
12 GeV History, Status and Rebaseline

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12 GeV Project Manager

EVMS Surveillance Review
December 4-5, 2013



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Thomas Jefferson National Accelerator Facility

December 4-5, 2013



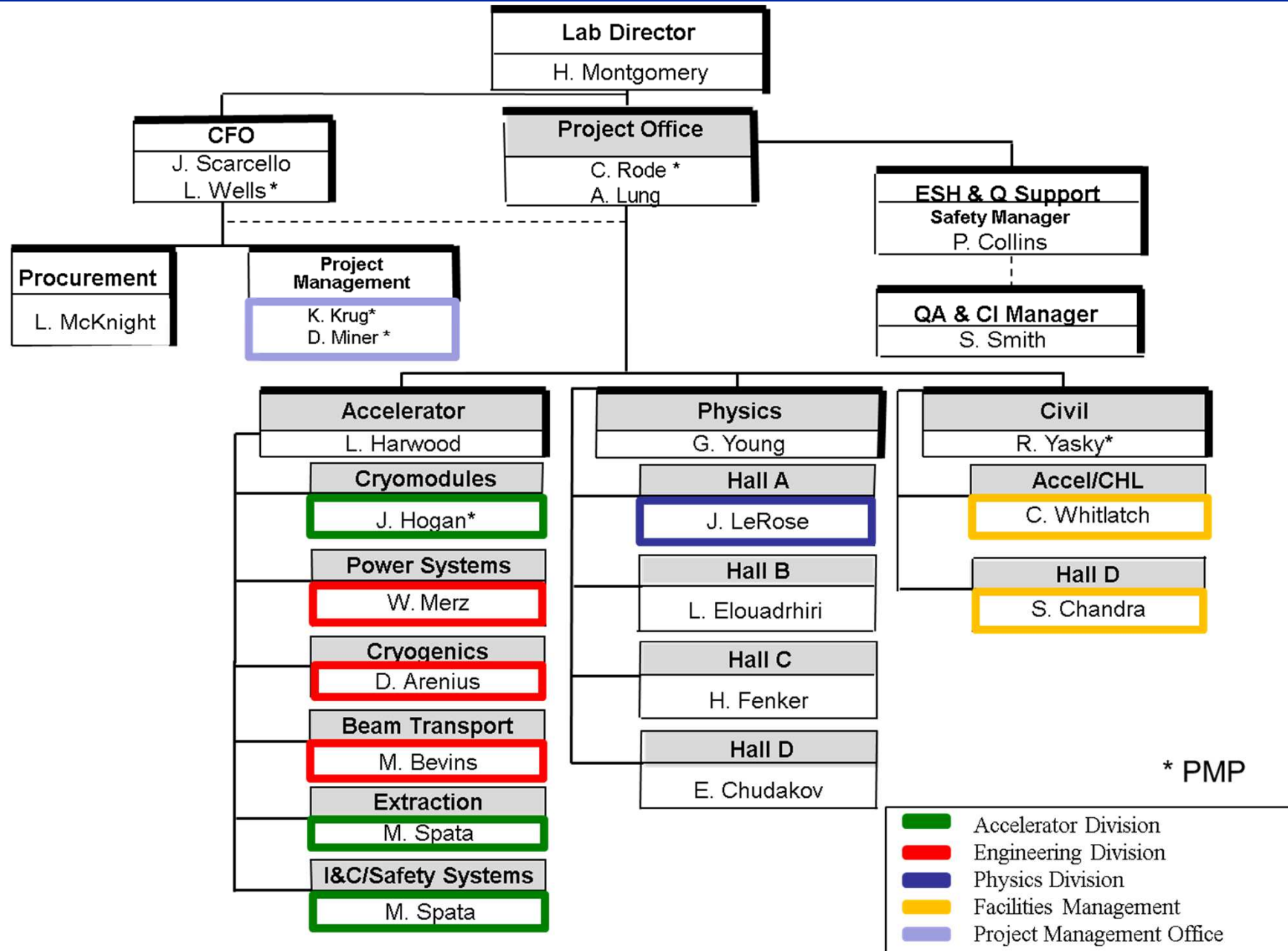
OUTLINE

- **Overview & Status**
- **Funding Profiles**
- **Schedule and Schedule Contingency**
- **Re-baseline**
- **Summary**

