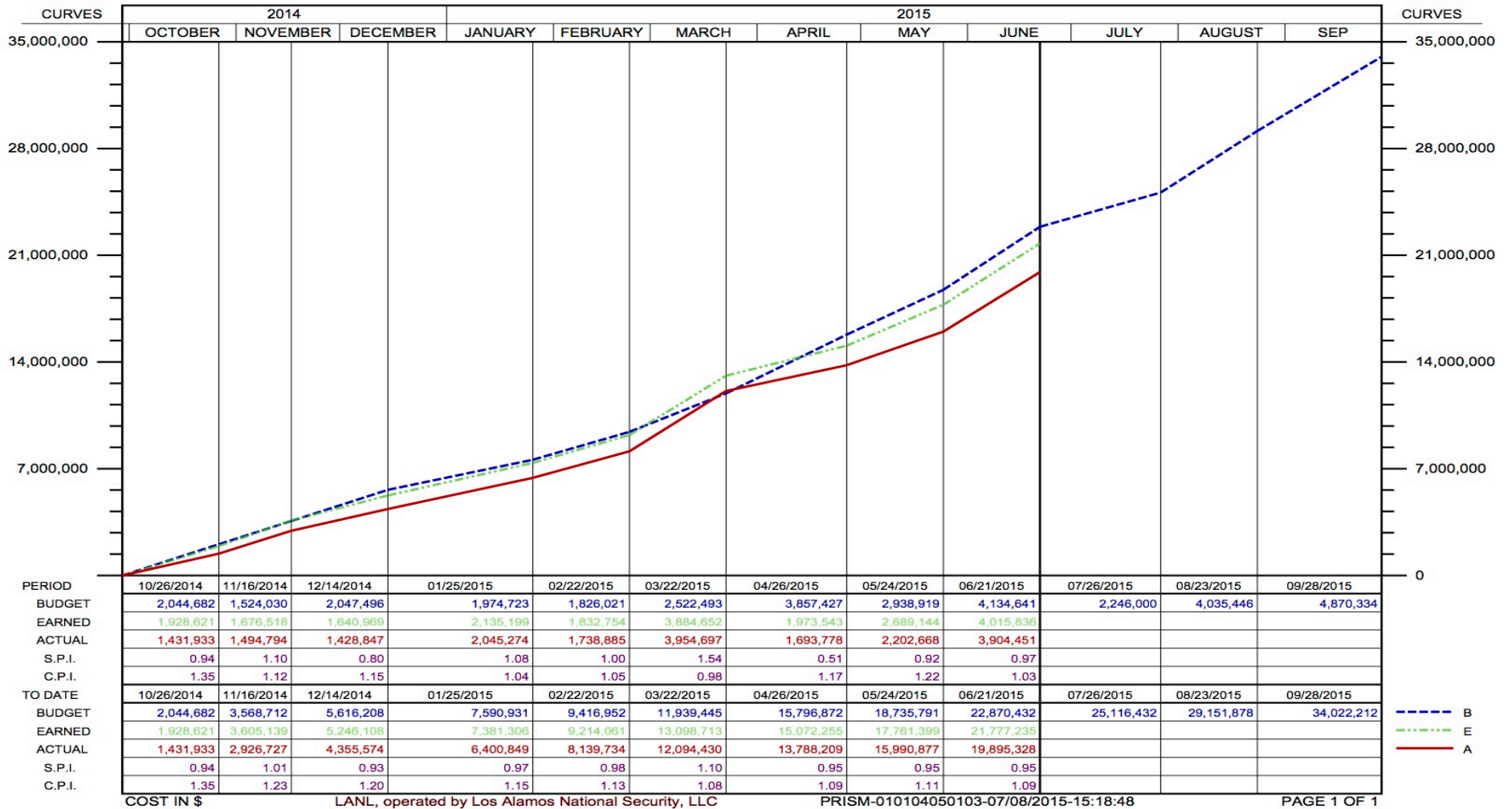
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01.01.04.05.01.01 - Pit Manufacturing and Design D



