

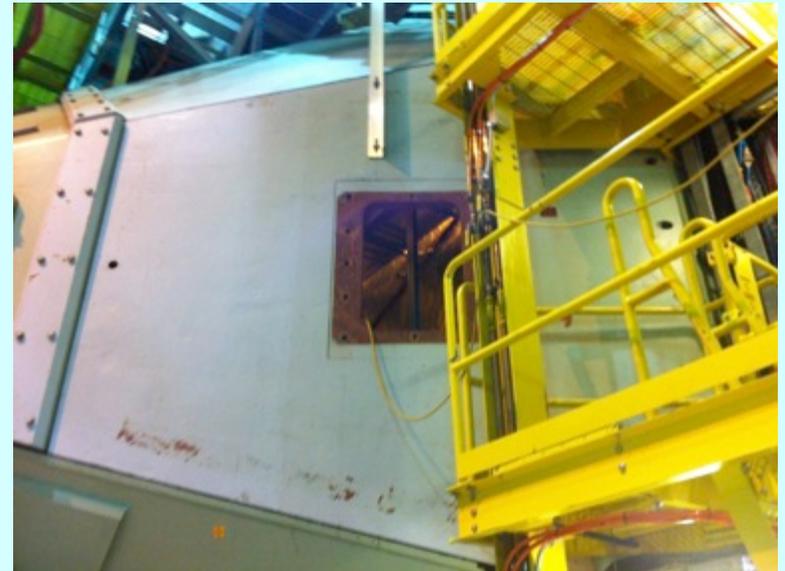
# PHENIX WEEKLY PLANNING



Don Lynch

## This Week

- Complete MMN Scaffolding
- Continue VTX Repairs/Upgrade
- Continue building VTX strip-pixel staves
- MPC-Ex installation prep
- DC East repairs prep
- Continue sPHENIX support
  - HCal prototype
  - EMCal prototype design continuing
- MPC-Ex design for run 14
- Future IR evolution modeling



## Next Week

- Continue VTX Repairs/Upgrade
- Continue building VTX strip-pixel staves
- MPC-Ex installation prep
- DC East repairs prep
- Summer Sunday Prep
- Continue sPHENIX support
  - HCal prototype
  - EMCal prototype design continuing
- MPC-Ex design for run 14
- Future IR evolution modeling

### Major Projects This Summer:

- VTX repairs/upgrades/general maintenance (Mike L./Kenny J.) Work permit approved
- DC East Window Replacement (John T.) Work permit at CAD for Approval
- MPC-Ex Initial (partial) Installation (Jim L.) Work Permit needed
- mRPC Tests in mRPC Test Lab (formerly RPC Factory) (Frank T.) Procedures Done
- sPHENIX Prototypes assembly & tests (Carter B., Frank T.) (need space allocation and work permit(s))
- MuTr troubleshooting and Repairs (Chris P.) Window Washer Winch upgrade (Jim L.)

Other Mechanical (TBD)

Other Electrical Projects

- HVAC Controls Upgrade (Frank T.)
- Complete Window Washer Controls Upgrade (Frank T.)

Other Electronics Projects

- Additional upgrading of ADAM system to MODBUS (Sal P.)
- Electronics research in support of sPHENIX and MPC-Ex (Sal P.)
- Lecroy HV communications upgrade (Sal P.)

Other Gas System Projects (TBD)

- RPC Gas Recirc. Upgrade (John T.)
- DC Bubbler Work (John T)
- Drawing and Config. Control Improvements (SULI Student)

Other Infrastructure Projects (TBD)

# VTX/FVTX repairs/upgrades

PHENIX FRONT ROOM



Waiting for cores

## VTX & FVTX Summary of Tasks

VTX/FVTX Disassembly - After Start of shutdown tasks are completed (EC out to AH), coolant and N<sub>2</sub> lines, LV, signal and HV cables and fibers will be carefully removed and coolant drained. East and west detector halves will then be de-mounted and transported to Chemistry bldg for maintenance and overhaul. - Done

At Chemistry lab - VTX, bigwheels and FVTX will be disassembled and all 4 FVTX stations will be transported to the FVTX PHYSICS Lab. - Done

At PHYSICS FVTX lab -FVTX stations will be tested, faults will be isolated, repaired and re-tested.