OVERVIEW

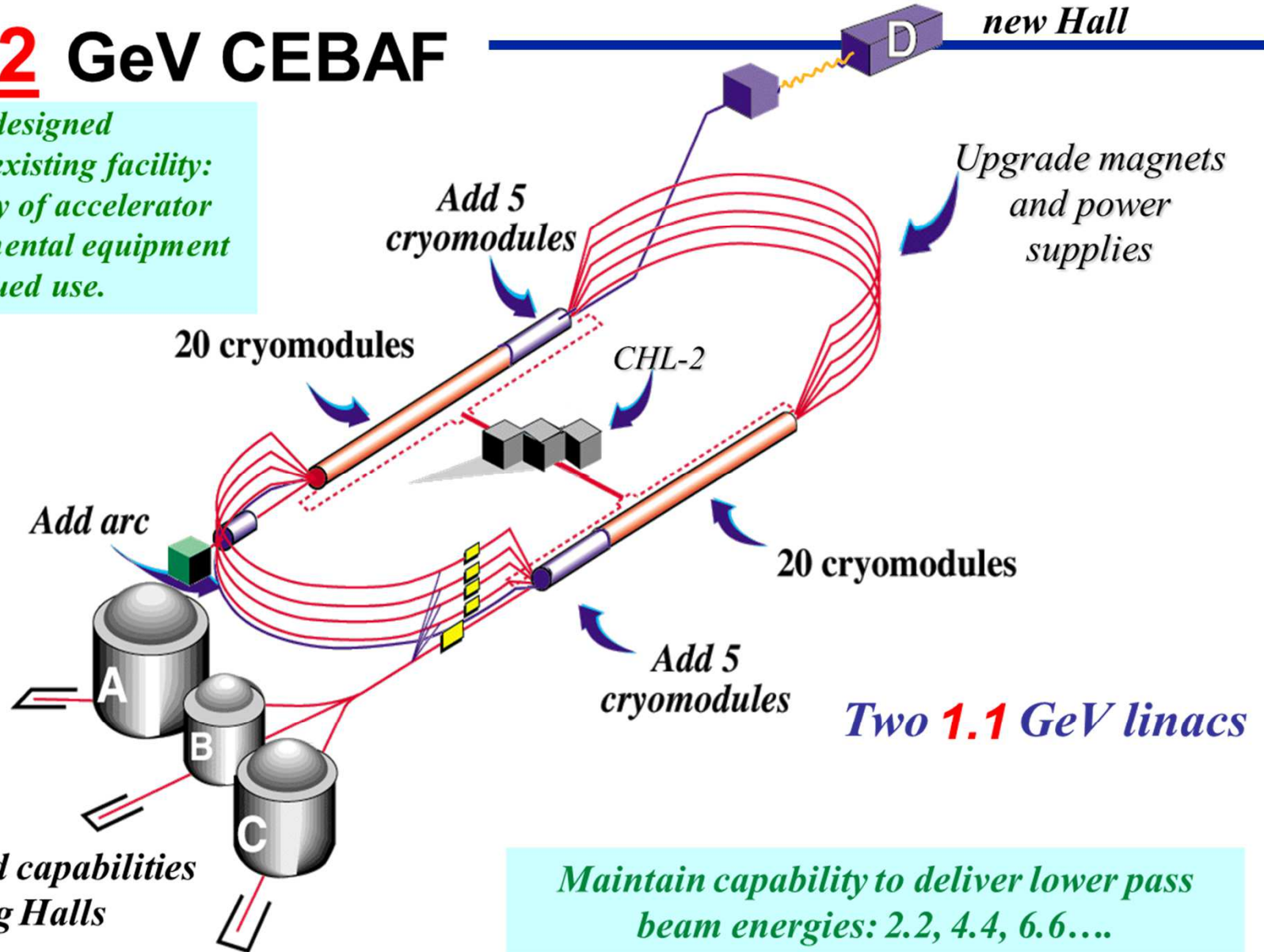
- Overall 12 GeV progress has been good with respect to rebaseline; percentage complete:
 - ❖ **Civil 93%, Accelerator 97%, Physics 70%**
- Accelerator commissioning has started
- Combination of FY12 funding shortfall and SC magnet contract challenges drove this rebaseline
- The SC Magnets for Halls B & C are on the Critical Path
- A robust rebaseline plan that incorporates a bottoms-up ETC with a quantitative risk-based contingency analysis has been implemented as of 1-SEP-2013

