

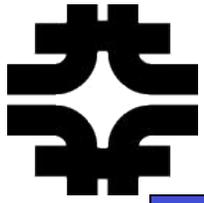
Project Management Group

Doug Glenzinski

Ron Ray

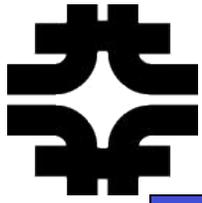
Fermilab

22.Jan.2013



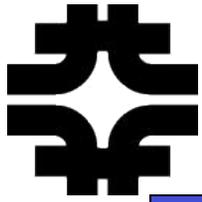
Outline

- News
- Focus for 2013
- Recent progress
- Issues
- Summary

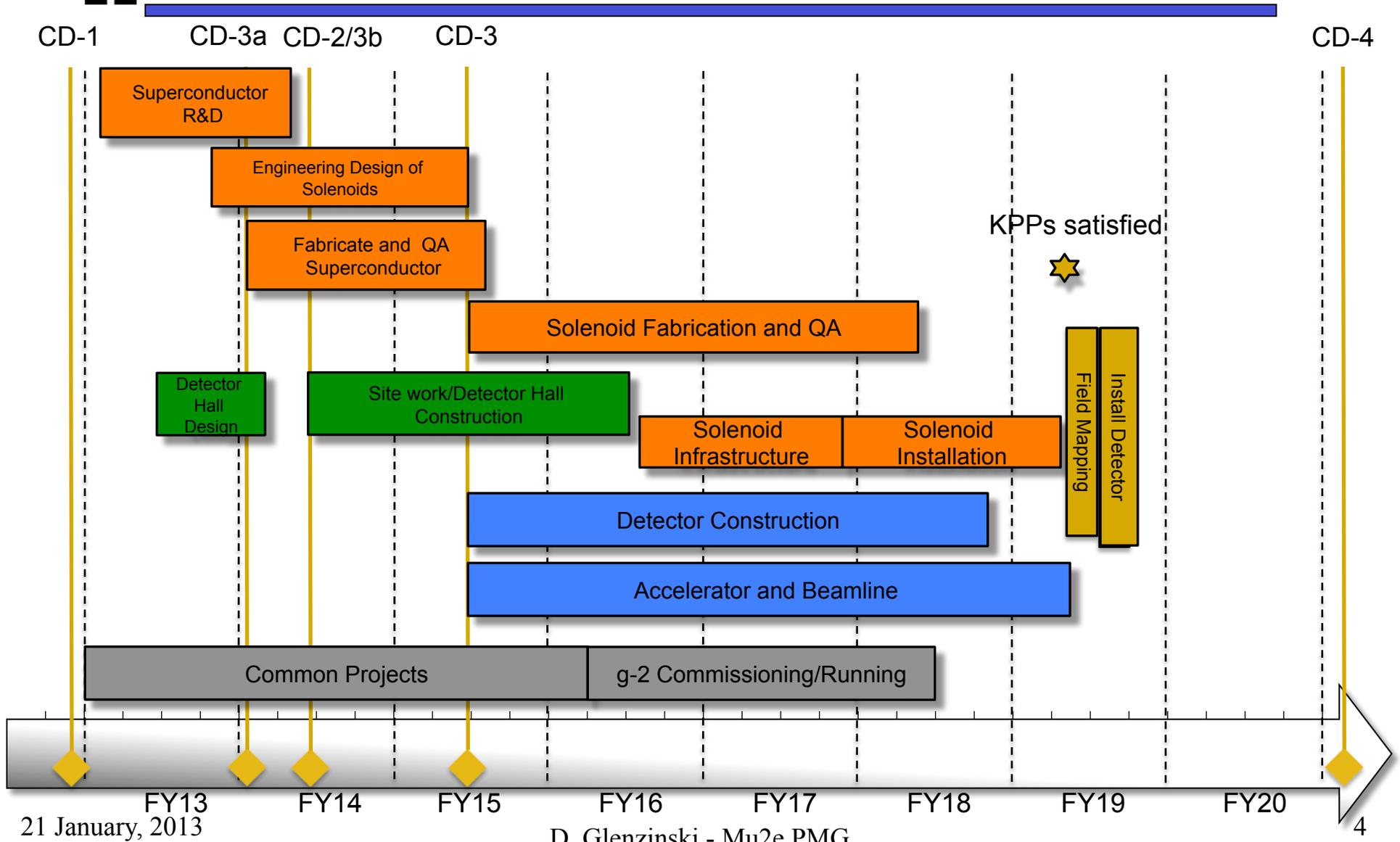


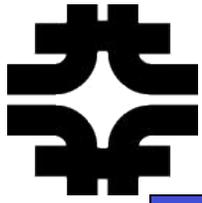
News

- There will be a new Mu2e PMG web page
 - mu2e.fnal.gov/public/pmg/
- There is an email list
 - mu2e-pmg@fnal.gov
- New time:
 - Chairs: Greg Bock/Young-Kee Kim, Ron Ray
 - 3rd Tuesday of each month, 1400-1530 (Snake Pit)



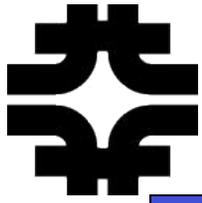
Mu2e Schedule





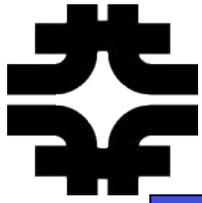
Comment on Schedule

- NB. The dates shown for the CD milestones correspond to the DOE sign-off.
- Review cycle is lengthy and starts with a Director's review in October 2013 (pre-CD-2)
- Need to have documentation ready in September
 - CD-2 quality cost and schedule
 - Technical Design Report
- Anticipate a much shorter cycle for CD-3a... more the “mini-Review” model



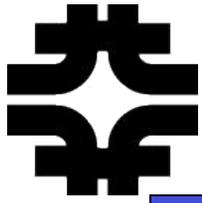
Comment on Schedule

- By the time of the CD-2 review we will
 - Have bids in hand for
 - Detector Hall
 - PS and DS construction
 - TS coil components
 - Have obligated funds for
 - All the necessary conductor
 - PS and DS Final Design