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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	Completed	February 3, 2015	BLUE	
Install prototype Xenon leak check station in ATF	September 30, 2015	All components except 2 transducers have arrived; final assembly and testing will commence in July.		GREEN	
Manufacture surrogate Power Supply using KCP-provided DEV 2 components	September 30, 2015	Completed	February 5, 2015	BLUE	

2.1 Technical Progress

- The final approval for commencing operations with actual fully fueled heat sources in PF-5 occurred on June 29, 2015.
- LANL successfully transferred six fueled units designated for the "Live" unit build from PF-4 to PF-5 on June 30, 2015.
- The assembly and testing of the Live Units will be observed and recorded by a Management Observation Team (MOT) as verification that PF-5 is in full compliance with all procedures and requirements for operations. LANL is currently on track to complete assembly and tests for three of the units (3 full iterations are required by the MOT) by July 31, 2015.
- Preparation for Baseline Design Review (BDR) started in May and will continue through July; LANL has updated the Production Strategy document, and provided actual photographs of current processes. The BDR is currently scheduled to take place on August 4, 2015.

2.2 Equipment

- The final connections to the mass spectrometer and the xenon leak testing station are scheduled for mid-July completion. The system is then be operational and ready to be commissioned by the manufacturer in late July.

2.3 Issues

- None

2.4 Variance Analysis and Recovery Plan

- None

2.5 BCRs

- None

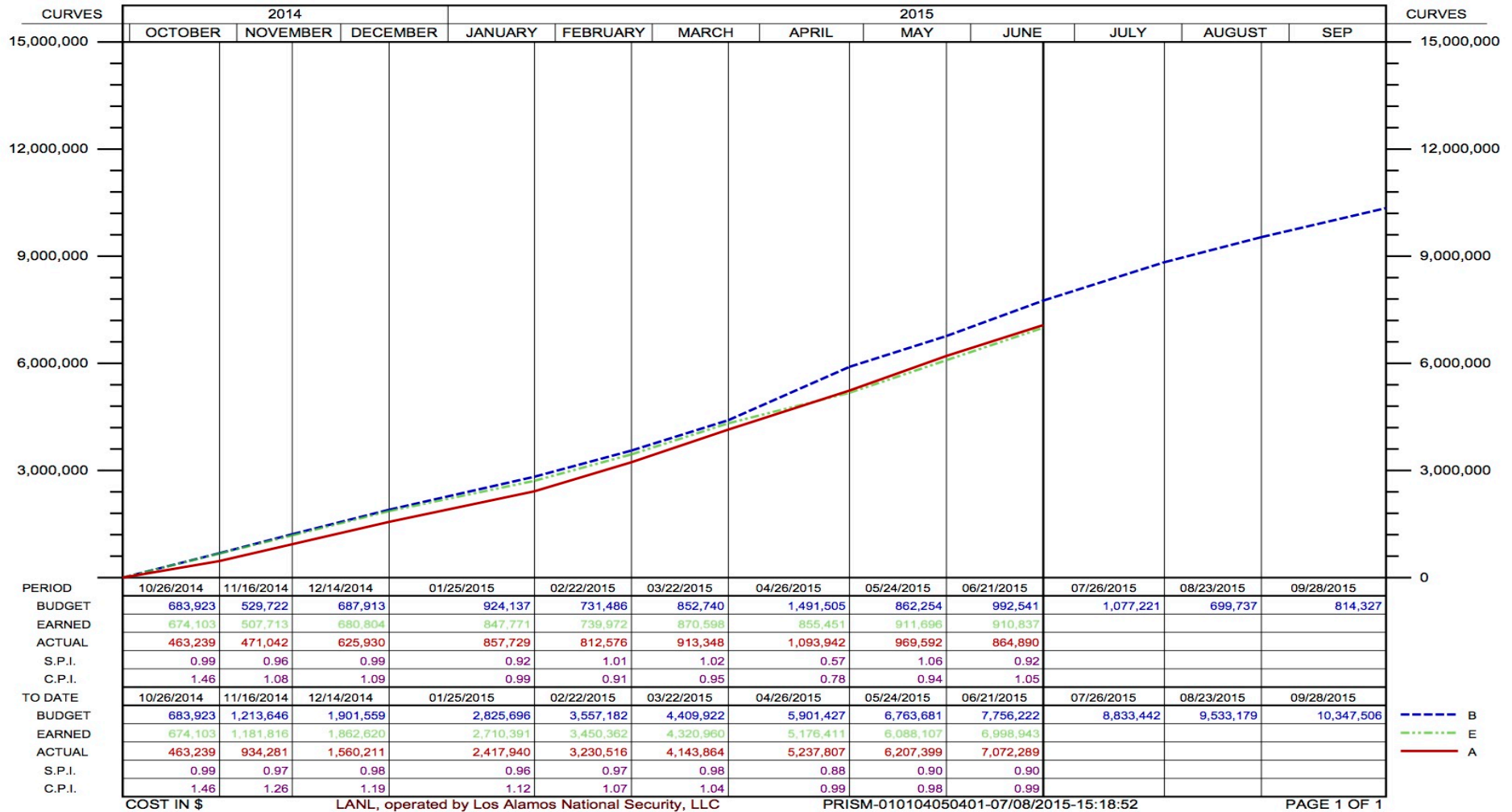
2.6 Risk Table

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)	
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

