

Los Alamos National Laboratory
&
Lawrence Livermore National Laboratory
Plutonium Sustainment Monthly Program Review

December 2011

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Executive Summary

In December of 2011 the Plutonium Sustainment program at LANL completed or addressed the following high-level activities:

- 1) Started construction on the Power Supply Assembly Area facility, which is the capability that historically was performed at the Pinellas Plant.
- 2) Completed essentially all work associated with fabrication and inspection of the final (b) (7)(F). A minor amount of inspection activity will occur in January. This pit is expected to be Diamond Stamped in the 2nd quarter of FY12.
- 3) Formed the team to produce the Plutonium Sustainment Manufacturing Study and started twice weekly meetings of the core team.

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 the CR or FY12 final budget guidance.

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

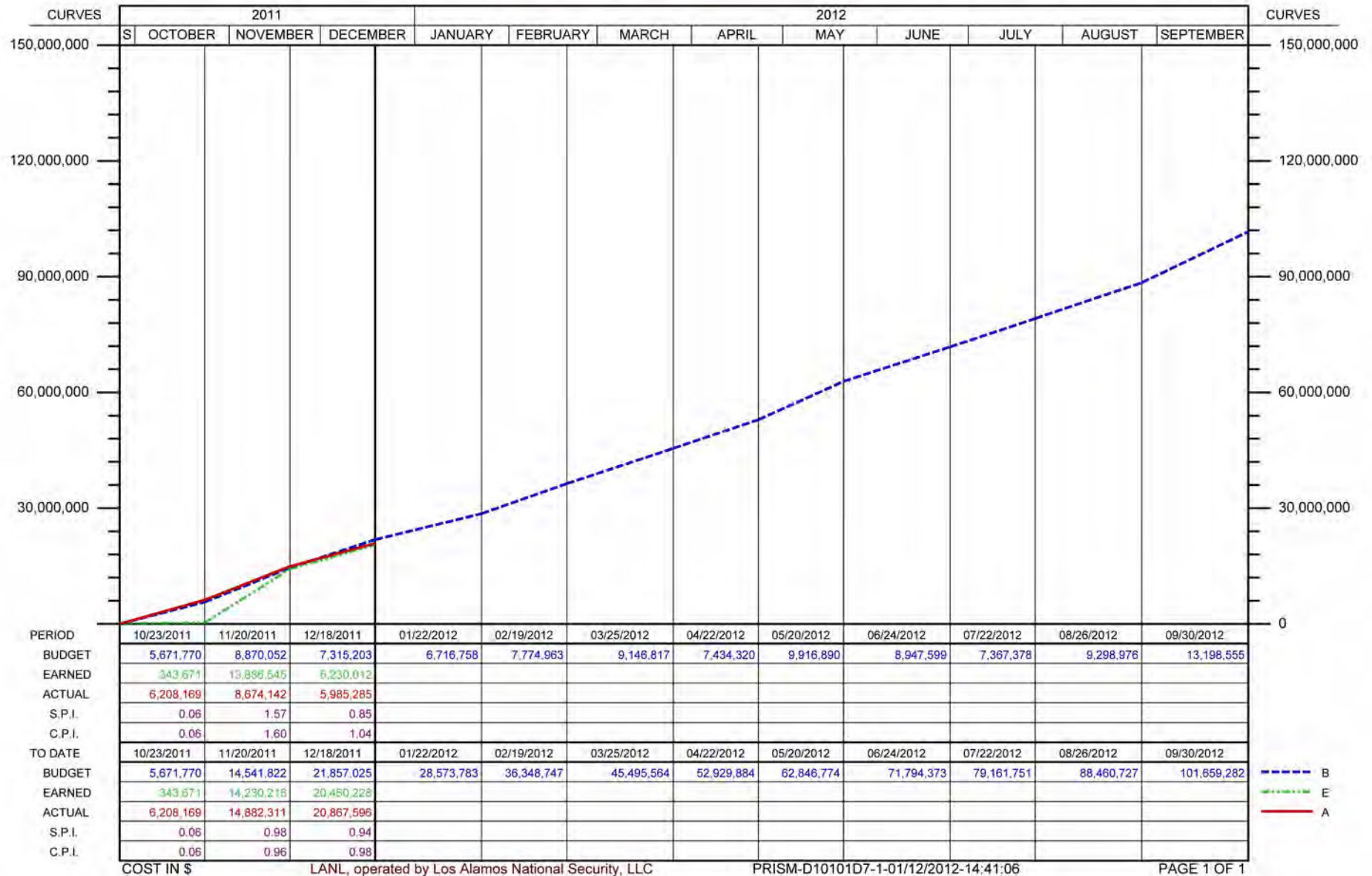
Each of the 5 major WBS elements is discussed in detail below with a section at the end that is provided by LLNL.