Concurrently at Chemistry lab -VTX will be disassembled into individual barrels and bigwheels, new /reworked pixel staves will be installed, improved strip-pixel staves will be fabricated assembled and integrated with active components harvested from staves to be replaced, tested and reinstalled in their respective barrels. The VTX will then be re-assembled tested and re-surveyed.

FVTX transported to Chemistry building. FVTX Integrated into VTX. VTX/FVTX assembly surveyed

VTX&FVTX assembly transported to PHENIX and installed on rails.

Coolant and N<sub>2</sub> lines, LV, signal and HV cables and fibers will be carefully reattached.

Full detector re-surveyed in IR



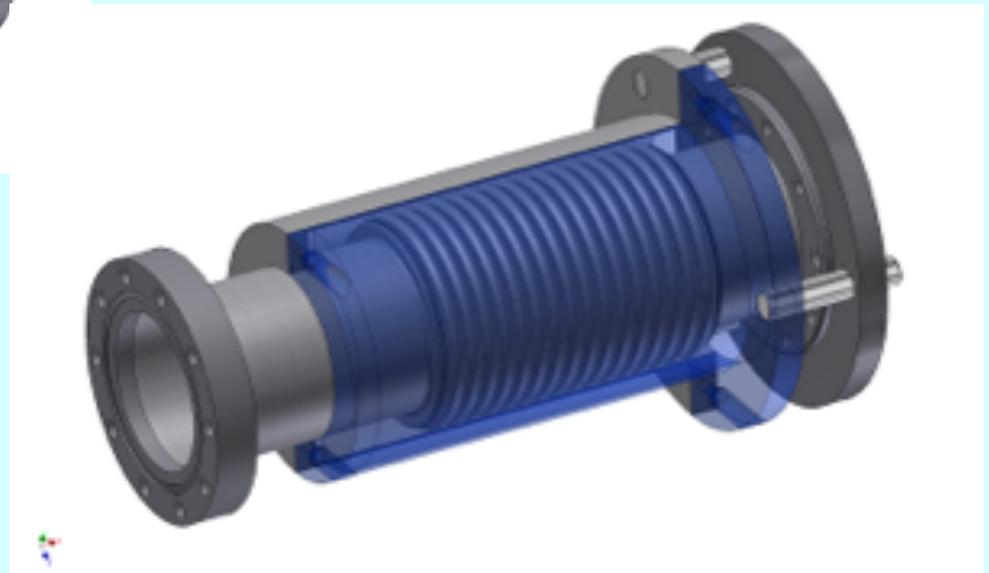
## DC East Repairs Summary of Tasks

- East Carriage move to AH - Done
- Work Permit - Done
- Design & Construct tent (similar to tent constructed for DC West last year) to prevent foreign material from entering DC East cavity while window is removed.
- CAD to provide 2 vertical manlifts to allow DC experts to remove and replace window
- Get supplies and materials from Stony Brook for window replacement
- Troubleshooting and repairs on DC West
- Supply Gas, DAQ and Electric to EC East
- Isolate and repair leak on DC East
- Remove and replace window
- Isolate and repair leak under electronics card
- Leak test
- Operational tests
- Remove tent and manlift