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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	Issued	May 22, 2015	BLUE
May Report	June 24, 2015	Issued	June 24, 2015	BLUE
June Report	July 24, 2015	Issued	July 23, 2015	BLUE
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. In particular, developing a new suite of work packages in support of the multi-program Manufacturing Modernization System (MMS) effort. The MMS project is focused on implementing a fully digital manufacturing and product acceptance capability for plutonium product lines in time to meet program milestones.
- The process continues to replace the S&CL's current metrology information management system Mudcats. Indysoft has been identified as the replacement software. Work continues on accelerometer calibration capability with final testing, gage R&R, and measurement uncertainty analysis in progress. It is anticipated that Indysoft will interface with the new Manufacturing Modernization suite of software tools to improve scheduling and processing cycle time.
- Production support program management now being shared with two PMs.

3.2 Support

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

3.3 Issues

- There continues to be significant uncertainty in the projected spending for readiness activities and several equipment projects affected by readiness (ie. (b) (7)(F) Readiness funds for areas projecting under runs are being repurposed by accelerating existing projects (ie. ER Line upgrades, CMM) and starting up several

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new projects that address emergent issues (ie. 400 area, Packing/Unpacking room, and fire suppression equipment).

- Pu Sustainment support for (b) (7)(F) development needs to be formally agreed to allow FY16 work package planning to be completed.
- Pu Sustainment support for LANL Manufacturing Modernization project (formerly I-WEPS) needs to be finalized.