UNCLASSIFIED

Earned Value Metrics (add the Total EVM plot as well she wants both)

PERFORMANCE S-CURVE

Pu Sustainmnet W/O Facility Infrastructure



1.0 LANL - Pit Development

MRT 4196	GREEN	<i>Perform Activities to Sustain Base Pit Material Processing and Fabrication Capability</i>	
1. (b) (7)(F)			
2. Continue installation and upgrade to pit capability equipment per PEP			
3. (b) (7)(F)			
L3 Milestone	Baseline Date	RGYB	Status/Comments
Procedures Modifications Complete	BCR Initiated	GREEN	
Minimum non-WR or prototype tooling necessary for the EDU build is available for use.	BCR Initiated	GREEN	
Non-nuclear components necessary for an (b) (7)(F) are available for use.	BCR Initiated	GREEN	
Suitable nuclear material is available as ER	BCR Initiated	GREEN	
(b) (7)(F) Upgrade Complete	BCR Initiated	GREEN	
(b) (7)(F) Operational	BCR Initiated	GREEN	
Preparation Unit Installed	BCR Initiated	GREEN	

1.1 Technical Progress

- (b) (7)(F) is in Final Inspection. One NCR has been identified and is being dispositioned.
- Assembly of the (b) (7)(F) was completed with NDE to be performed in January.

1.2 Equipment

(b) (7)(F)

- Sampling of interior surfaces and oil below action thresholds
- Initial Issues identified require additional evaluation to resolve
 - Grounding issues
 - Filtration of chamber exhaust
- Further evaluation will continue
- BCR to further refine tasks for evaluation and refurbishment

(b) (7)(F)

- Procurement of subcomponents, such as the Safety Significant boots, was submitted.

Surface Preparation Cold Testing

- Completed Benchtop Testing
- Replacement drive motors have been ordered (spare parts – risk mitigation)

- Awaiting feedthrough panel (ordered in November, but not received) for hot installation.

1.3 Issues

- Product acceptance support will be available on a limited basis, as efforts have been diverted to support urgent a detonator delivery. Therefore, Diamond stamping of (b) (7)(F) will occur in February.

1.4 Variance Analysis and Recovery Plan

- CPI for Pit Manufacturing is 0.86. There are two main contributors for this.
 - Pyrochemistry – Metal Production was impacted by actions to resolve a facility-wide criticality safety issue. The electro-refining (ER) line was paused and resources were expended on corrective actions. Control of spend rate and resumption of metal production will resolve this portion of the CPI variance by the end of the second quarter.
 - Maintenance – The Maintenance work package was moved from the Pit Development WBS element to the Program Management and Support WBS element. However the costs were initially collected in the Pit Development WBS element. The costs associated with maintenance will be transferred in the next few months to the proper WBS element.