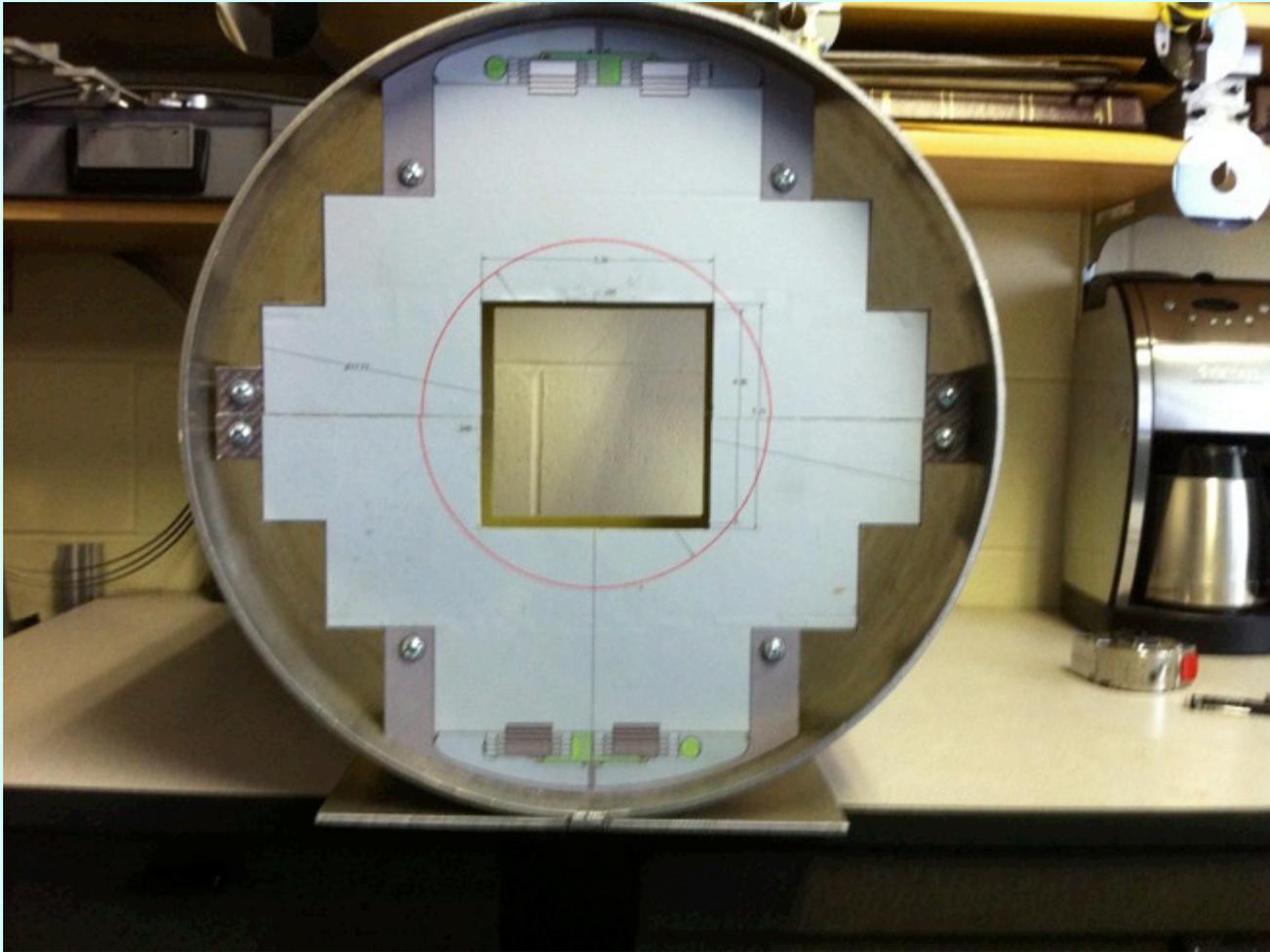
PHENIX  
SUPPORT  
TEAM



Existing vacuum bellows anti-squirm In MPC S Cavity

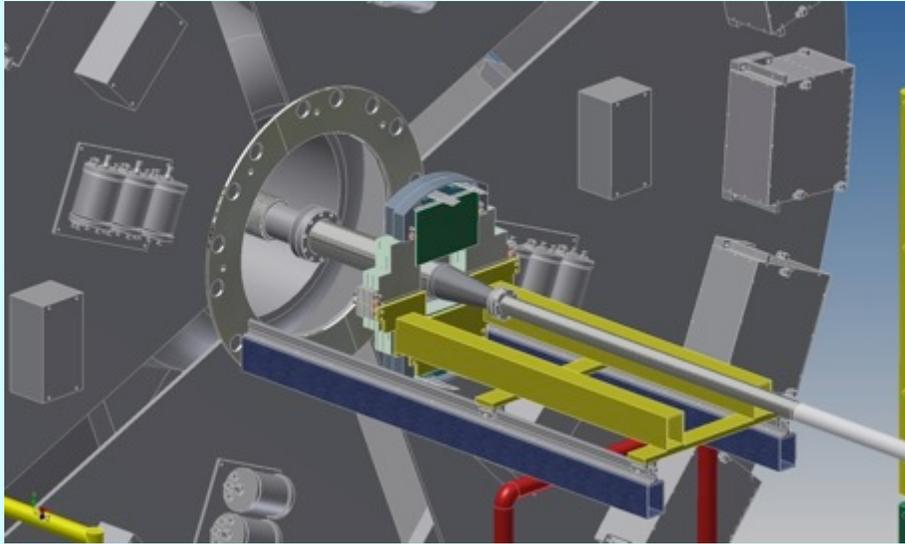


Design vacuum bellows anti-squirm in MPC S Cavity to accommodate MPC-Ex. Met with Mike Mapes for CAD approval of the new design. Mapes concurs, parts now at CS for fabrication



MPC-Ex mockup to be used for cable and utilities routing plans

PHENIX 7 SDCS FRONT VIEW



7/25/2013

MPC-Ex Initial/Partial Installation Summary of Tasks