JLAB 12 GeV PROJECT ORGANIZATION



12 GeV CEBAF

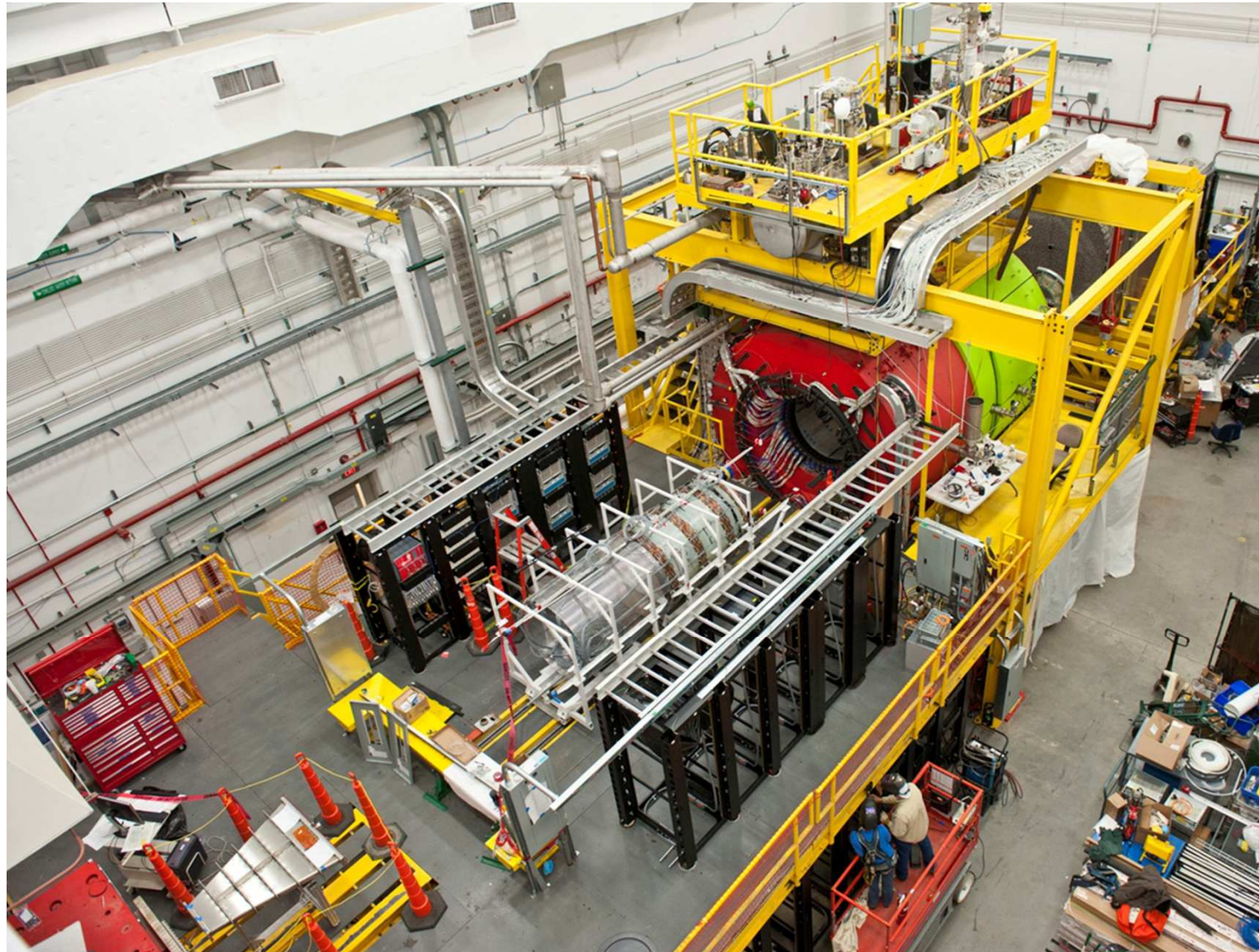
Upgrade is designed to build on existing facility: vast majority of accelerator and experimental equipment have continued use.