3.4 Variance Analysis and Recovery Plan

- None

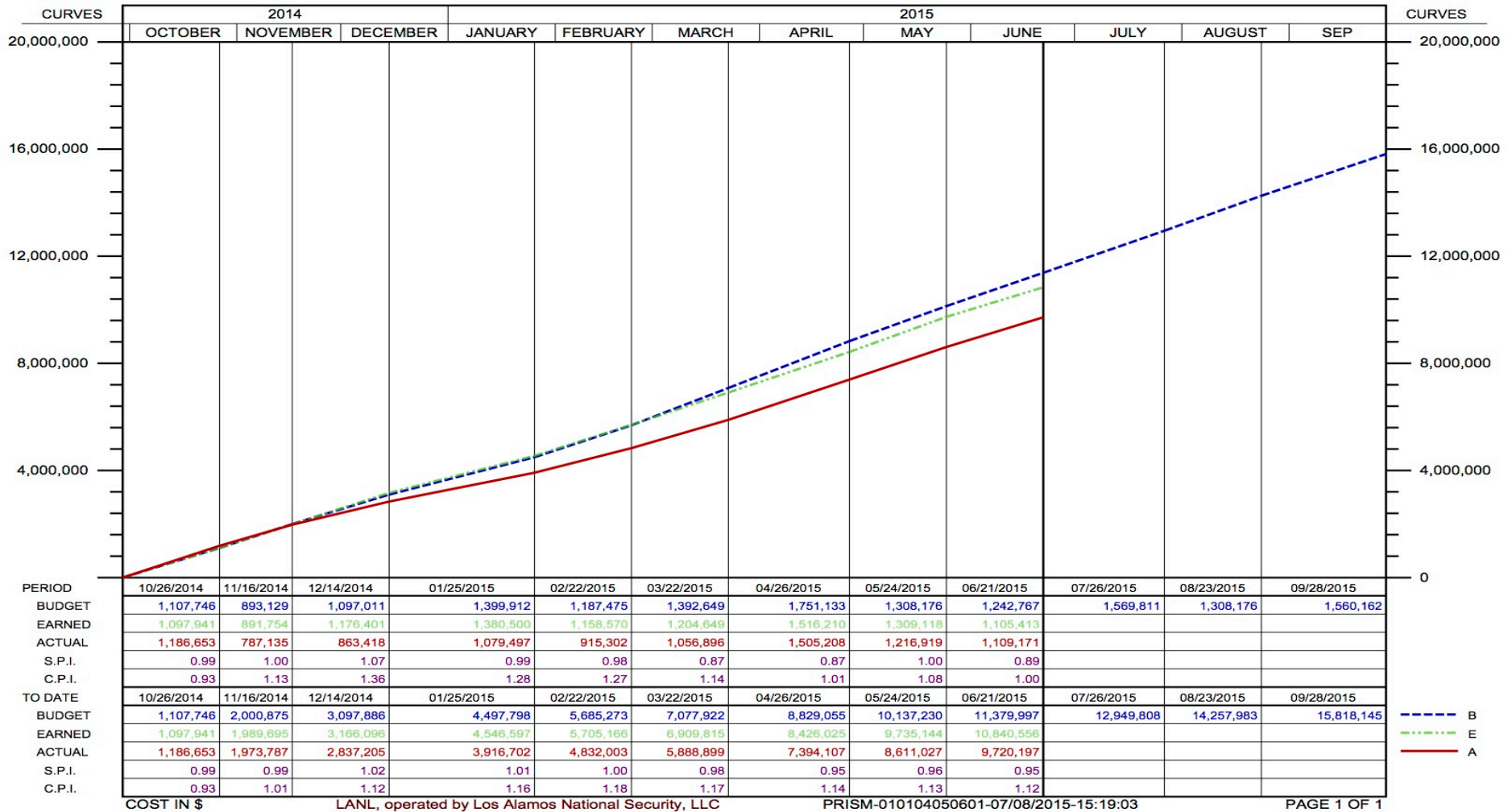
3.5 BCRs

- PSM-15-045: This BCR provides additional funds for corrective maintenance (300 and 400 area).
- PSM-15-046: This BCR provides additional funds for corrective maintenance (200 area).
- PSM-15-110: This BCR provides funds to support student projects (UNM and USC).

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

- Preventive and corrective maintenance on track with no issues.
- PF-4 Readiness
 - (b) (7)(F) – The readiness team submitted the request to resume operations on June 5.
 - Machining –The Federal Readiness Assessment began on June 22.
 - Pit Flow Sheet – The Management Self Assessment (MSA) was closed out. Criticality safety evaluations for pit flow sheet are significantly delayed and beginning to challenge the accelerated target date for the CRA (July 27, 2015).
 - Furnaces/Casting/ARIES and Pyrochemistry – Casting and Pyrochemistry continue to work MSA preparation activities. Criticality safety evaluations continue to be the pacing function for these readiness areas. The project is working closely with Nuclear Criticality Safety to better understand Furnace/Casting/ARIES and Pyrochemistry detailed schedules that are trending significant delays.