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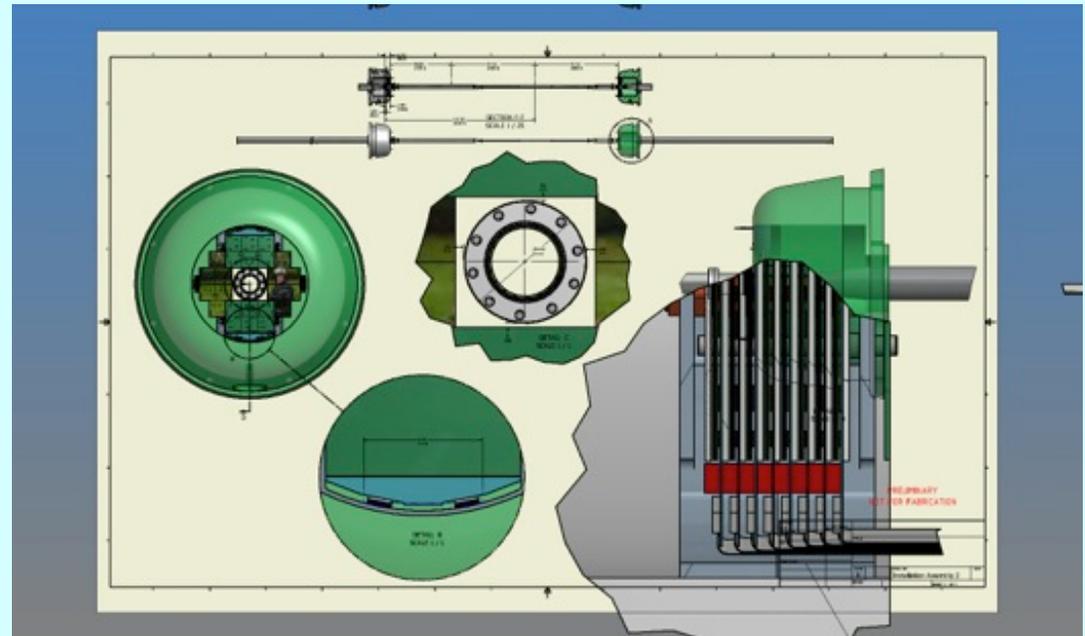
**Determine extent of installation for 2013 - Done:**  
 For Run-14 the goal will be to install four mechanically complete layers of the MPC-EX, both top and bottom halves (8 tungsten plates) in the south muon magnet piston. Four layers will have carrier boards, and those carrier boards will be partially populated so that we have partial coverage in azimuth with full coverage in depth. *Installation Schedule 11/1-11/15*