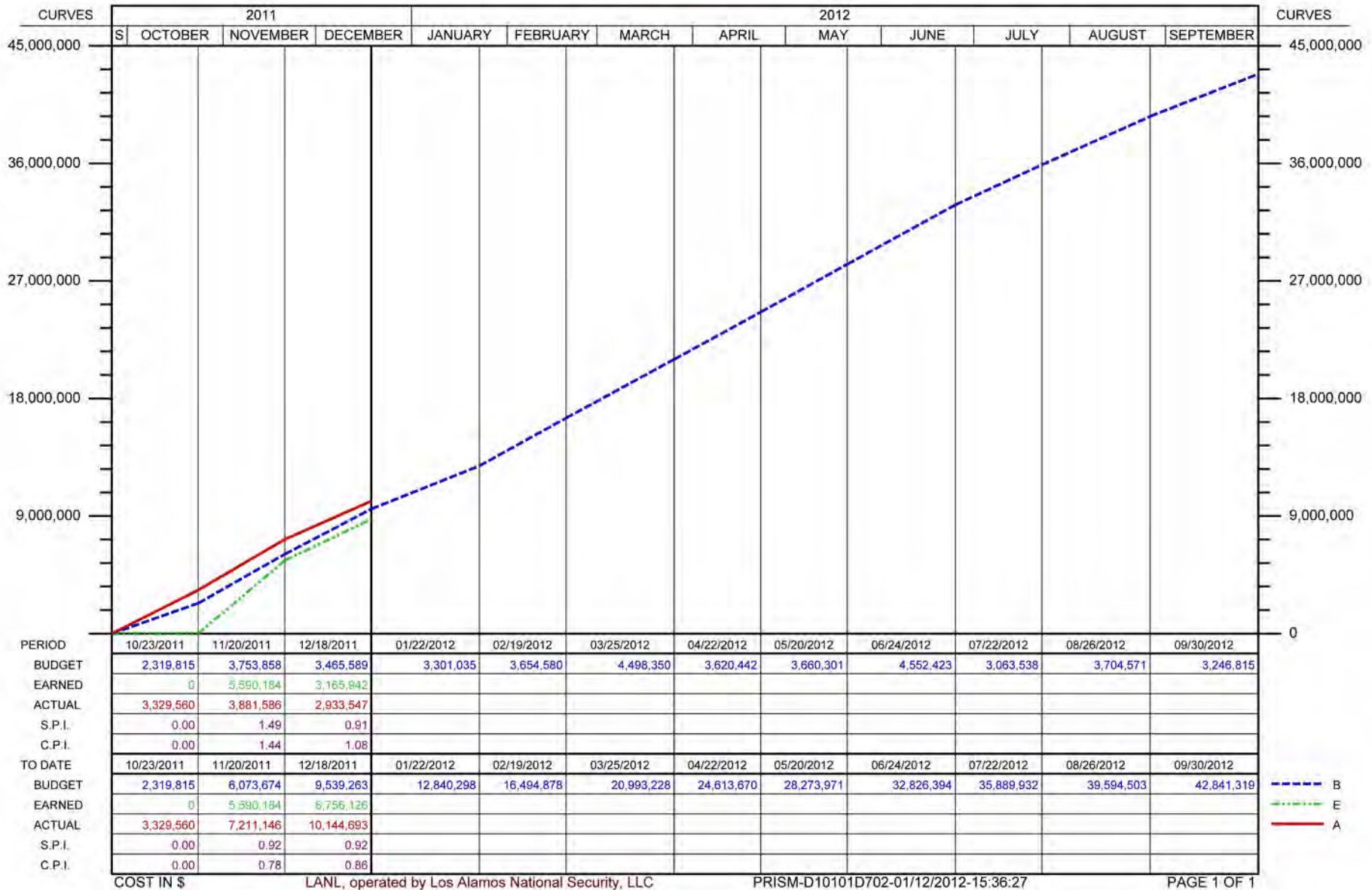
1.5 BCRs

- None

1.6 Earned Value Metrics

PERFORMANCE S-CURVE

Pit Manufacturing



2.0 LANL – Experimental Component

2.1 Technical Progress

- Second set of (b) (7)(F) was cast and the characterization is 90% complete.
- Started design of heat treat fixtures to recover the first set of (b) (7)(F), which had densities that are out of specification.

2.2 Equipment

- Started unclassified testing of new control system and on-machine gauging of the cold (b) (7)(F).