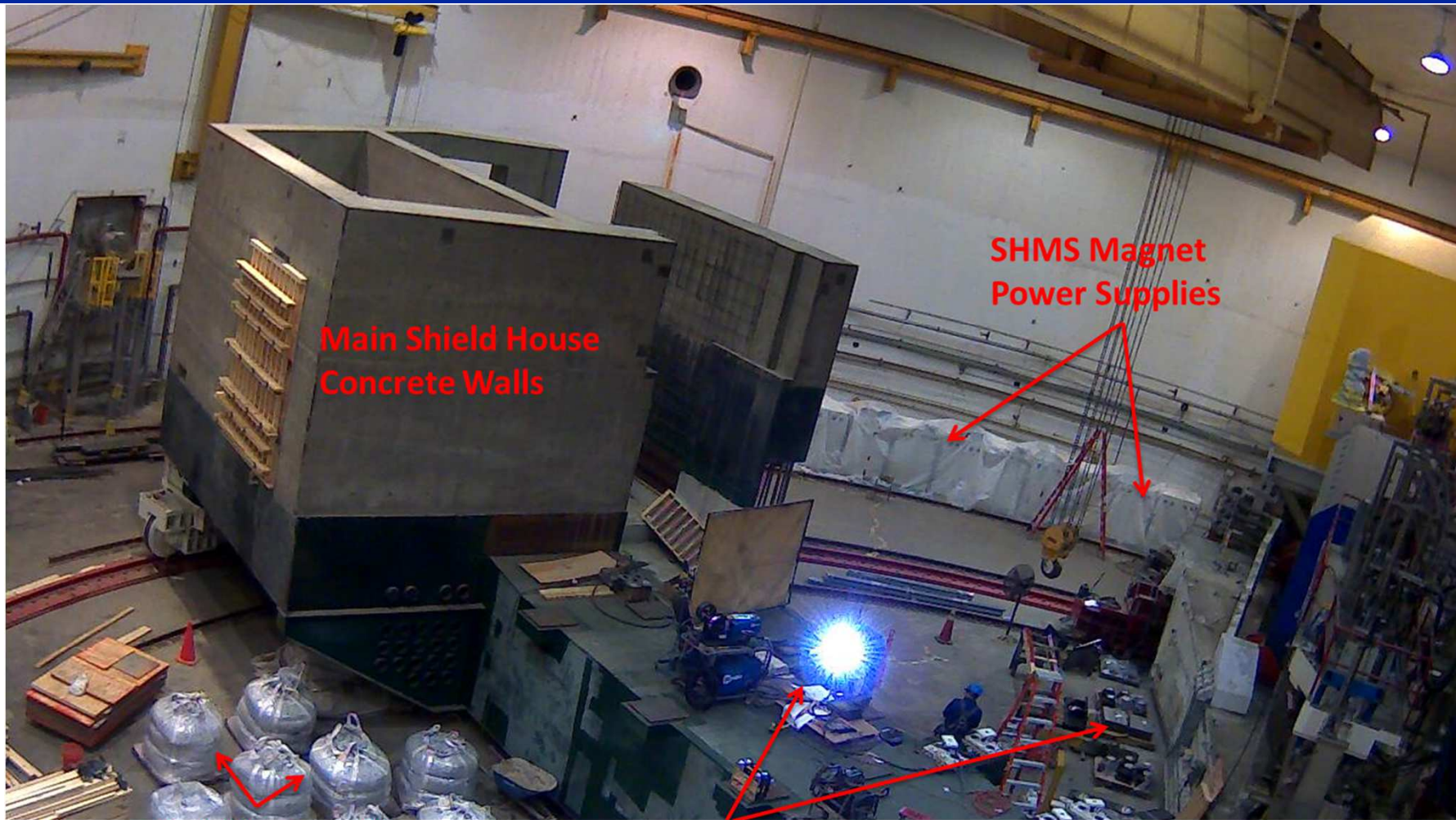
ACCELERATOR – INSTALLATION 16-MONTH SHUTDOWN HAS ENDED



HALL D SOLENOID OPERATIONAL, DETECTOR INSTALLATION IN PROGRESS



HALL C – SHIELD HOUSE COMPLETED



Main Shield House
Concrete Walls

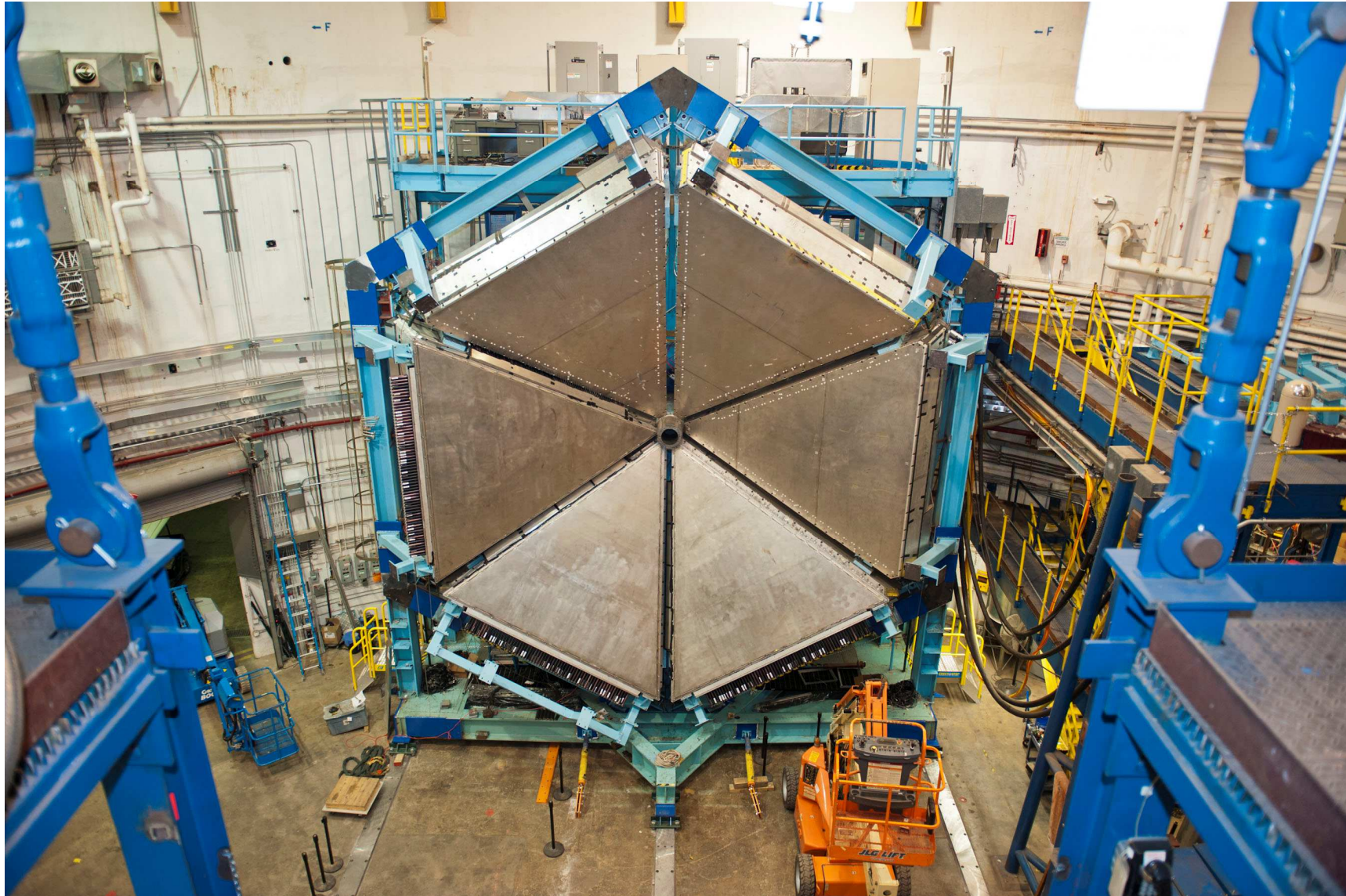
