

PHENIX WEEKLY PLANNING

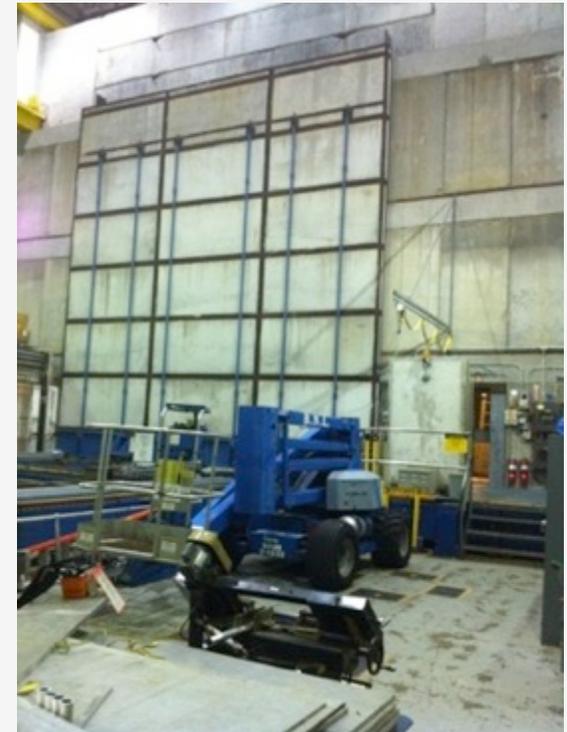


July 10, 2014
Don Lynch

This Week

PHENIX
 ACCELERATOR
 SUPPORT
 TEAM

- Run Ended, 2014 Shutdown began
- WC & EC opened for F/VTX access
- Post shutdown tests: VTX, FVTX, MPC-Ex, MuID
- Flammable gas purge
- Prep for opening shield wall and moving EC
- Open shield wall, begin disassembly
- After post shutdown tests are completed, begin VTX/FVTX disassembly
- Support for sPHENIX efforts as required



7/3/2014

Next Week

- Complete shield wall disassembly
- Take down MuID collars
- Move MMS South
- Disassemble cables and cooling lines to F/VTX
- Disconnect EC, remove dumbwaiter and ladder, fold up EC platforms
- Move EC to AH
- Install plates, 20 ton cart and manlift
- Move MuID collars to AH

2014 planned Technical Support & 2014 Shutdown

Procure & Fabricate parts for MPC-Ex North and South	Done
Set up Physics lab for FVTX/VTX east	Done
End of Run Party	Done
MuID Efficiency Measurement (Itaru, requires cooling water & isobutane)	
VTX /FVTX Cold/warm tests & evaluation, MPC-Ex Voltage tests	7/7-7/10/2014
Start of Shutdown Tasks (purge flammable gas, disassemble and stow shield wall, remove collars, move EC to AH, Move MMS south, etc.)	7/7 – 7/25/2014
Open MMN hatch, MuTr North Sta 2 & 3 maintenance and repairs	7/9-9/30/2014
Remove FVTX/VTX East (West?) to PHYSICS, repair and reinstall	7/14 – 10/15/2014
Place FVTX/VTX West in safe condition in-situ ?	7/14-7/18/2014
VTX/FVTX Upgrade cooling lines, chiller preventive maintenance	7/21-10/6/2014
Remove MMS east vertical lampshade	7/28-7/30/2014
Troubleshoot intermittent water leak in MMS	7/30- 8/8/2014
Other Maint. In MMS	7/30-8/29/2014
Install scaffolding in Sta 1 South	7/28/2014
Remove MPC-Ex prototype	7/28-8/1/2014
MuTr Sta 1 South troubleshooting and repairs	7/28-8/1/2014
Maint. & Repairs for MPC South, BBC South, RPC1 South1	7/28-8/1/2014
Summer Sunday prep AH, tours and restore AH	7/30-8/6/2014
Assemble & test MPC-Ex North, ready for installation	8/1-9/5/2014
Remove scaffolding from sta 1 south, Move CM South	8/4-8/5/2014
Install scaffolding in Sta 1 North	8/6-8/8/2014
Prep MPC-Ex North installation area	8/8-8/15/2014
MuTr Sta 1 & Sta. North troubleshooting and repairs	8/11-9/5/2014
MPC North-remove damaged crystals, repair as necessary, re-install	8/18-9/5/2014
Install new MPC-Ex North, thoroughly test before moving CM north	9/8-9/26/2014
Reinstall MMS east vertical lampshade	9/2-9/5/2014
Assemble & test MPC-Ex South, ready for installation	9/2-10/3/2014

2014 planned Technical Support & 2014 Shutdown (cont'd)

Remove Sta 1 N scaffolds, Move CM North, Install scaffolding in Sta 1 S	9/29-10/3/2014
Install MPC-Ex South	10/6-10/24/2014
Reinstall, reconnect, re-survey and re-commission VTX/FVTX	10/16-11/26/2014
Other detector support	TBD
Infrastructure Maintenance and Improvement	TBD
Decommissioning of obsolete PHENIX detector equipment	TBD
sPHENIX Support	on-going
End of Shutdown Tasks (Move MS north, roll in EC , install collars, remove 10 ton cart, plates and manlifts, build shield wall, etc.)	10/27-11/26/2014
DC East & West maintenance & repairs	11/17-12/5/2014
Pink/White/Blue Sheets	12/1-12/19/2014
End of Shutdown Party	????
Start Flammable gas flow	????
Close shield wall, install radiation interlocks and prepare for run 14	12/31/2014
Start run 15	1/2/2015

Muon Tracker Shutdown Work List – summer 2014

- testing as MPC-EX installed, particularly before closing Sta-1's
- fix North Arcnet – N.2.7.1, North Sta-2 Oct-7 Chassis-1 (bad cable?)
- fix packets that were disabled for Run14
 - 11035,36 – South Sta-1 Quad-4 Chassis-3
 - 11267,68 – North Sta-2 Oct-7 Chassis-2
- replace boards for most frequent FEM problems from run
 - 11195 - North Sta-1 Quad-3 Chassis-3?
 - might have already done this; check history (changed RX 3/14/12)
 - 11064 – South Sta-2 Oct-3 Chassis-3 - unreachable
- N341 HV trip problem?
- auto-reboots of ArcNet and iocondev's for calibration?
- Access needed:
 - South & North Sta-1
 - Inside North Sta-2 on bottom
- Main Issue – Manpower