2.3 Issues

- None

2.4 Variance Analysis and Recovery Plan

- None

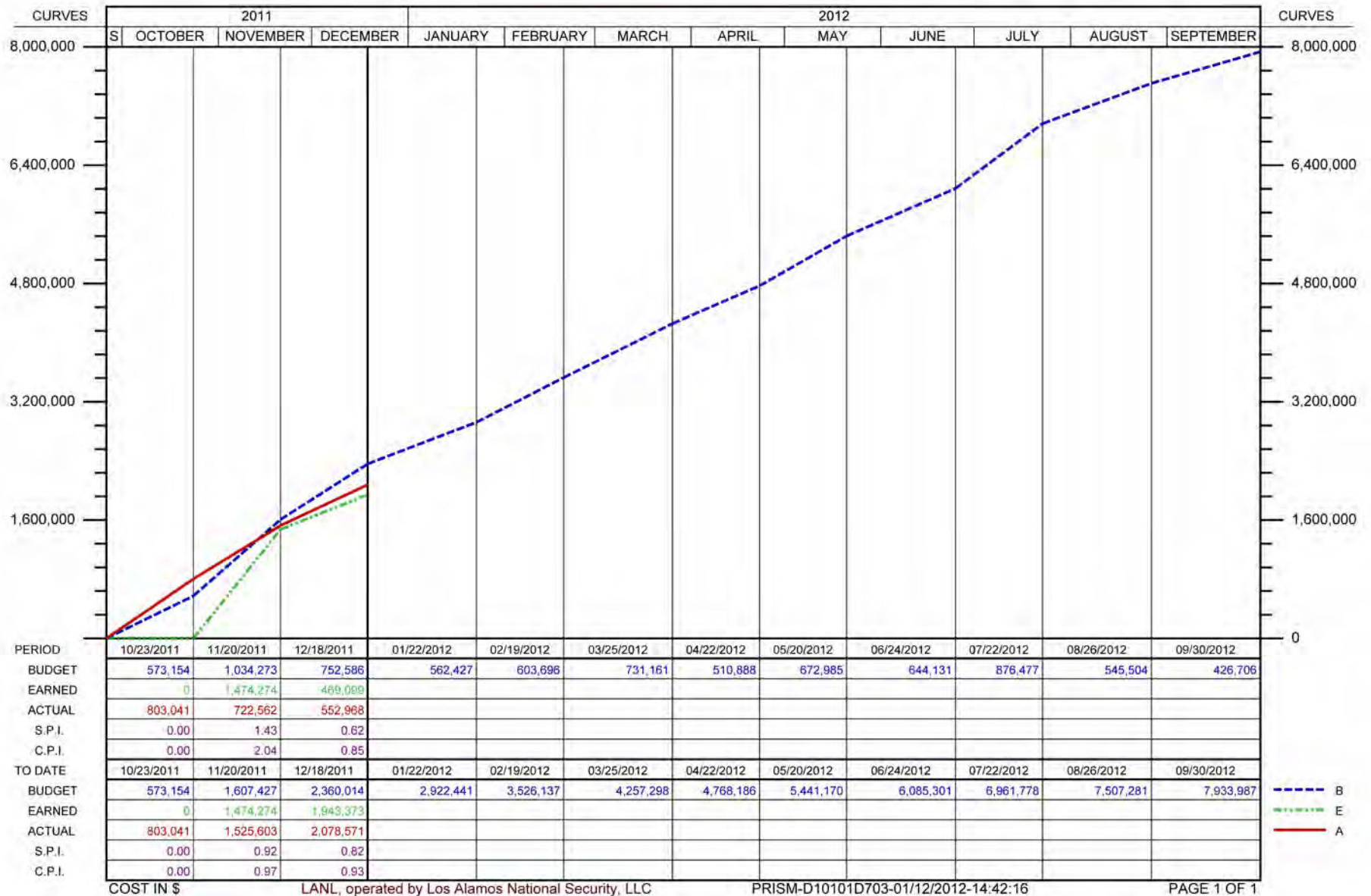
2.5 BCRs

- None

2.6 Earned Value Metrics

PERFORMANCE S-CURVE

Experimental Component Manufacturing



3.0 LANL - Power Supply

3.1 Technical Progress

3.2 Equipment

- Power Supply Assembly Area (PSAA)
o Construction Started?
- The (b) (7)(F)
o XX% design and constructability review completed
- Analytical Chemistry Gloveboxes (Pu Assay and Radiochemistry)
o

