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# Accelerator & NuMI Upgrades Update

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18 Jun 2013



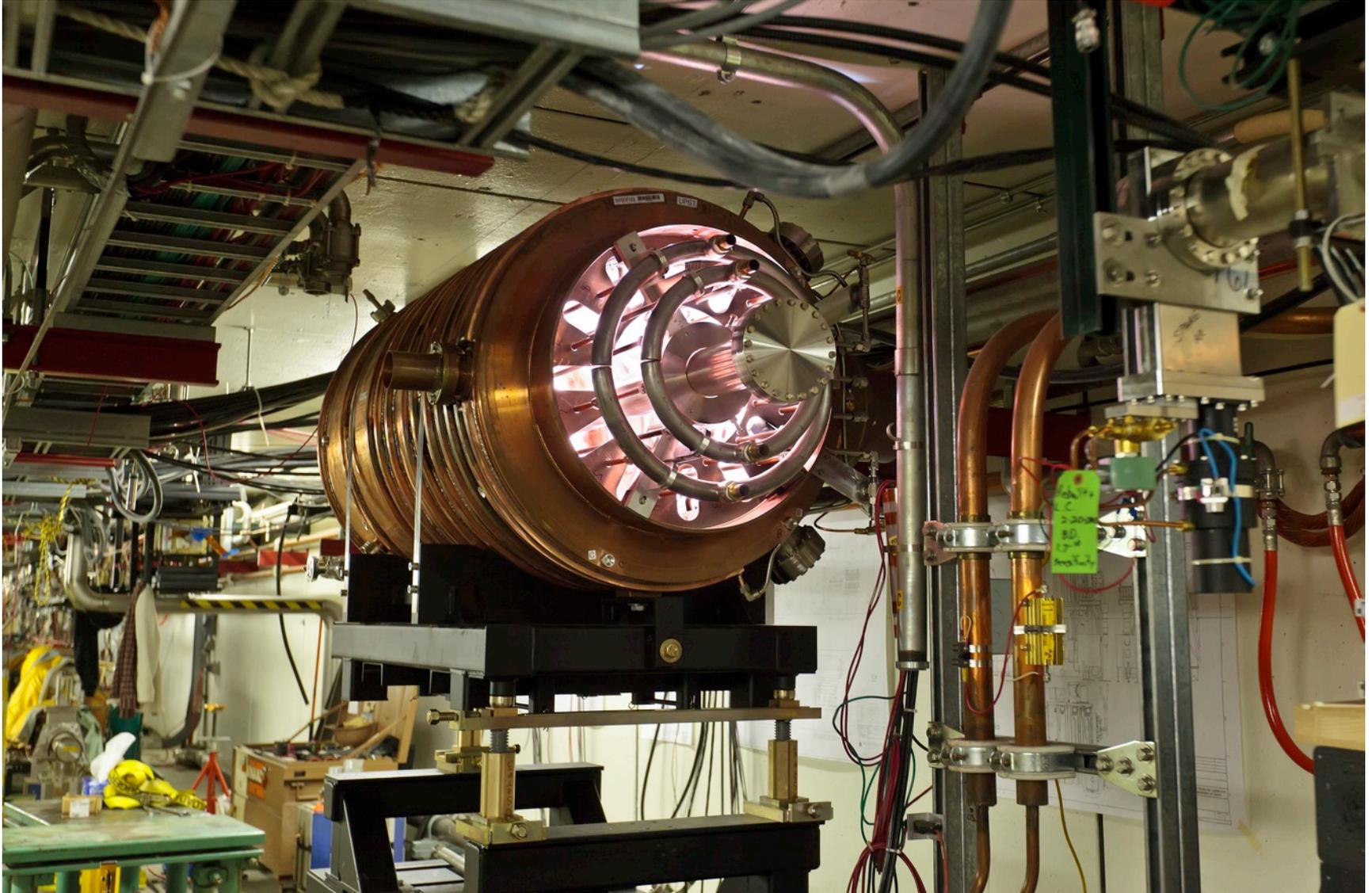
# Remaining Critical Path Hardware

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- Beam Pipe & Vacuum components:
  - Beam boxes (connections at Lambertsons)
  - Tees and vacuum pumps
  - Everything is in hand at the lab
    - Machining / Welding / Cleaning
  - Lots of vacation, change over, end effects



# RF Cavity Installation





• 2<sup>nd</sup> RF Cavity on stand, Monday, April 29





# Installing Power Lines





# RF Installation complete

- RR under vacuum
- MI almost under vacuum
- Guard rail installation last piece!