**Design assembly, support and installation fixtures**

**Assemble and bench test**

**Install**

**Performance tests**



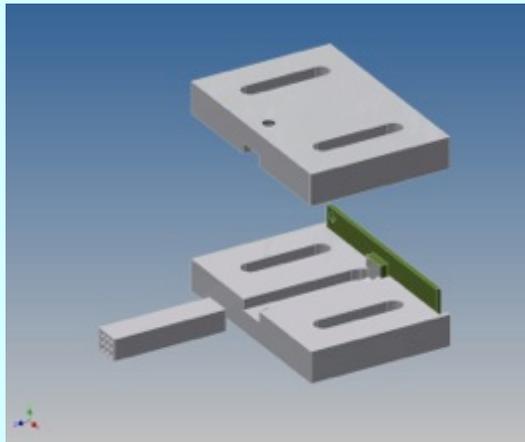
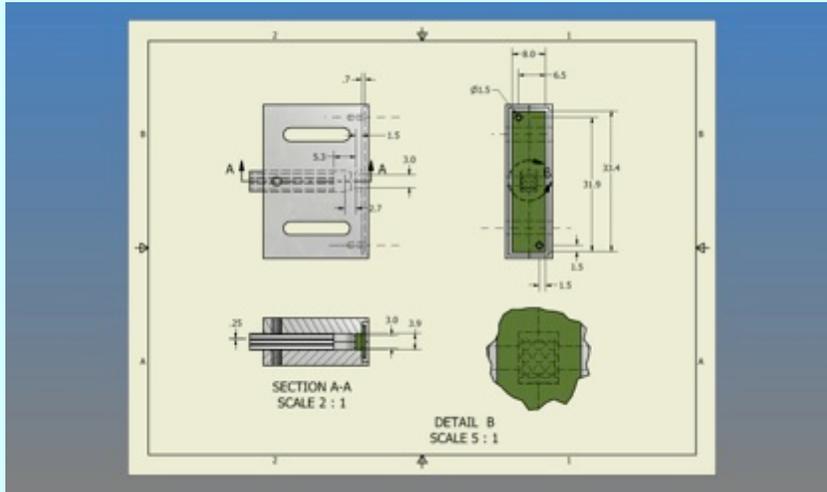
mRPC Test Lab Project

PHENIX PRODUCTION



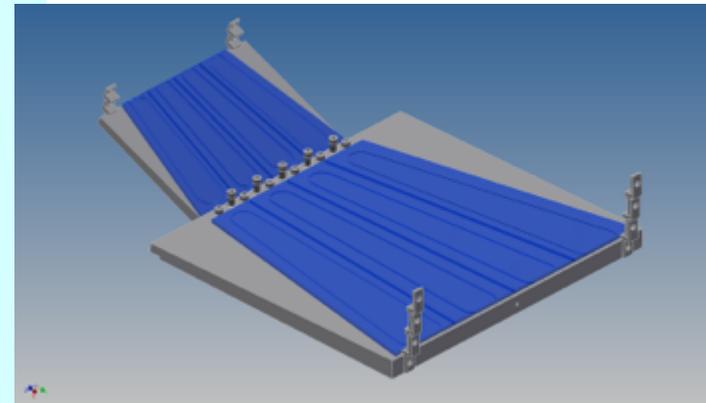
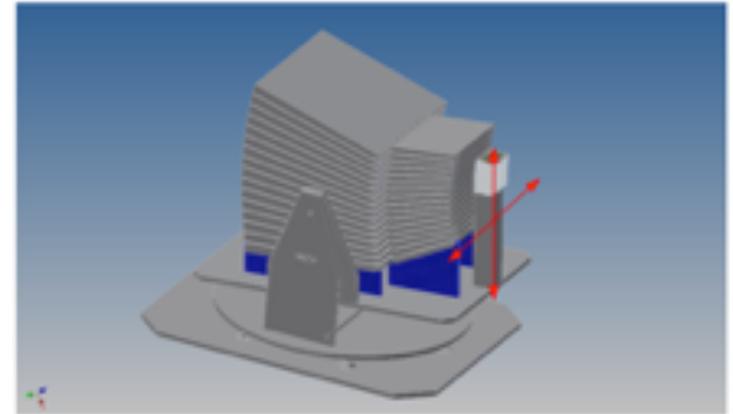
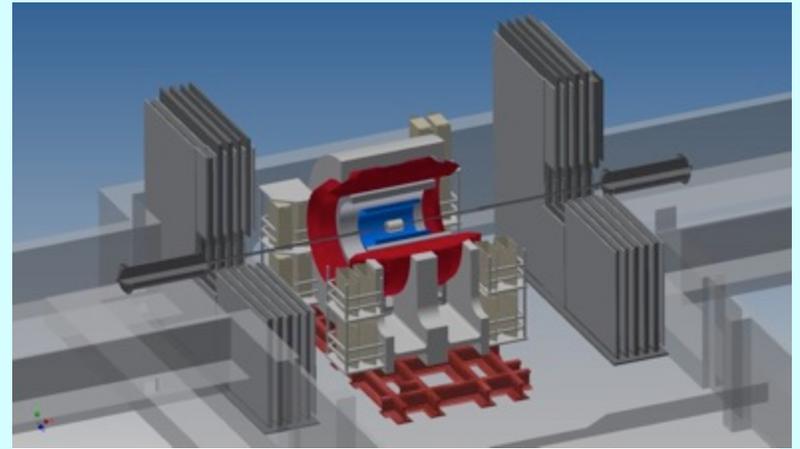
mRPC Test Lab Support  
as required