3.3 Issues

3.4 Variance Analysis and Recovery Plan

- None

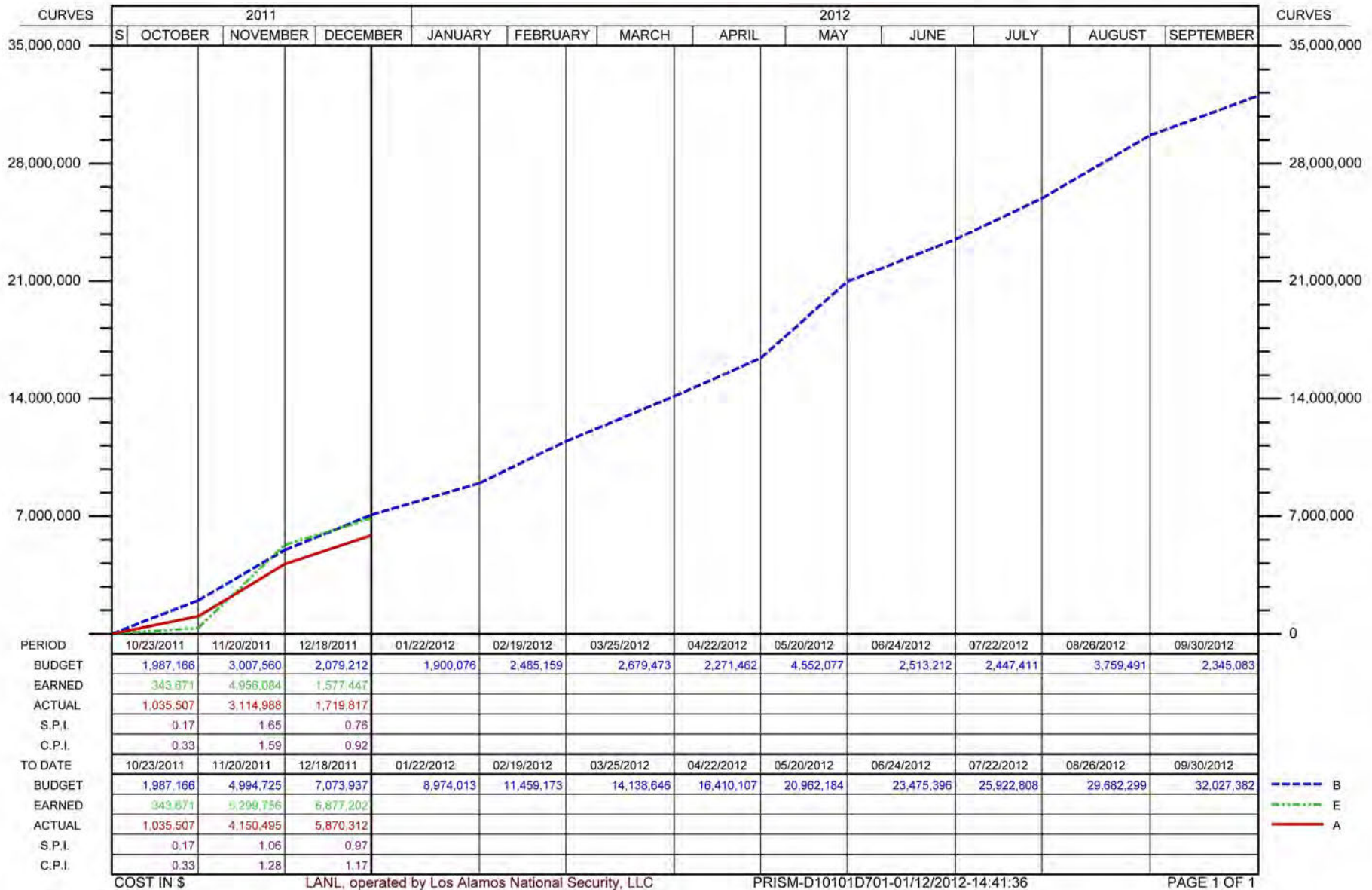
3.5 BCRs

- None

3.6 Earned Value Metrics

PERFORMANCE S-CURVE

Reconstitution of Power Supply Manufacturing



4.0 Program Management and Support

4.1 Technical Progress

- Plutonium Sustainment and Manufacturing Study meeting held in Albuquerque to discuss and finalize scope and base case definition.
- Input submitted to EPAT for the upcoming budget summit.