# 5 Beamlines coming together

- MI, MI-8 injection, Booster Neutrino, Recycler, and Recycler Injection are all there now!

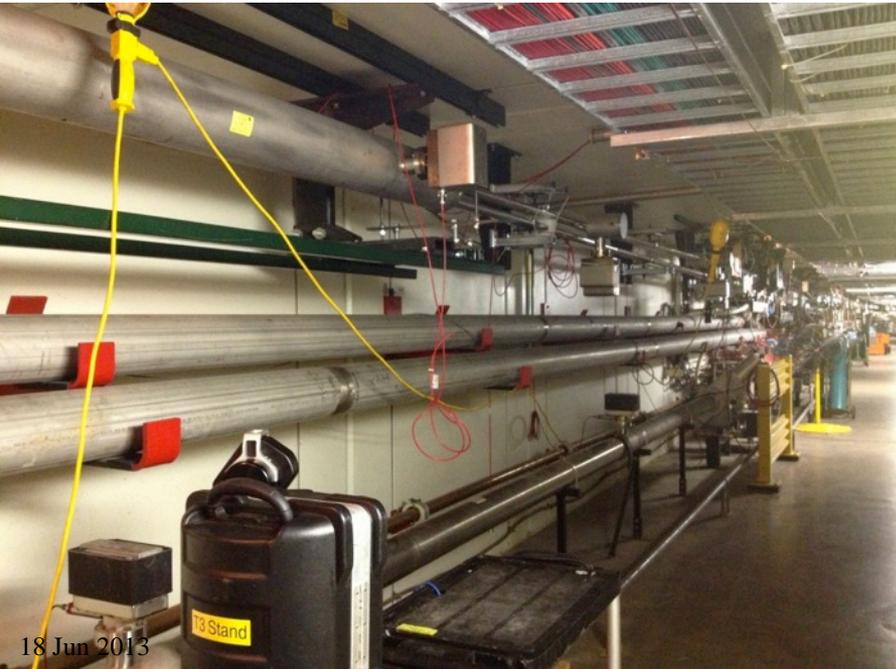




# MI/RR Shutdown 2013

## Injection:

- Vacuum re-installation continues
  - RRBV100 –BV848 under vacuum and certified Injection lambertson
  - Welding last section today





# RR30 Beam Pipe



On the left  
Vacuum connection made  
up between girders  
Installation of pre-fab pieces  
went well