Work Permits for 2014 Shutdown

- Start of Shutdown - Done
- VTX/FVTX East - Done, at CAD for approval
- MPC-Ex - Done, at CAD for approval
- MuTr Sta 1 N & S - Done, at CAD for approval (scaffold agreement done)
- MuTr North station 2/3 - Done, at CAD for approval
- MuTr South station 2/3
- MMS South Water leak
- DC East/West
- MPC North
- RPC North/South ?
- End of Shutdown



VTX/FVTX east repairs/upgrades required

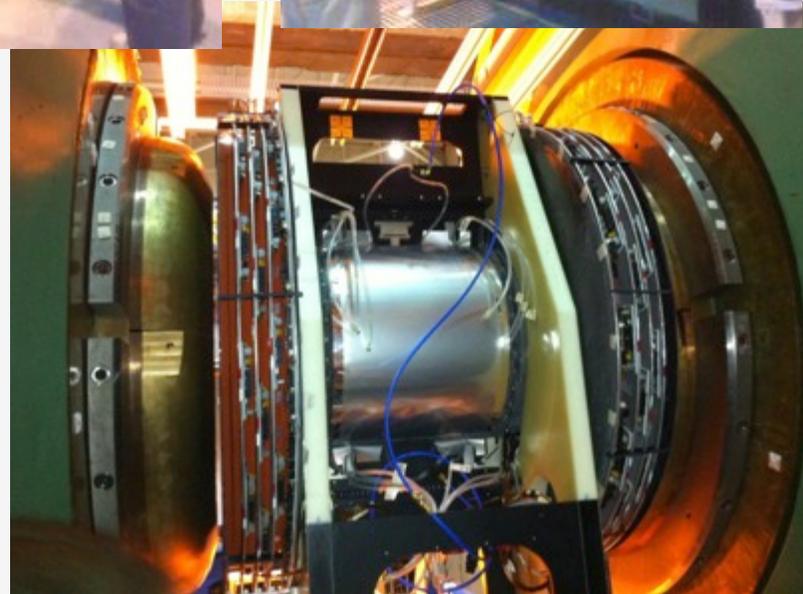
West to remain installed (Not likely) ??



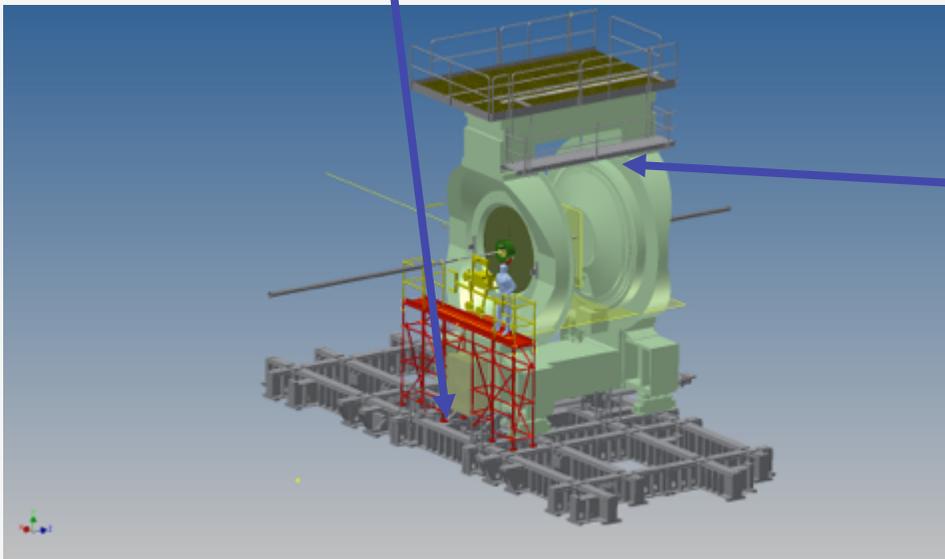
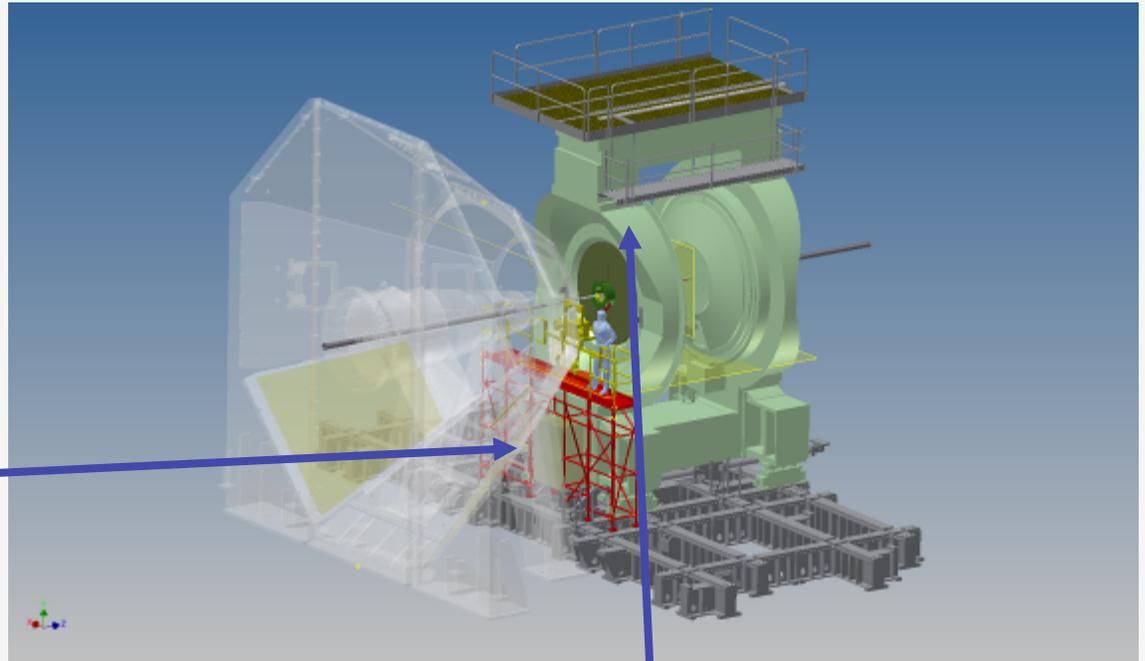
Post Run VTX/FVTX test results/consequences:

- Condensation likely cause of many strip-pixel and FVTX problems
- Need to better seal against condensation intrusion into VTX/FVTX shell
- Need to dismount FVTX/VTX West
- Need to disassemble East for FVTX, pixel and strip-pixel repairs
- Do not need to disassemble West, only repair FVTX, possible pixel/strip-pixel tests without disassembly?
- Other findings/consequences?

VTX Installation 2010, 2011 & 2012. 2014 Removal and re-installation will be essentially the same.

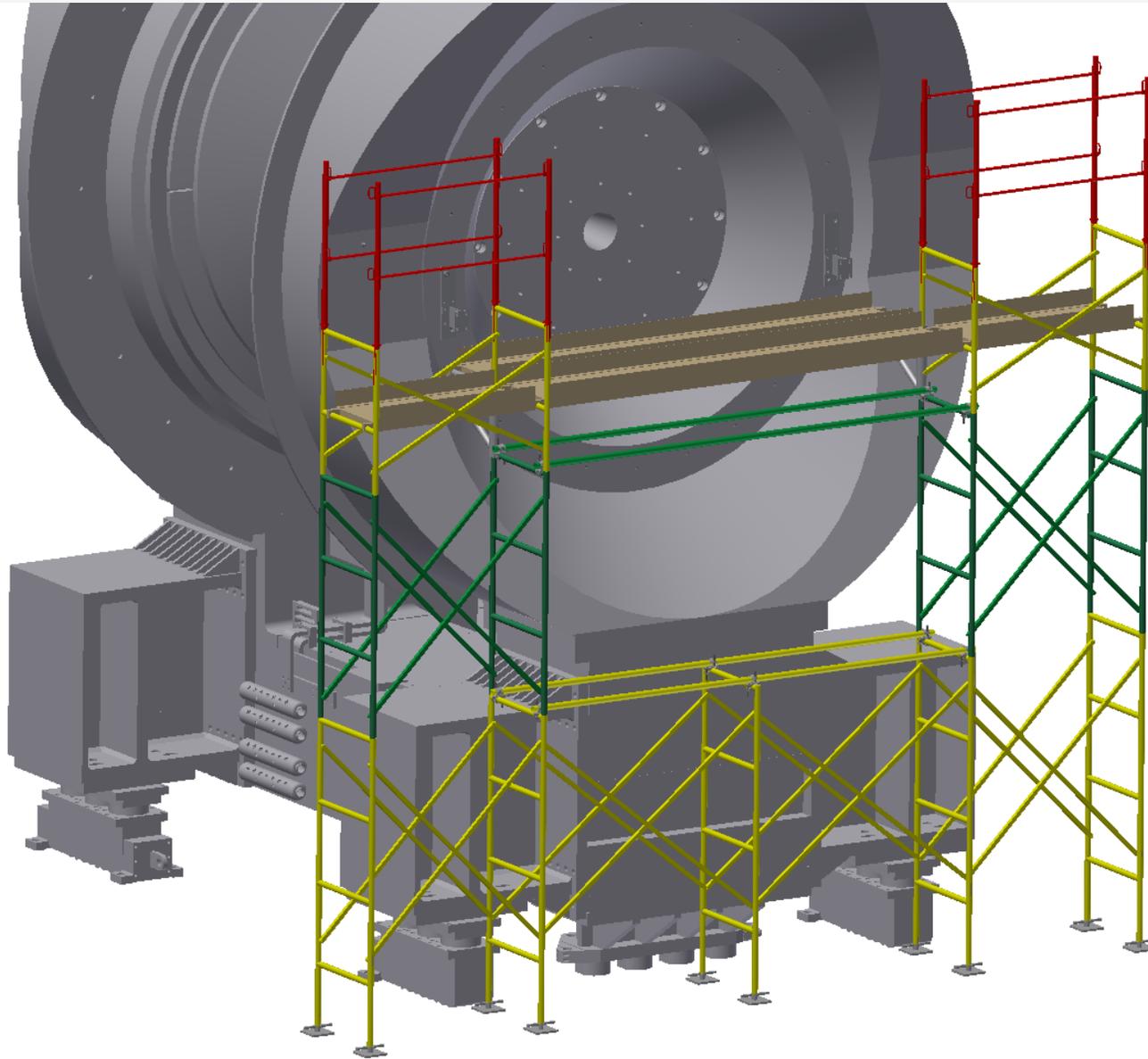


Station 1 platform configured for lower level access shown with North Muon Magnet in phantom for reference and invisible for clarity.



Central Magnet suspended work platform also shown in both models, but not needed for 2014 shutdown.