- Taken together, this accounts for ~half Mu2e M&S



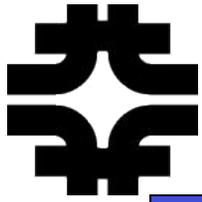
Focus over next year

- To get to CD-3a in Q1FY2014:
 - Order R&D lengths of conductor
 - Complete necessary R&D program
 - Schedule assumes R&D is successful
- To get to CD-2/CD-3b in Q2FY2014:
 - Advance solenoid designs to preliminary stage and initiate solicitation process for “Design and Build”
 - Advance remaining scope to preliminary stage (requires down-selects of alternatives)
 - Prepare advanced A&E designs for building in preparation for early construction start (CD-3b)
 - Produce necessary documentation



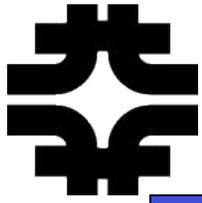
Recent Progress

- CD-3a is driven by R&D on superconductor
 - TS PO has been issued (Hitachi)
 - Delivery Oct-2013
 - Will discuss expediting the delivery
 - PS PO has been issued (Furakawa)
 - Delivery Aug-2013
 - Most technically challenging
 - Schedule assume success on first try



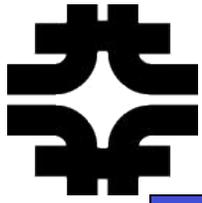
Recent Progress

- CD-3a is driven by R&D on superconductor
 - DS bids being evaluated
 - Would like to establish a 3rd “path”
 - Only realistic option is “a la carte”
 - Lots of performance margin on this cable
- In all instances a QC plan is in place
 - V.Lombardo will oversee the production of this cable
 - Were reviewed prior to issuing RFPs