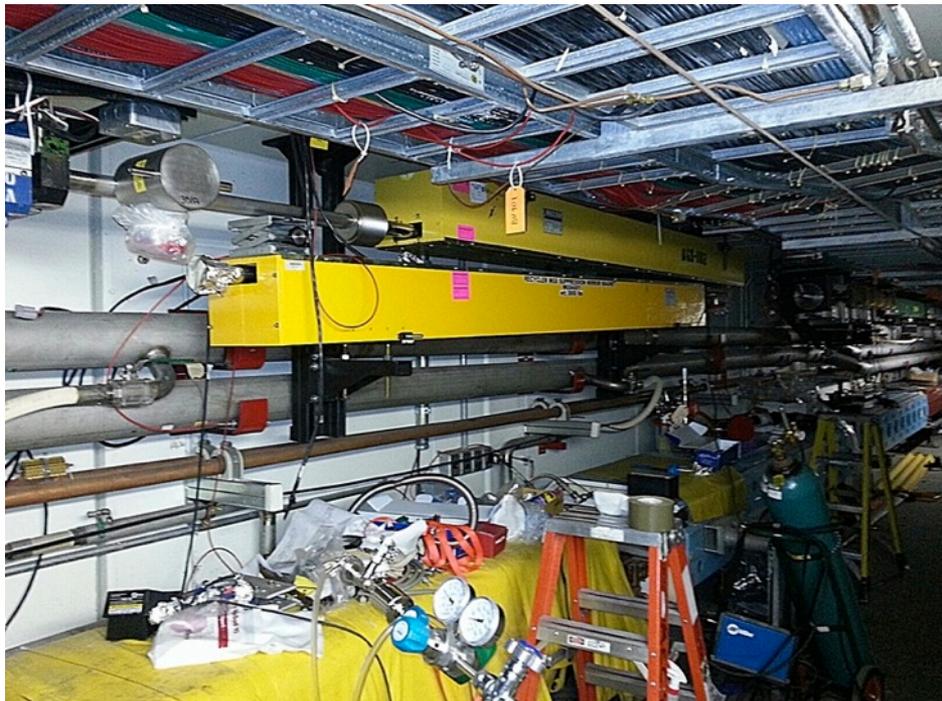
On the Right  
Longer Stretch between 305 and  
306  
Extraction Line magnet in the  
middle: developed Water leak and  
was replaced



# MI/RR Shutdown 2012

## RR-30 straight:

- RR Ring is under vacuum and leak checked
  - .Q309-Q301
  - .Q232-Q227
- Installing Recycler Ring transfer line beam pipe between girders: 80% complete
  - Waiting on the follow Components: RR and MI beam boxes





# Off project Work in MI30

MI30 straight section Beam pipe corrosion issue.

- Areas effected are the 301 regions and 307 region
  - Vacuum system from 230- 305 is complete
    - Waiting to install Collimator bellows – delicate and damaged one during the shutdown so doing it last!





# Move Target to Chase

Target alignment on module and installation into chase  
Alignment complete  
Hookup complete

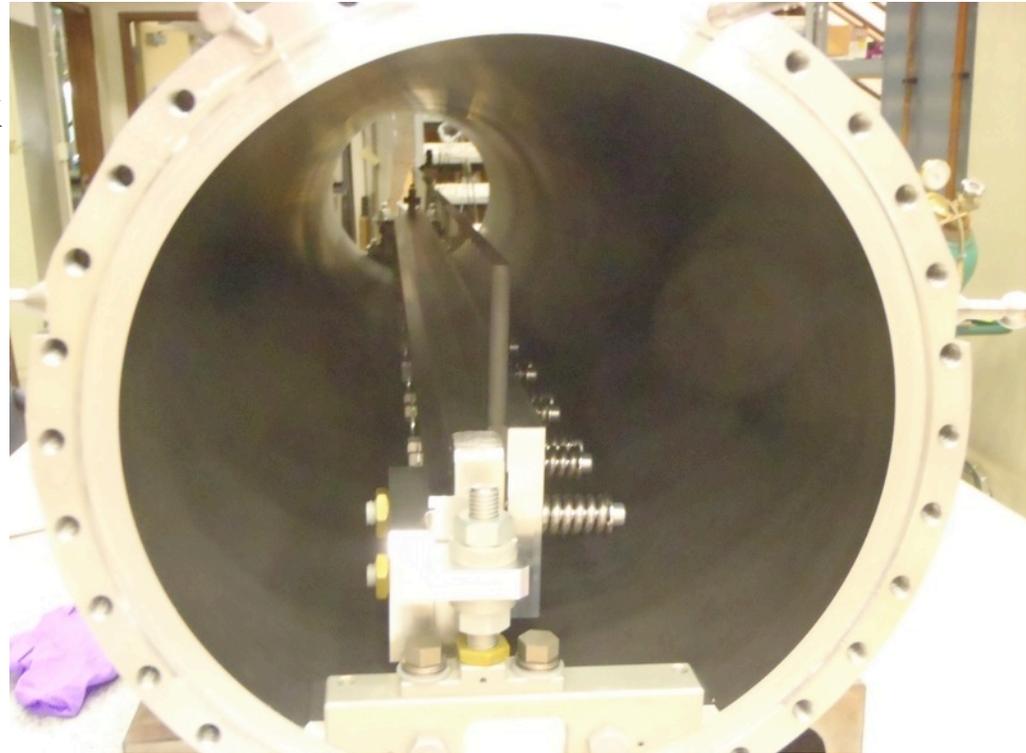
Back in work cell, awaiting Horn position beam scans