4.2 Equipment

- None

4.3 Issues

- None

4.4 Variance Analysis and Recovery Plan

- None

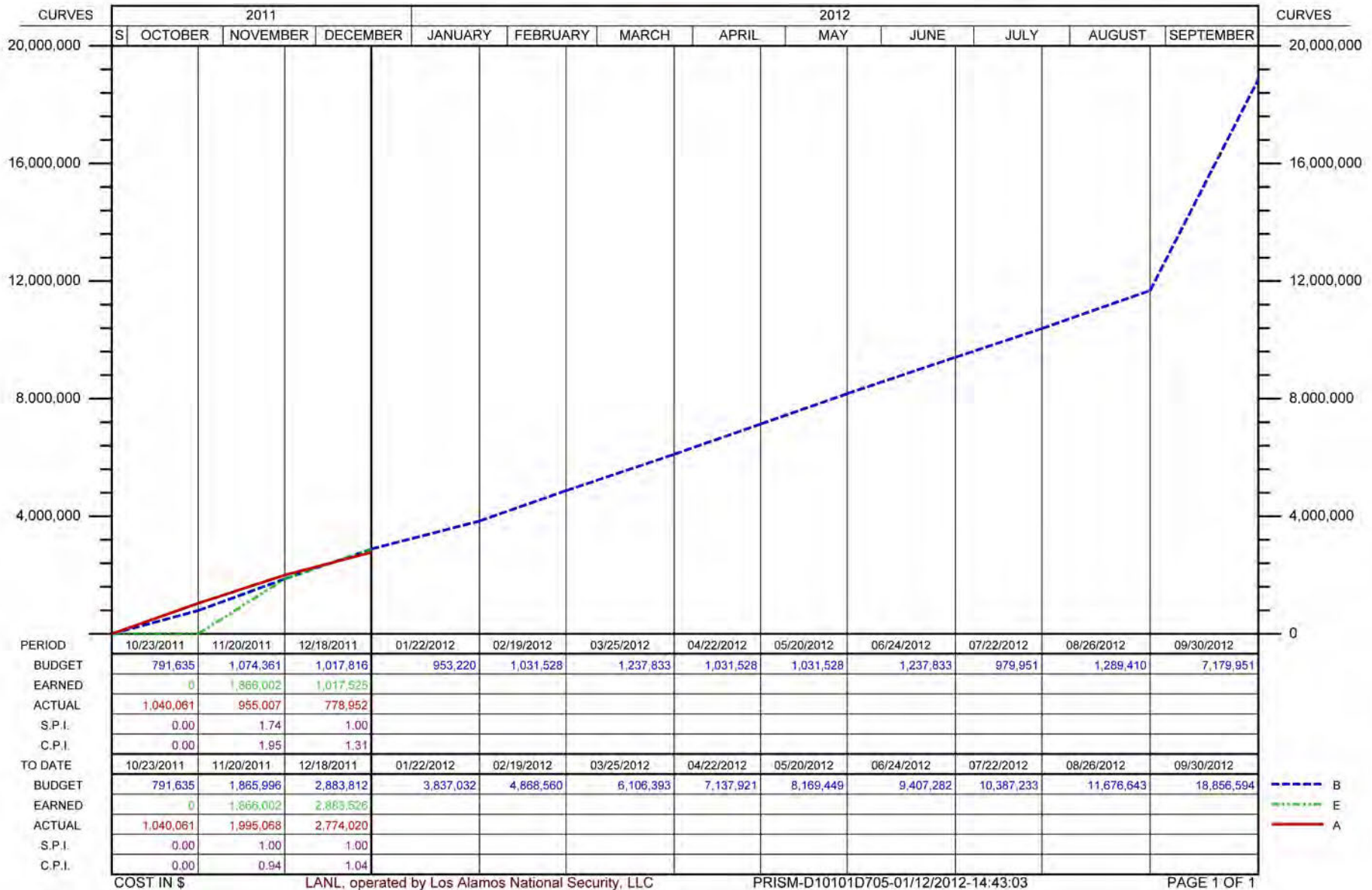
4.5 BCRs

- Processed a BCR for C-CDE to finish off the MTL/WRMCB and took funds from waste....

4.6 Earned Value Metrics

PERFORMANCE S-CURVE

Program Office



5.0 Facilities, Waste and Institutional Support

5.1 Technical Progress

- In the future the percentage of facility availability will be tracked here.