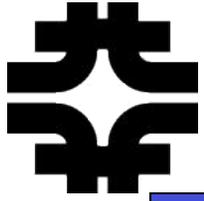
Recent Progress

- There has been a down-select for the External Extinction Monitor
 - Pixel telescope
 - Need to augment team... discuss FNAL, LBNL, Univ.
- Down-select for Tracker in progress
 - T-Tracker (default; straws)
 - I-Tracker (alternative; drift chamber)
 - Letter from Mu2e Executive Board regarding physics capabilities and risks associated with each will be delivered to Project this week... decision soon thereafter



Recent Progress

- Preparing to engage A&E firm in preliminary and advanced design work.
 - RFP for A&E firm is on the street; bids due in a week
 - VE exercise with A&E firm scheduled 14-15 Feb
 - Plan to have construction proposals in hand for DOE CD-2 review
 - Exact location of building still awaiting the completion of a detailed beamline design



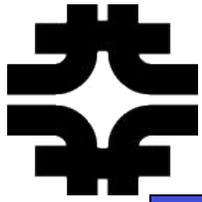
Recent Progress

- Have scheduled a “Simulations Round Table”
 - Presentations from the major simulation efforts
 - Ensure L2s understand what simulations are telling us
 - Provide feedback about issues L2s need to have resolved in order to make timely progress to CD-2
 - Will use this to update the simulations priorities
 - 31-Jan-2013



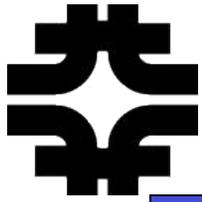
Recent Progress

- Have scheduled a “CRV Workshop”
 - Will focus on issues related to the Cosmic Ray Veto
 - Neutron shielding designs and estimates of neutron flux
 - Estimates of CR-induced backgrounds and the required CRV coverage in order to mitigate this background (thanks CD)
 - May have to switch technologies or alter design
 - Plastic scintillator (current) to cathode strip chambers (alternative) or some hybrid
 - Neutron flux too high for plastic and SiPMs
 - 01-Feb-2013