PHENIX SAFETY SCALDING NORTH

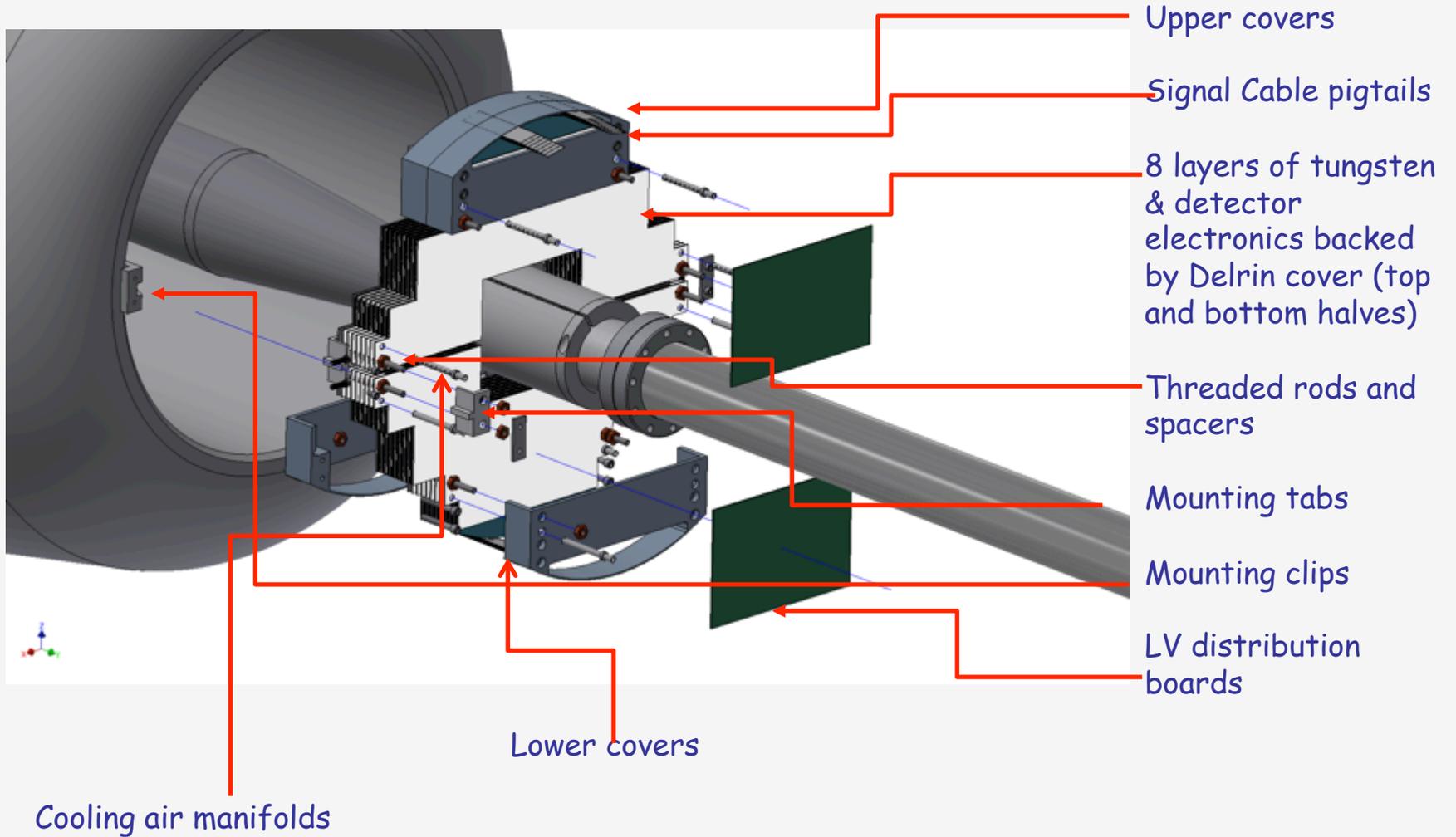


SAFWAY Scaffolding arrangement for upper access. Ladder and MMN not shown for clarity.

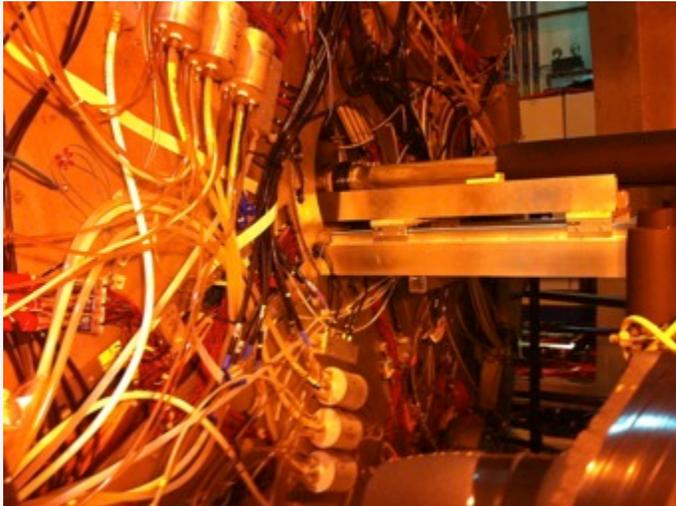
Configuration required for space between CM and MMS is similar.

MPC-Ex Exploded view

PHENIX
EXPERIMENT
AT
CERN



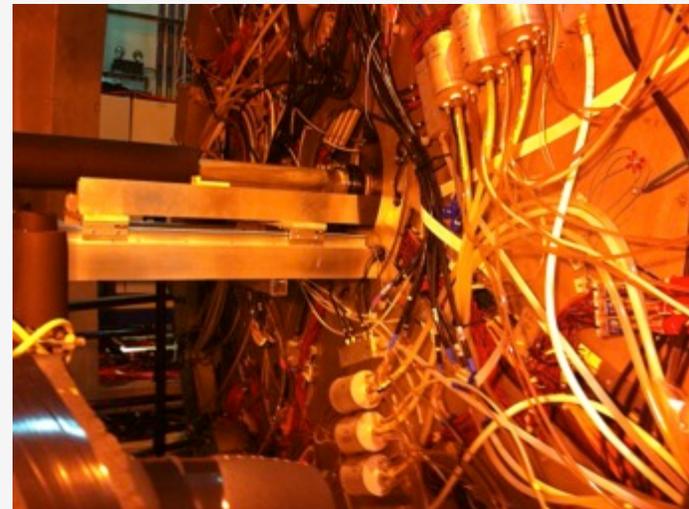
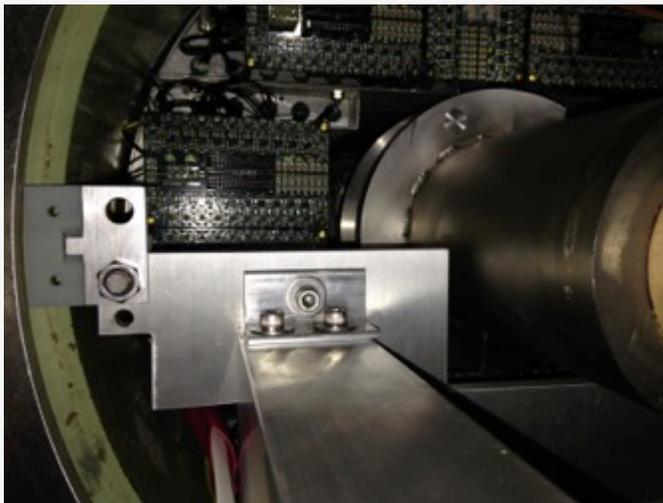
MPC-Ex N & S Final Installations This summer