5.2 Equipment

- None

5.3 Issues

- None

5.4 Variance Analysis and Recovery Plan

- None

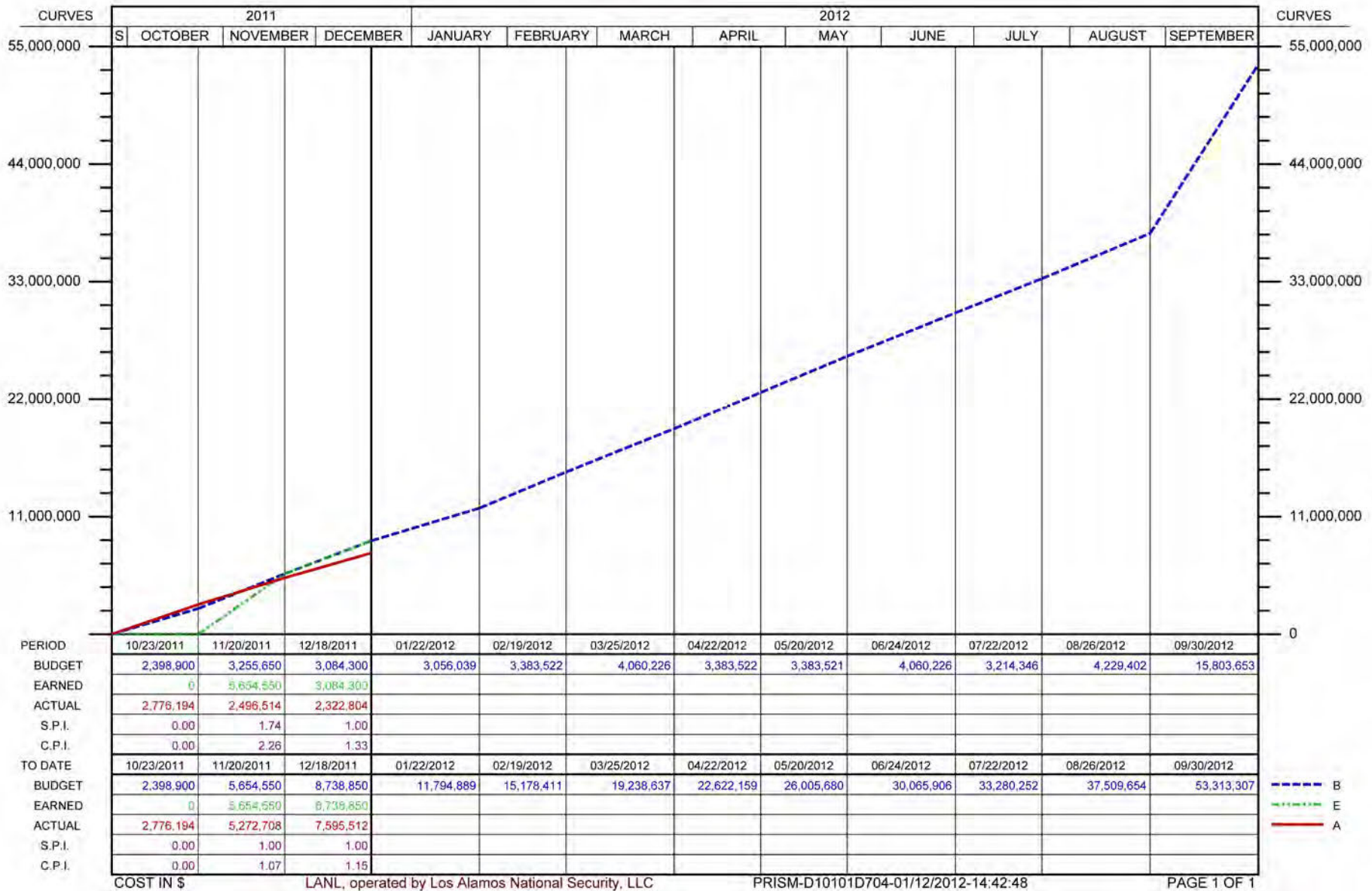
5.5 BCRs

- BCR from prior section here as well or perhaps one table in the executive summary...

5.6 Earned Value Metrics

PERFORMANCE S-CURVE

Facility Infrastructure



6.0 LLNL

6.1 Technical Progress

- (b) (7)(F)
- (b) (7)(F)
- Submitted (b) (7)(F) Inspection procedure to LANL for review.
- (b) (7)(F) fixture design in progress, received electronic files of existing fixturing from LANL.
- 2 LLNL FMHs went to LANL and completed training and are now certified at LANL.
- (b) (7)(F)
- (b) (7)(F)
- (b) (7)(F) software development in progress.
- New tubes procured for use in welding and testing.
- Several LLNL Subject Matter Expert (SME) walk downs of LANL equipment and glove boxes performed.
- Parts received in December.
- Two (b) (7)(F) prepared through casting.
- Two (b) (7)(F) runs completed.

6.2 Equipment

- Modern Foundry cold testing progressed
 - o Determined lift motor for build and break down glovebox lift insufficient for power pallet and cartridge
 - o Upgrading design for larger motor
- Continuing with electrical installation
- Toured (b) (6) and (b) (6) through Modern Foundry with discussions of use for NA-20

6.3 Issues

- None

6.4 Variance Analysis and Recovery Plan

- None

6.5 BCRs

- None