# Target Status

- MET03: On AD funds from RAL
  - Arrived June 5, passed leak tests
  - Accepted!
- MET02: On AD funds at MI8
  - Under construction
- Have Target Carrier ready
- 3 baffles purchased (1 on project, 2 on AD funds)



Downstream end, graphite fins

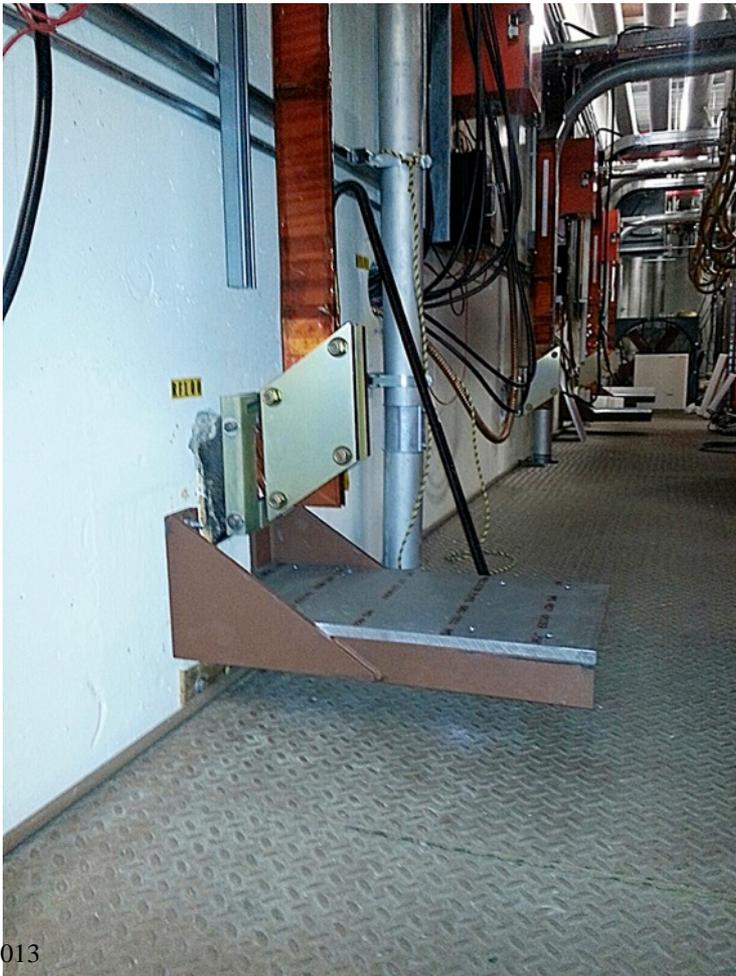


# Shielding work: Off project

MI-60 Shielding:

20 support stands installed

Poly block arrived June 2nd





# MI/RR Shutdown 2012



This is what 9,974 lbs of poly shielding looks like.