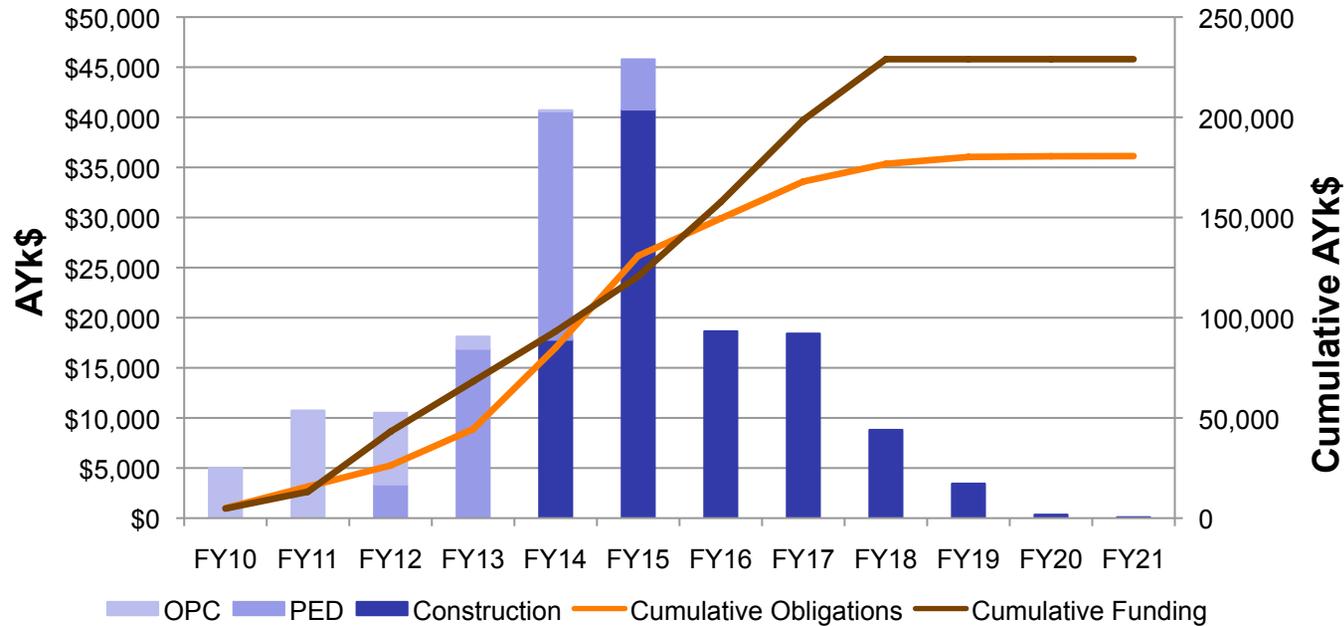


Recent Progress

- Have augmented our Project Controls group
 - Mike Gardner joined us a few month back
 - Halley Brown has begun ramping-up on Mu2e