SHMS Magnet
Power Supplies

Boron-Carbide staged for
mixing the interior layer of
concrete shielding

SHMS Magnet Stands

13-Nov-2013

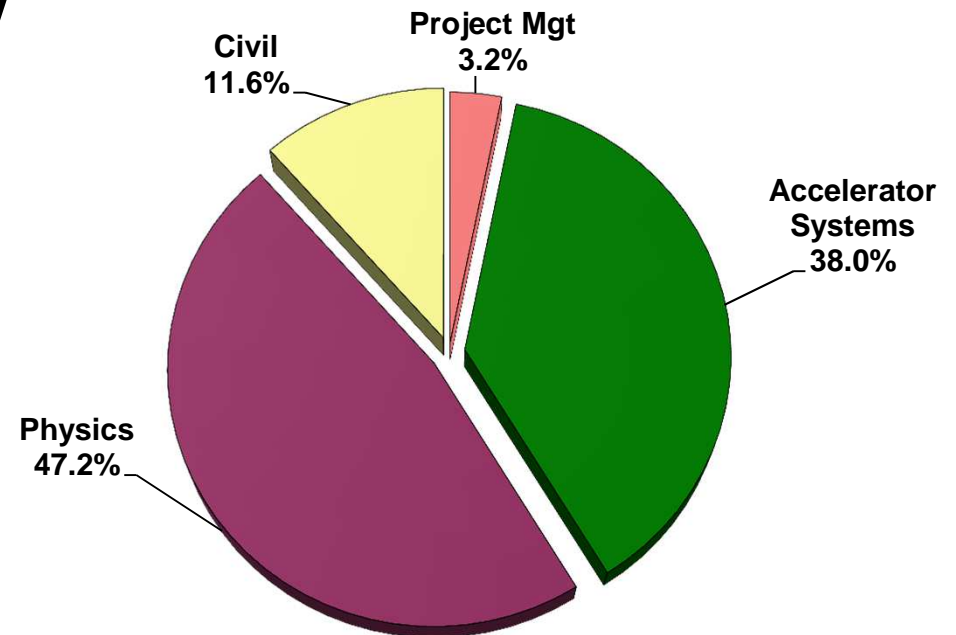
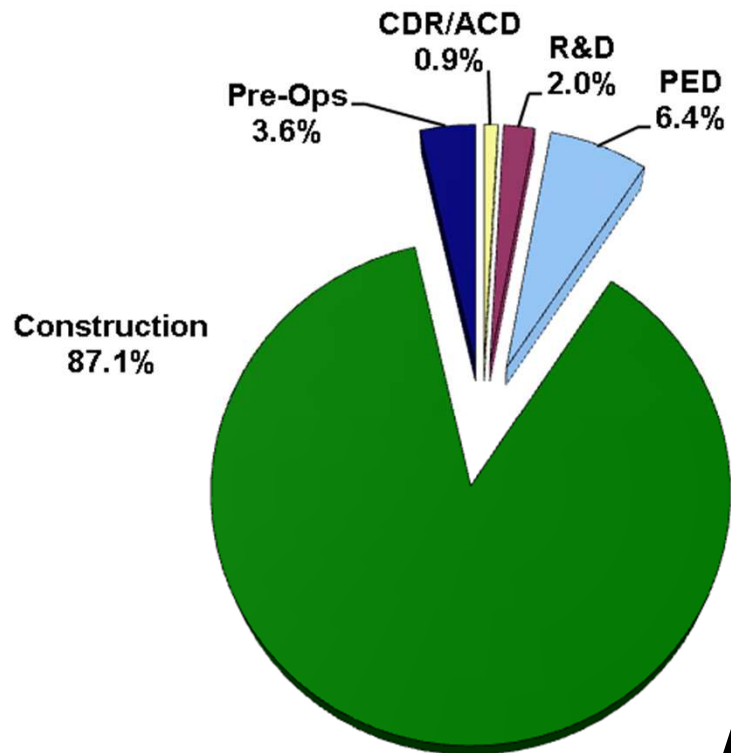
HALL B – STEELWORK COMPLETED DETECTOR INSTALLATION STARTED