Working on North BP support design

Tungsten plates received, QC acceptable

Additional parts ordered from CS due end of June



7/3/2014

MPC-EX Status Summary

- **Sensors:**
 - 200 tested sensors at BNL
 - 50 shipped from ISU
 - 130 in testing at Yonsei
 - 37 wafers (74 sensors) under fabrication at ETRI (done now?)
- **Micromodule Production:**
 - 74 “final” production micromodules (with spacer) laminated as of 7/8
 - 46 of these are at wire bonding (Norbert to assist Don Pinelli)
 - Lamination proceeding steadily at 8 micromodules/day (Lucy)
 - Additional assembly jigs have been ordered
 - Conductive leaf replaced with Cu tape
 - Next batch of 201 ROCs sent to QuikPak for SVX4 wire bonding
 - 82 ROC boards still in production at Sierra
- **Other Detector Components:**
 - Tungsten and Carrier Boards at BNL, in assembly (or assembled)
 - Parts being tracked carefully as they are used for testing, etc.
 - Assembled FEMs received at BNL 7/7
- **Run-14 Engineering Run:**
 - Bias testing underway now that run is over, large currents seen
 - Strong suspicion that this is due to lifted bias leafs
- **SLAC Test Beam:**
 - June 20-30, great success

MPC-Ex Project Summary

Sent to Stony Brook for tests:

- 8 (4 x and 4 y) carrier boards laminated to 'W' plates (new plates).
- 3 loose carrier boards for testing (one missing a connector)
- 50 brass spacer nuts
- 4 SS 1/4 - 20 x 4" studs
- 4 rapid prototyped spacers
- 1 micromodule

Mike Lenz office:

- 1 Assembly fixture
- 3 Delrin covers (in the shape of the 'W' plates)
- 6 'W' plates (new plates) (all laminated, 5 are in Mike's 's office, Sarah took 1 to 1008 for tests)**
- 100 brass spacer nuts**

At Central shops/Instrumentation (due 7/11/14):

- 4 additional sets of micro-module assembly fixtures (bases at Instrumentation for 3D printing)**

Jim LaBounty's office:

- Installation assembly parts (to be itemized)

(Additional parts in currently installed partial South prototype to be itemized)

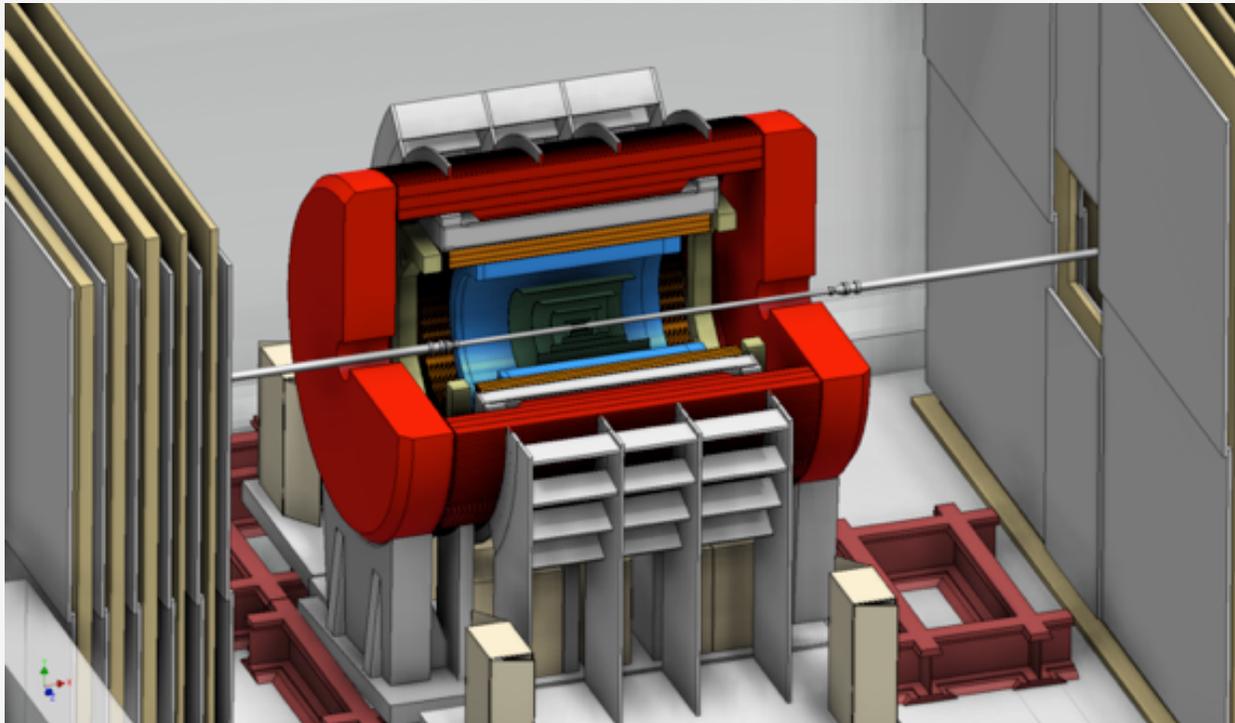
Other Shutdown work:

Request from E. Kistenev for 1 FCal module for R&D

- can be removed from north or south FCal ?
- Difficulty ?
- WP needed ?
- Comments ?