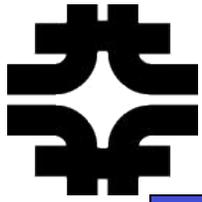
Funding & Obligations Profiles



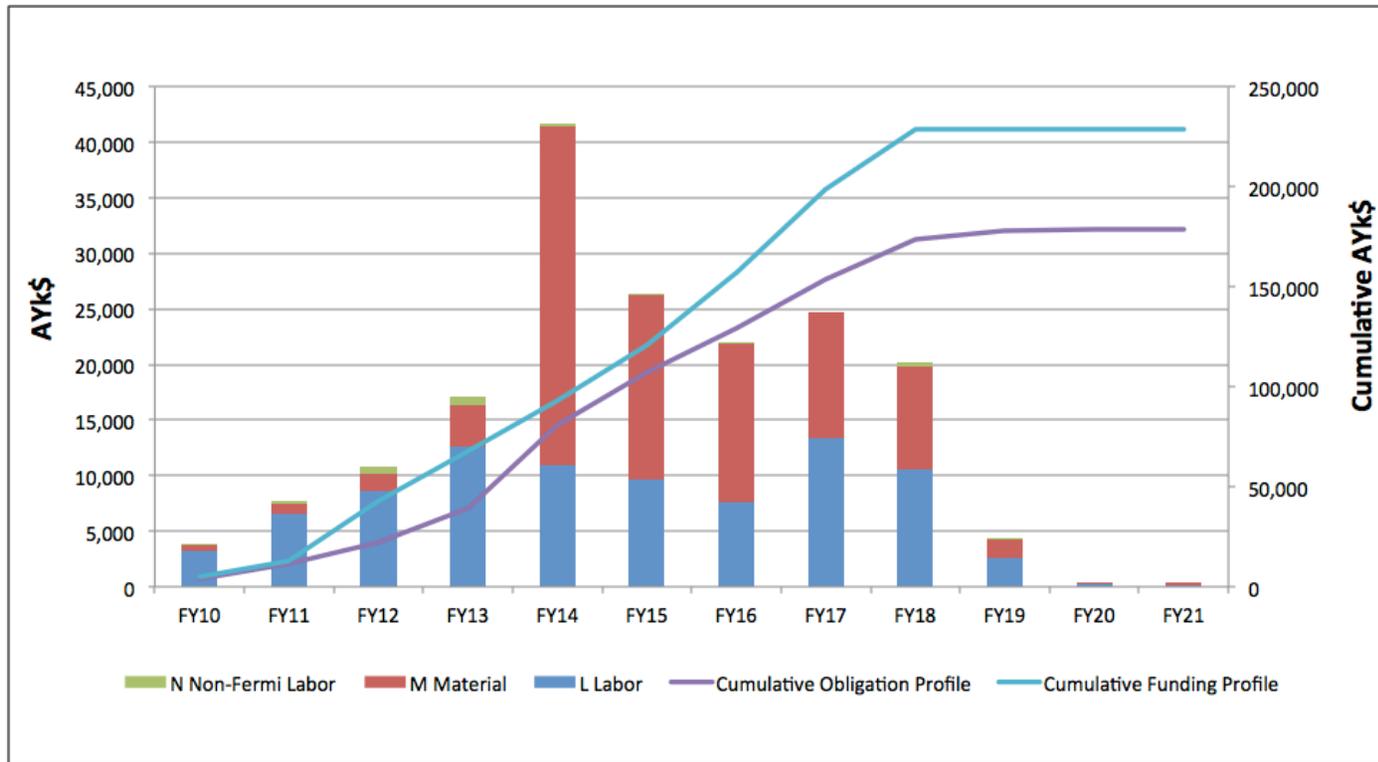
Available Contingency

FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
64%	54%	10%	-8%	5%	18%	30%	27%	27%	27%

- Shown at 19-Nov-2012 mini-review.

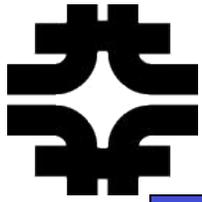


New Obligation Profile



Available Contingency

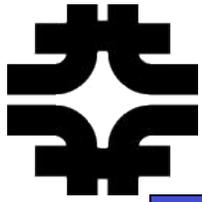
FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
92%	72%	15%	12%	22%	29%	32%	28%	28%	28%