Pre cut, tapped,  
ready for installation





# RF Bias Supply Shielding



- All poly blocks mounted
- Steel went in last week



# MI/RR Shutdown 2012

MI-60 Shielding:  
Bias power supply penetration  
shielding complete

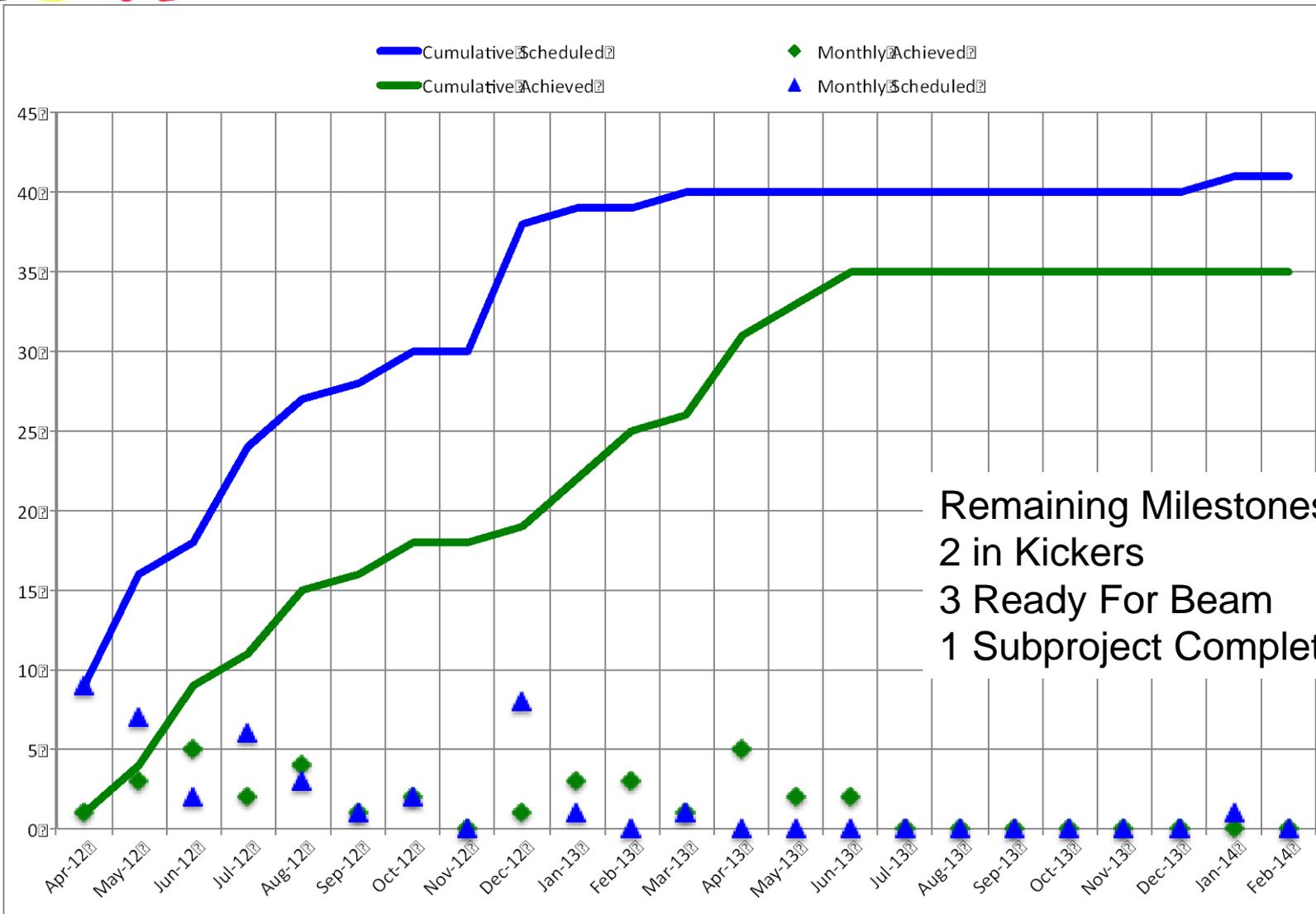
Site Shielding:  
Completed and ready for installation  
Arranging for a crane next week to  
install







# Remaining milestones



Remaining Milestones:  
 2 in Kickers  
 3 Ready For Beam  
 1 Subproject Complete