Design efforts over the next few months will include several areas of emphasis:

- (a) incorporating a more detailed flux return (cap) design
- (b) Firm up detector subsystem specifications and design
- (c) Support structure design and analyses
- (d) Infrastructure and support system design and analyses
- (e) Magnet acquisition testing and design of modifications



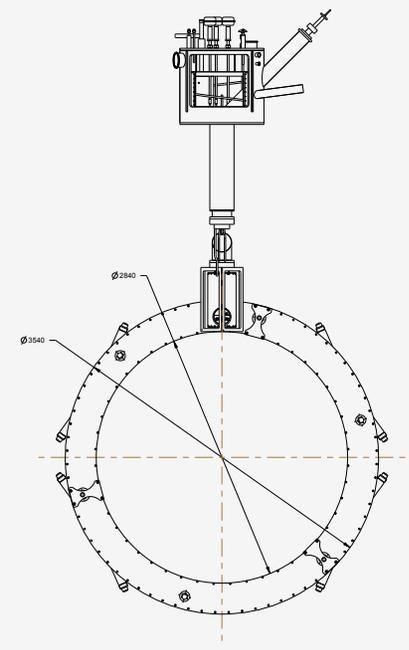
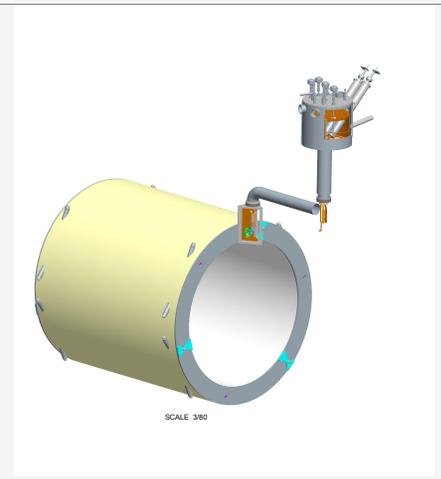
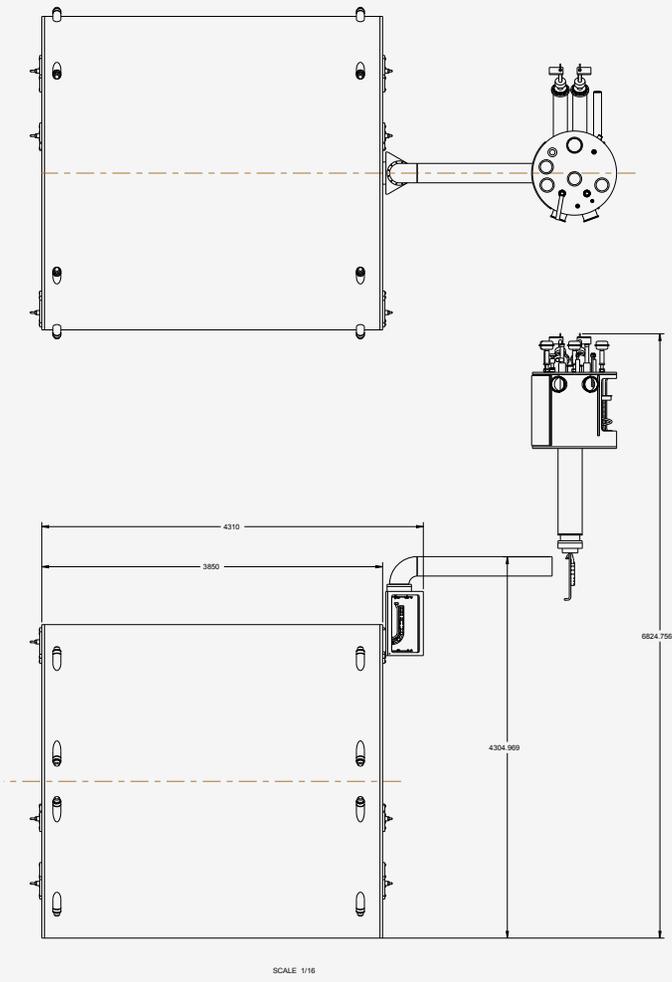
Basic sPHENIX model cutaway (updated)

BABAR Magnet Update

- Meeting yesterday at magnet division
- Shipping fixtures received
- Shipping vendor selected
- Need a transportation and handling review at CAD
- First need review of fixture by Magnet MFR