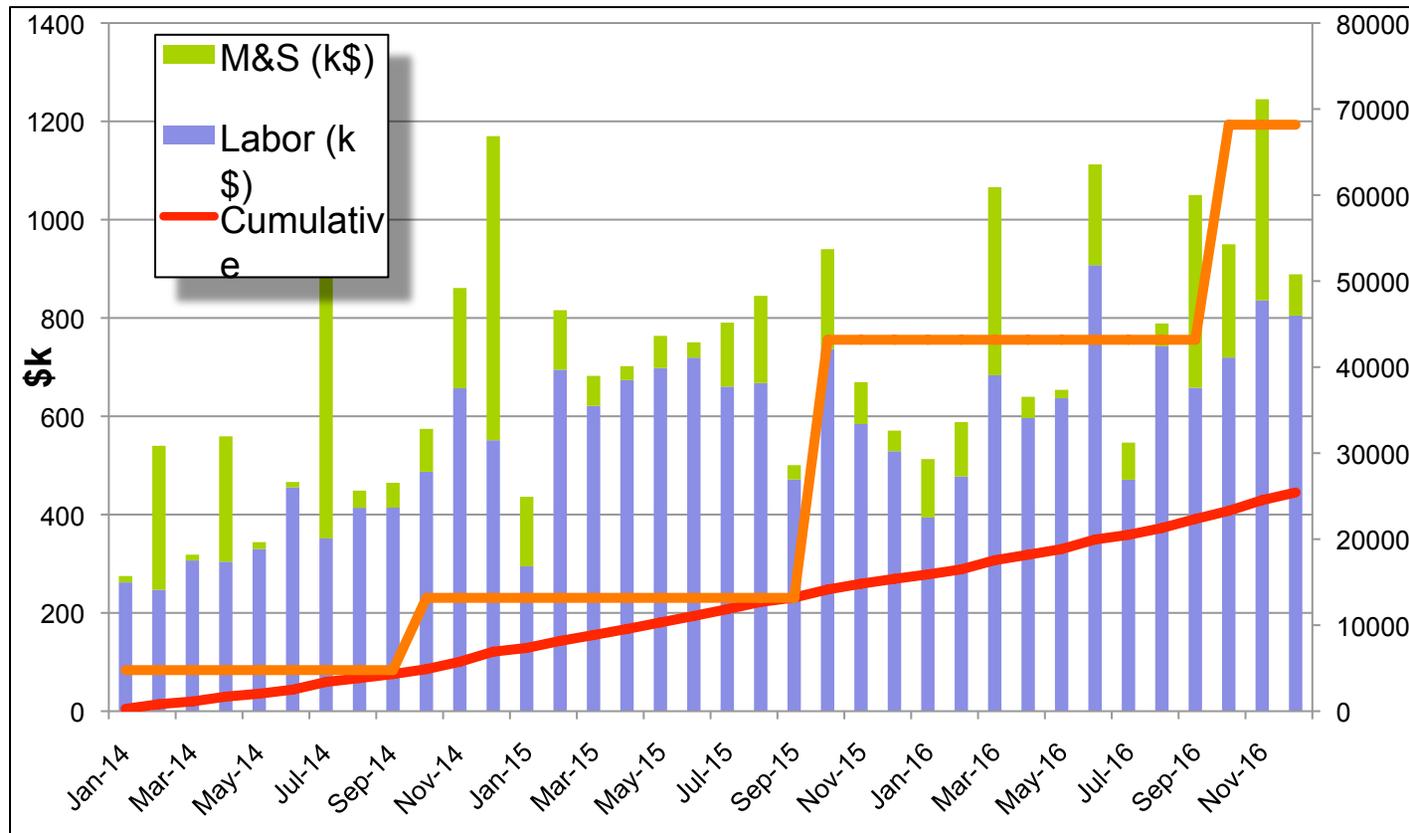
Comparison

	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Old	64%	54%	10%	-8%	5%	18%	30%	27%	27%	27%
New	92%	72%	15%	12%	22%	29%	32%	28%	28%	28%

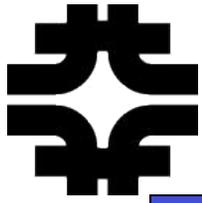
Better. Have passed this along to OHEP.



Financial Resources

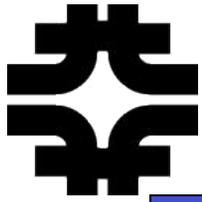


- We have sufficient monies to make the necessary progress towards our CD milestones