12 GeV CONSTRUCTION

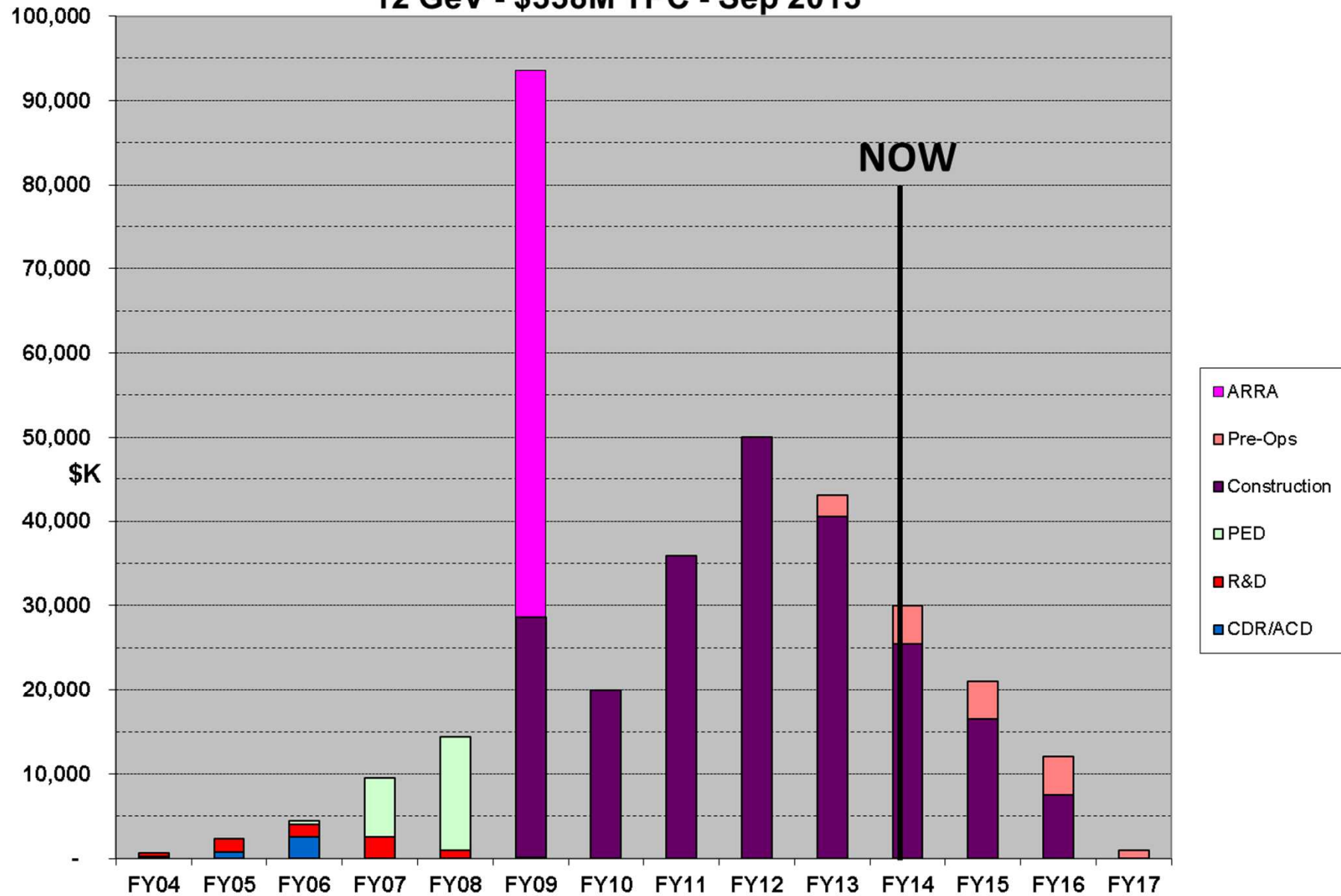
TPC = \$338M TEC = \$310.5M

CONSTRUCTION = \$289.5M



12 GeV = \$338M TPC

12 GeV - \$338M TPC - Sep 2013



FY11 & FY12 FUNDING

- Since CD-2, FY11 funding was the schedule limiter for Halls B & C.
- The FY09 ARRA funding reduced FY11 funding from \$62M to \$36M.
- This made the project vulnerable in FY12 due to apparent funding doubling.
- FY12 funding was cut by \$16M from \$66M to \$50M.
 - Funds are being restored in **FY14** and **FY15**.

DOE CRITICAL DECISION SCHEDULE

LEVEL 1 MILESTONES

CD-0 Mission Need	MAR-2004 (A)
CD-1 Preliminary Baseline Range	FEB-2006 (A)
CD-2 Performance Baseline	NOV-2007 (A)
CD-3 Start of Construction	SEP-2008 (A)
CD-4A Accelerator Project Completion and Start of Operations	DEC-2014 WILL COMPLETE EARLY
CD-4B Experimental Equipment Project Completion and Start of Operations	JUN-2015 → REBASELINE SEP-2017

CD-4 split to ease transition into Operations Phase

REBASELINE OUTLINE

- **Review Timeline**
- **Process**
- **ETC**
- **Cost Contingency Profile**

MAJOR REVIEW TIMELINE

21-Jun-2012 Lehman Review

5-Sep-2012 Lehman Review

===== Oct-2012 Baseline “Frozen” for Level 2 CR =====

27/29-Nov-2012 Lehman Rebaseline Review

23-Jan-2013 Director’s Internal ETC Review

27-Feb-2013 Director’s Internal ETC Review

===== 1-Mar-2013 Rebaseline P6 Schedule =====

10/12-Apr-2013 Director’s External Rebaseline Review (Temple)