# Summary

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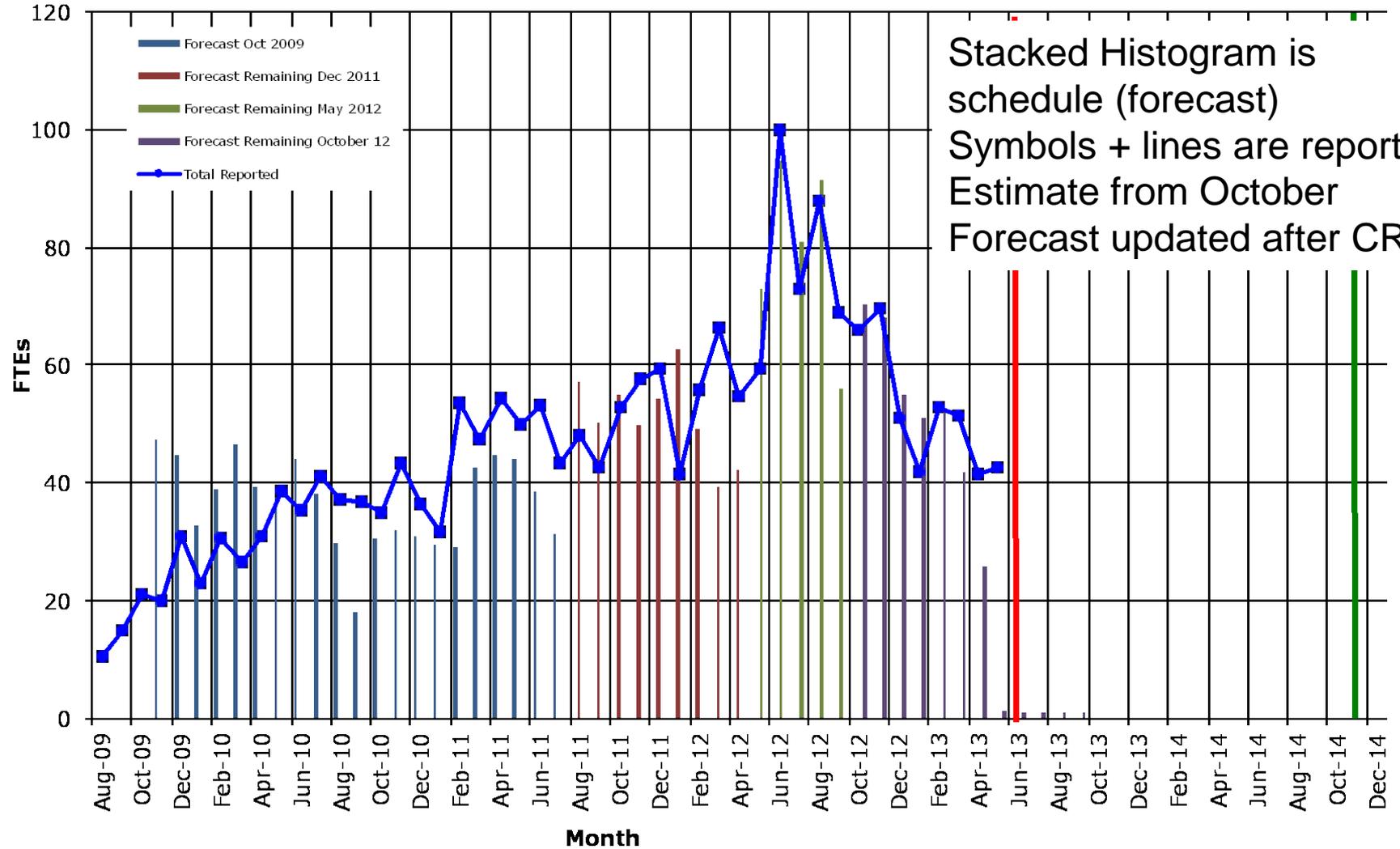
- Shutdown work will end this month
  - Beam startup to follow in July
  - Low intensity, MI only initially
  - Federal Project Director Milestone:  
Ready to Commission Upgrades with Medium Energy Neutrino Beam  
July 1  
On course to meet it
- Will close all ANU codes (except project management) at end of month
  - SPI = 0.993
  - CPI = 0.840