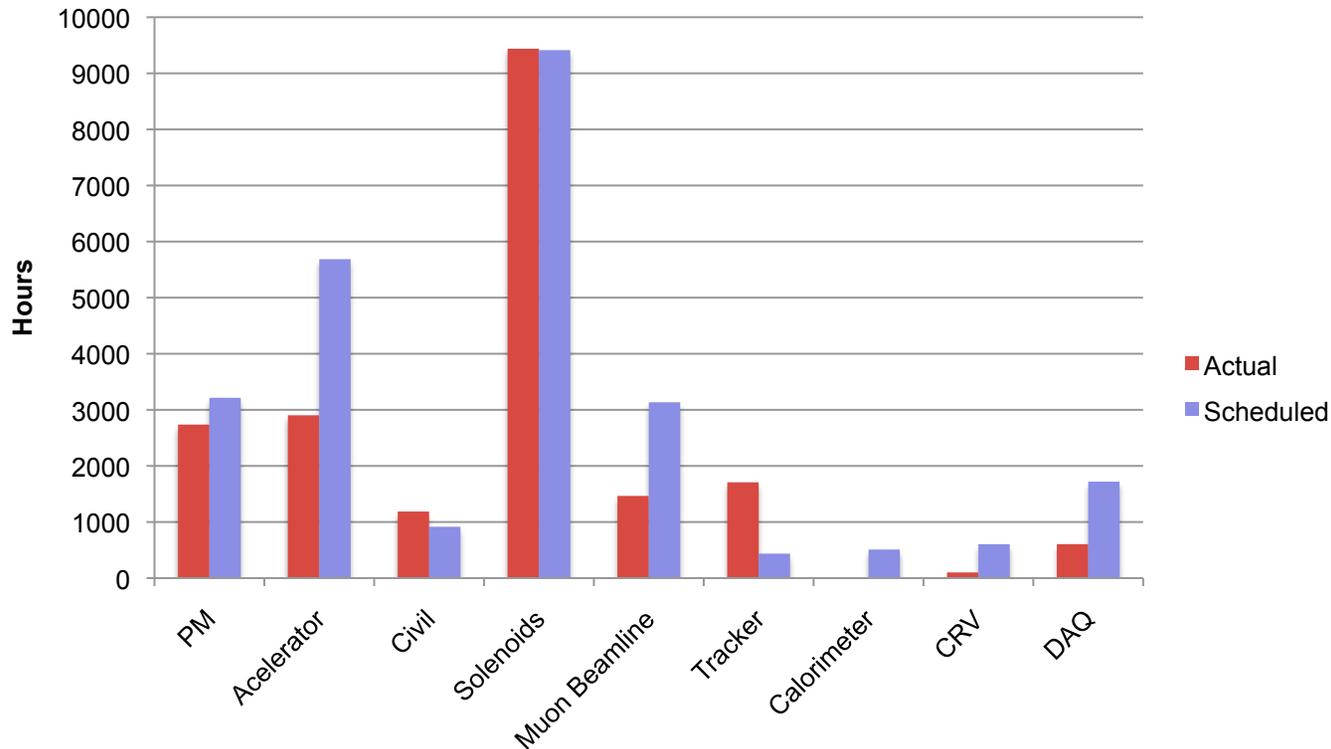


Labor Resources

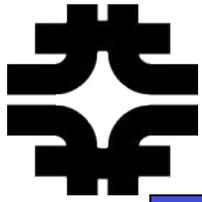
- We are gearing-up to track our effort as required for EVMS
 - First step today... for 1st quarter FY2013, compare cumulative effort reported to that scheduled
 - Illuminating...
 - Most differences understood
 - Clearly, the schedule needs more work



Labor Actuals vs Scheduled



- Differences largely understood, but clearly the schedule needs more work to be CD-2 ready.



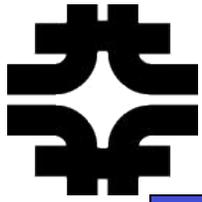
Issues

- Current P6 interface for our L2 managers completely inadequate
- Our CD-1 “point estimate” does not include risk
 - CD-1 point estimate = \$229M
 - What’s approved at CD-1 is a cost range: \$200-310M
 - This project carries significant technical and schedule risk... CD-2 TPC likely > CD-1 point estimate for same scope
 - We have begun putting in place the tools necessary to perform a quantitative risk analysis



Issues

- Need to learn from NOvA
 - Are participating in a Task Force with LBNE+AD
- Need a technician assigned to work for the Tracker asap; should discuss a proj. engineer
- Need to stabilize the engineer situation for our Accelerator system
- Would benefit from bringing a few new people on board the collaboration
 - Pixel telescope, DAQ sub-system



Summary

- Progress is being made towards CD milestones
 - R&D lengths for 2 conductors have been ordered
 - Award for A&E contract for building designs on schedule
 - Down-selects being made in a timely fashion
- Significant work remains to
 - Finalize CRV and shielding designs
 - Bring schedule to CD-2 level
- Need help from the lab
 - Stabilize AD engineering resources
 - Assign technical resources to Tracker



Next PMG Meeting

- Tuesday, 19-Feb-2013, 1400-1530 (Snake Pit)
- Tentative Agenda:
 - Project News and Status (Ron / Doug)
 - CRV Progress and Plans (Craig Dukes)
 - Calorimeter Progress and Plans (Stefano Miscetti / David Hitlin)