7/9-May-2013 Lehman Rebaseline Review

9-Aug-2013 Lehman Rebaseline Review

===== 1-Sep-2013 Rebaseline Implementation P6 Schedule =====

4-Sep-20113 ESAAB Review

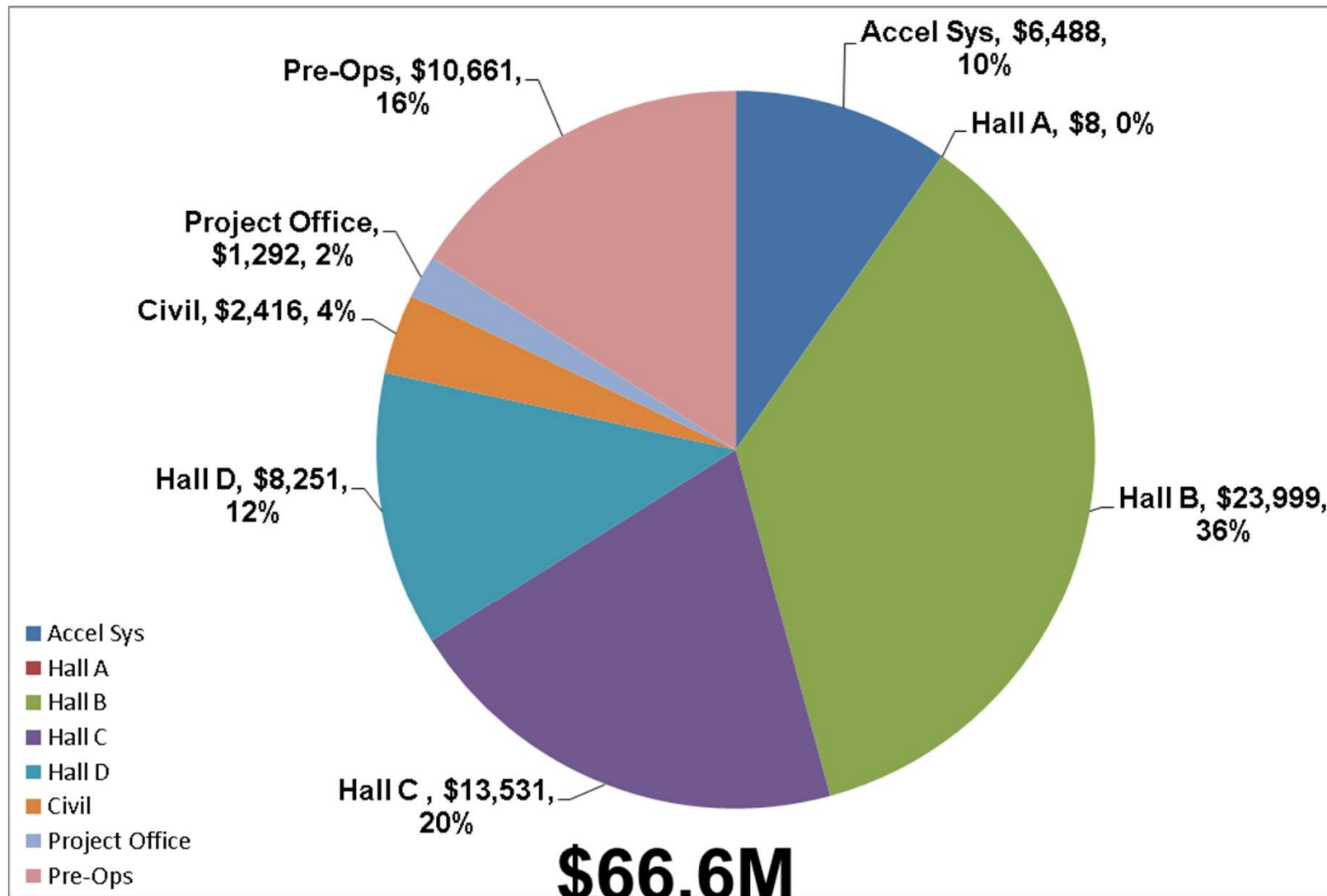
9-Dec-2013 Lehman Review



REBASELINE PROCESS

- We developed a [Rebaseline](#) file with a 1-Mar-2013 S=P=A date
- This was reviewed by the Apr and May external reviews
- Through the end of August we maintained two P6 schedules and EVMS reporting
 - ❖ Baseline: Used for all DOE reporting
 - ❖ Rebaseline: Used to manage the project including cash flow
- The 9-Aug Lehman Review added:
 - ❖ 6 months of schedule contingency to the CD4B data (Sep-2017)
 - ❖ ~\$2M SC Magnet Risk Mitigation scope
- We estimated where the project would be 31-Aug and submitted the revised PEP and BCR.
- With 1-Sep-2013 chosen as the [Implementation](#) date:
 - ❖ History (BCWS and BCWP) was captured from the Baseline Schedule
 - ❖ 31-Aug-2013, one day, activities were added at the lowest level of the WBS to set BCWS and BCWP equal to ACWP.
 - ❖ The ETC was taken from the Rebaseline Schedule
 - ❖ The Magnet Risk Mitigation Scope was added
 - ❖ **This was a two month effort**
- [On 4-Sep the ESAAB approved the PEP and BCR.](#)