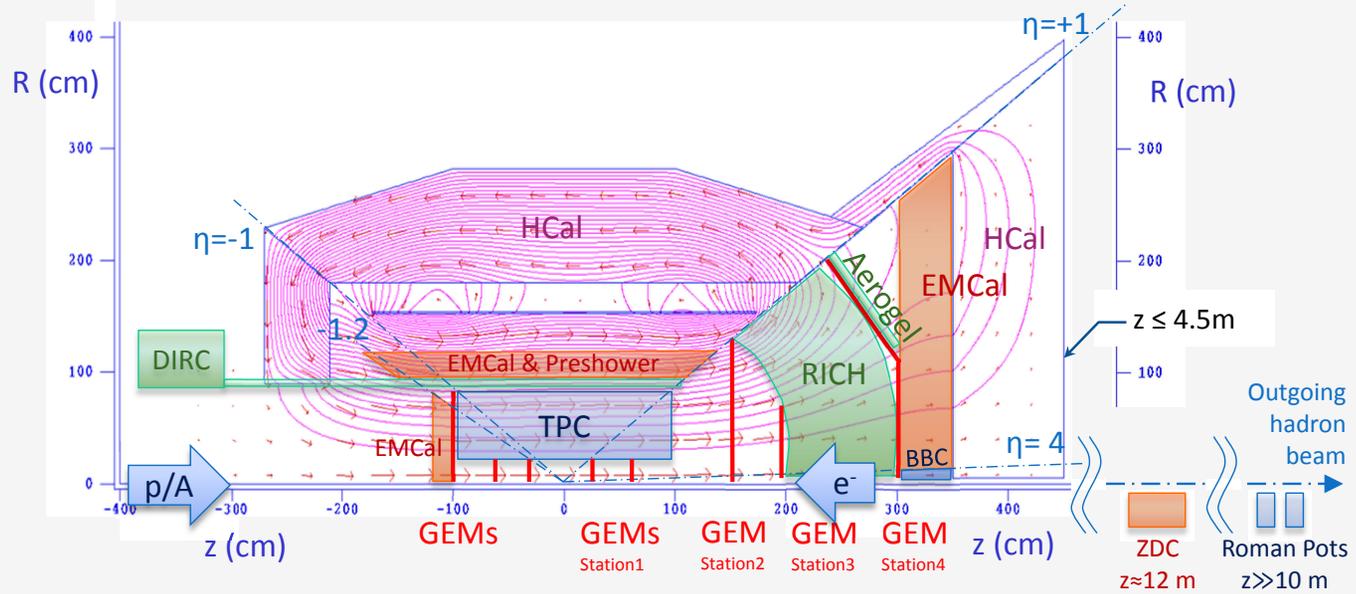
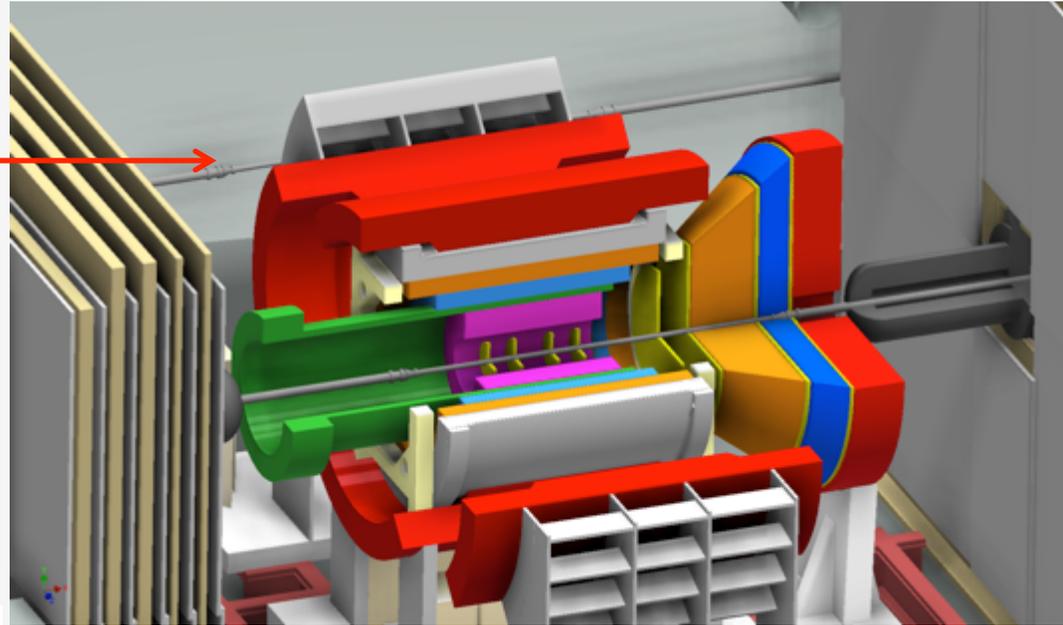
DOE Science Review

- Draft report is very favorable
- Presentations were well received
- Scientific case accepted
- Some "suggestions"
- Now we move forward
- Need to ramp up our efforts for the next step: "Show us the money!"



2ft high x 1 ft wide
clearance needed
for e-ring
components

ePHENIX



PHENIX Safety and Security

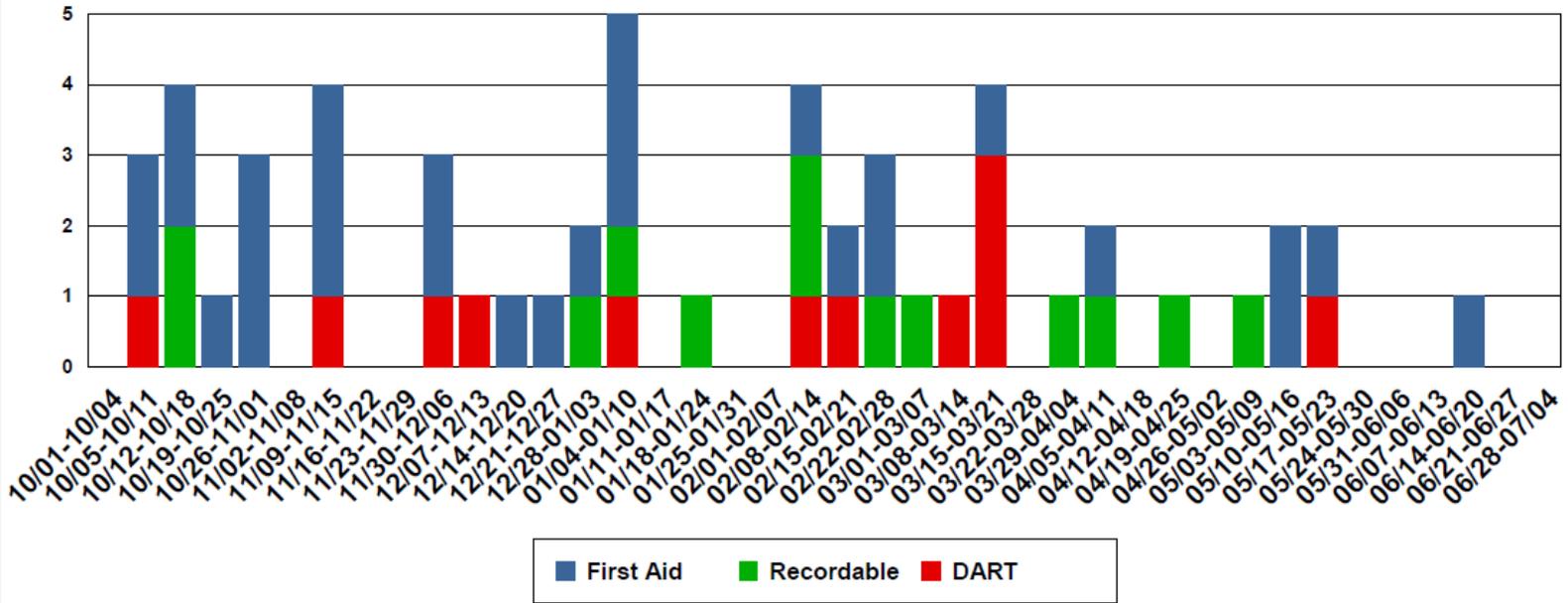
1. Make sure your PHENIX Awareness training and CAD Access training (annual) are up to date.
2. Make sure any other relevant training needed for the shutdown is up to date.
3. New training required for all who take BNL property off-site (e.g. laptops):