4.2 Equipment

- None

4.3 Issues

- No TRU waste can be shipped to TA-54 as a result of a recently declared PISA
- An Integrated Project Team has been formed to address the issue of shipment of TRU waste from TA-55 to TA-54

4.4 Variance Analysis and Recovery Plan

- None

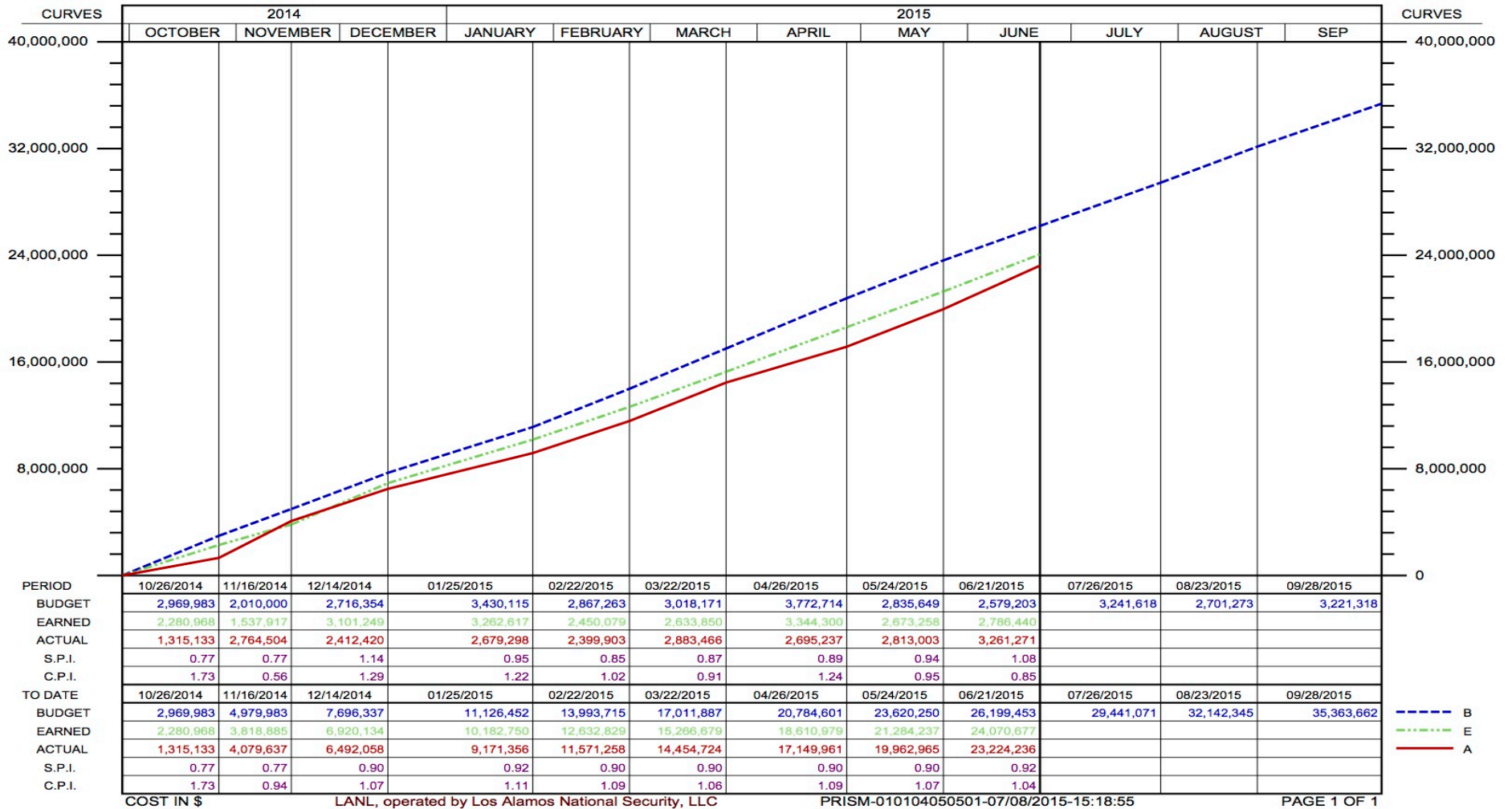
4.5 BCRs

- None

4.6 Earned Value Metrics

PERFORMANCE S-CURVE

01.01.04.05.05.01 - RTBF Recovery



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PERFORMANCE S-CURVE 01.01.04.05.05.02 - Waste & Other Landlord Recover