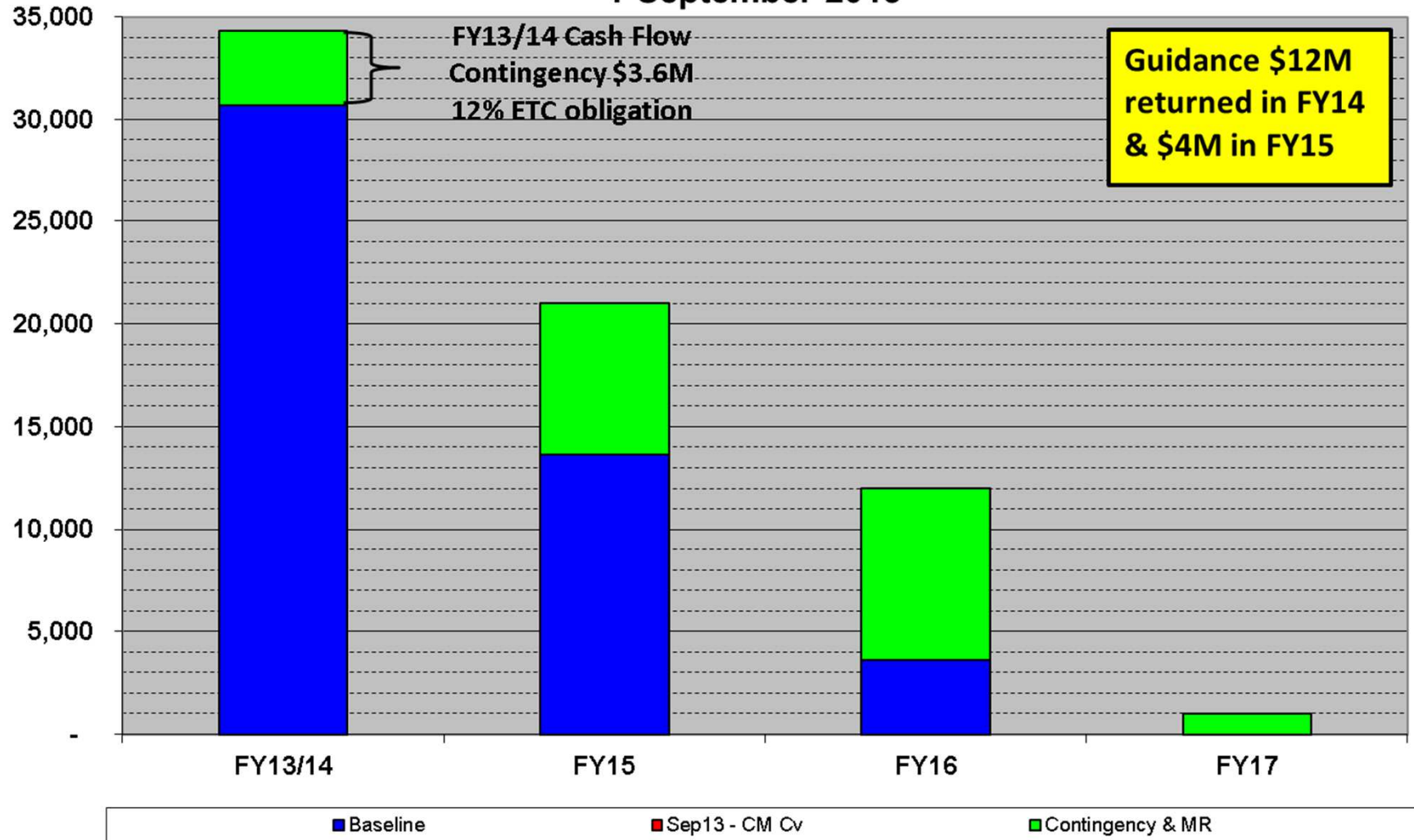
REBASELINE ETC COST \$K- 1-SEP-13



OPEN OBLIGATION: \$16.9M

12 GeV FUNDING & CONTINGENCY PROFILE

12 GeV \$338M Re-baselining - Funding and Contingency/MR Profile
1-September-2013



SUMMARY AS OF 31-OCT-2013

- **Project is >86% obligated and >82% costed**
- **Accelerator commissioning has started**
- **Hall D Solenoid has been commissioned and detector installation is on track for 1QFY15 beam commissioning**
- **The Hall B & C magnets are progressing with last magnet installation starting Jun-2015**
- **SEP-2017 CD-4B offers ~18 months schedule contingency**
- **The Rebaseline was completed with a 1-SEP-2013 implementation**
- **The \$338M rebaseline provided the project with 37% cost contingency and 47% obligation contingency**