Mobile Device Accountability (TQ-DEVICE-ACCOUNT)



PHENIX SAFETY REPORT

Injuries Per Week (FY) As of 7/3/2014



Injury Status:

FY14 YTD: DART – 12, TRC – 25, First Aid – 29
 FY13: DART – 16, TRC – 38, First Aid – 53
 FY12: DART – 19, TRC – 36, First Aid – 69

FY13 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/Occlnj/BNLInjuries.aspx>

Recent Injuries

6/23/14	Info Only	A guest was walking up the stairs and fell, injuring her knee. She was given ice at the OMC. This does not meet the criteria for first aid.
---------	-----------	---

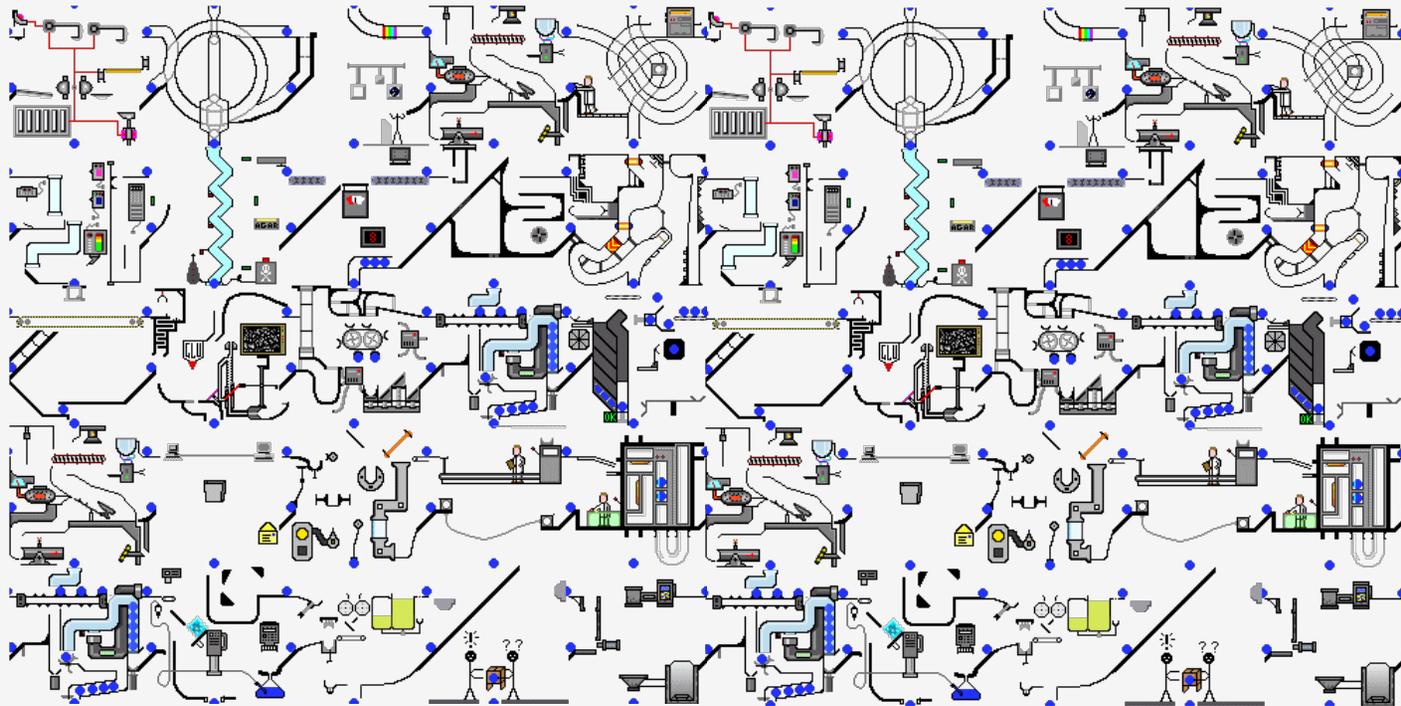


Recent Events		
7/2/14	SC-BNL	While preparing to pick up a full 40-yard scrap metal dumpster outside of Building 493, a contractor pulled down the overhead communication and power lines. In order to align the roll-off truck with the dumpster, the contractor drove forward (with the boom raised) and in doing so, made contact with the overhead communication lines outside of Building 494. The resulting force on the communication line caused a horizontal force on the pole to which it was attached and on subsequent overhead power wires. The power line fell to the ground and the communication line fell onto the truck; both were de-energized. The driver exited his truck safely and Fire Rescue and Security were notified. There was a loss of power and communications to Buildings 493 and 494, the Vehicle Monitoring Station & Truck Scale, and the Long Island Solar Farm's remote monitoring capabilities. There were no injuries. Repairs are in progress and an investigation has been initiated. (Event Link)
7/1/14	Non-Reportable	It was discovered that an un-grounded end of the AC septum existed in the both the injection and extraction areas. A Rad Tech making radiation measurements at the injection AC septum contacted the un-grounded end and a ground point with a meter, which caused a spark when the AC septum was pulsed. Voltage measurements were taken at both the injection and extraction AC septum un-grounded end, where there is a ceramic insulator. The peak voltage at the injection area was approximately 45 volts and at the extraction area was approximately 95 volts. The energy behind the spark was below 10 joules (this is a fraction of the energy dissipated in the AC septum magnets). At no time was the Rad Tech exposed to a hazardous voltage at the injection septum. To prevent any exposure to voltages, a simple Nomex cover was installed over the areas that had voltage when the AC septum pulsed, until it could be corrected. (Event Link)



Where To Find PHENIX Engineering Info

2014 Shutdown Has Begun !



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

7/3/2014