# ANU Resource Requirements

TimeNow

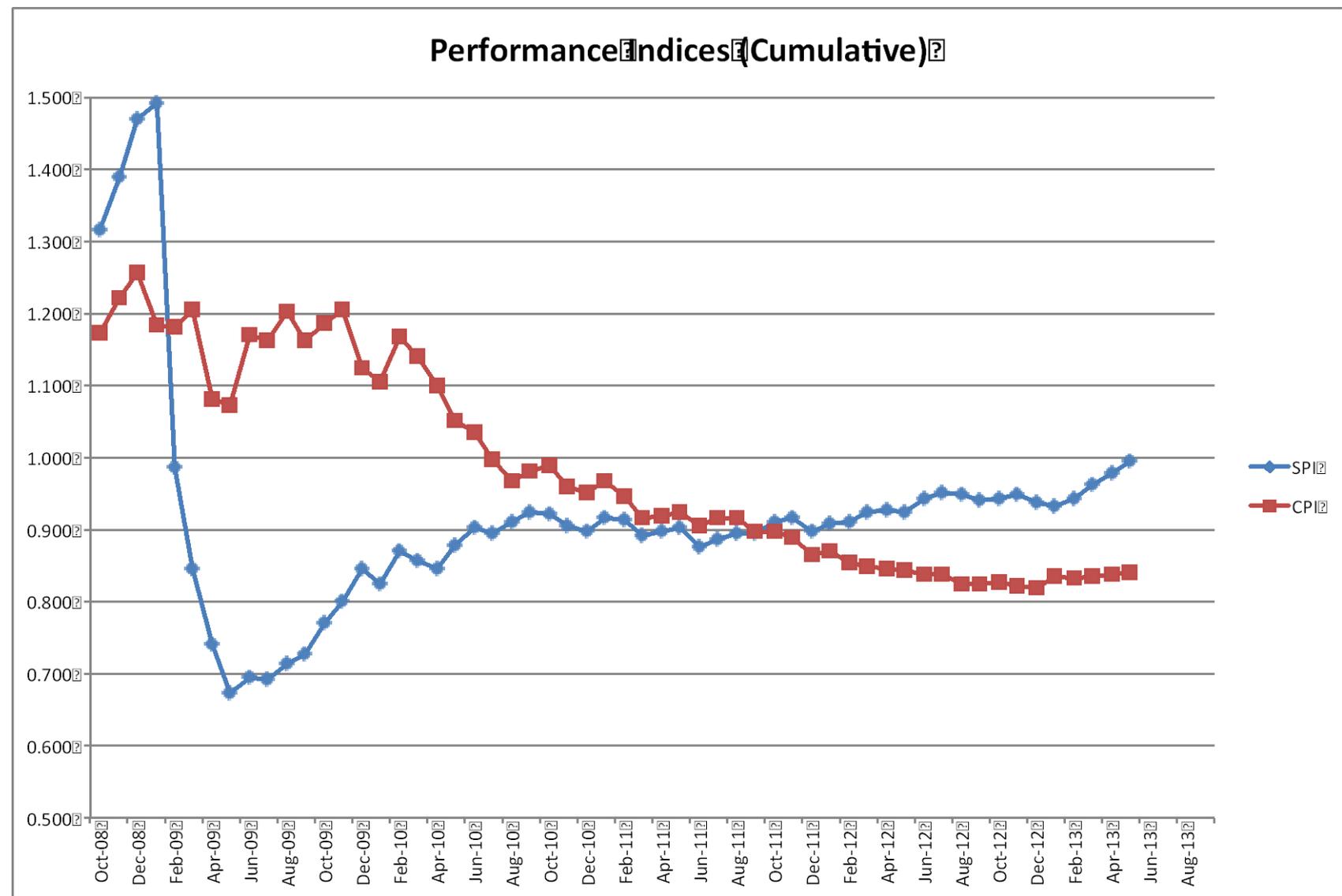
CD-4



FTE := 147.3 hours/month



# Performance Indices





# Shorter term trending?