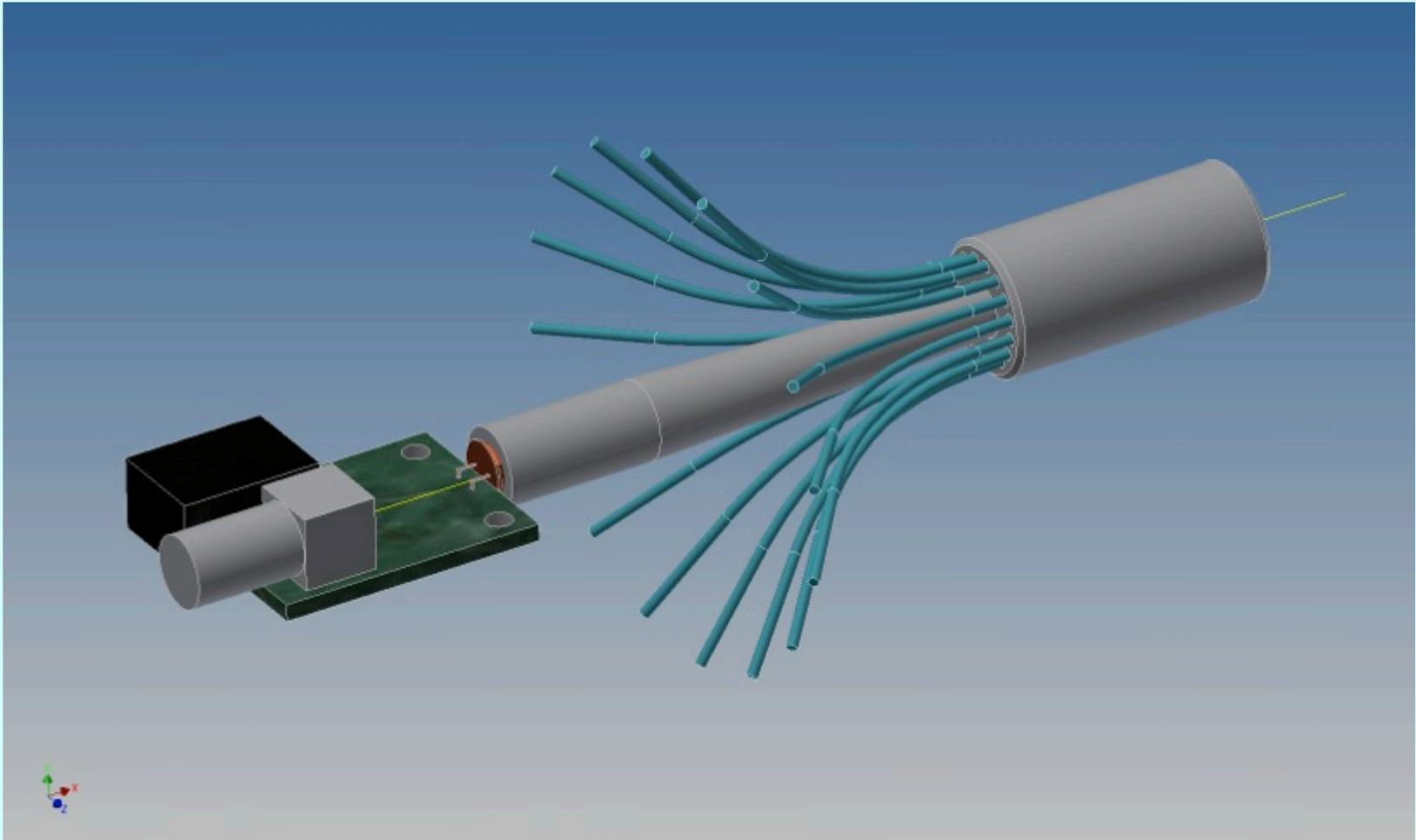


Hcal prototype component procurement is underway:

Steel and scintillator procurements in progress



PHENIX 3D CAD MODEL





Lift Table moved to PHYSICS HiBay.

BABAR Magnet acquisition approved.

J. Haggerty & D. Lynch met with P Wanderer & M. Anerella to discuss shipping and delivery of magnet to Mag. Div., etc.

## sPHENIX Prototype Assembly and Test Tasks

Design Hcal and EMCAL Prototypes and support components and shipping crates - **in progress**

Procure materials and detail parts - **in progress**

Receive and inspect parts

Assemble prototypes

Test assemblies for mechanical fit and function

Package and ship prototypes to FERMI Lab for performance tests

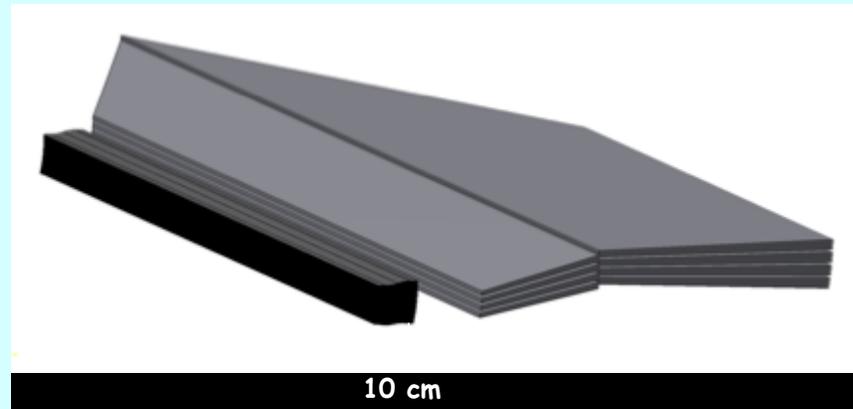
Test and Evaluate at Fermi Lab

# EMCal Prototype

Prototype accordion plates with fibers produced as part of SBIR. EMCal for test beam will be flat tapered plates



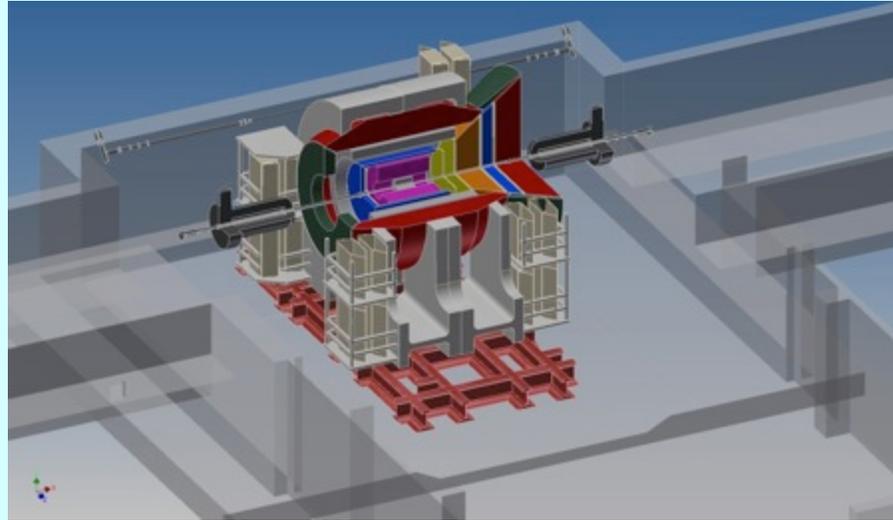
Prototype "Egg Carton" light collection



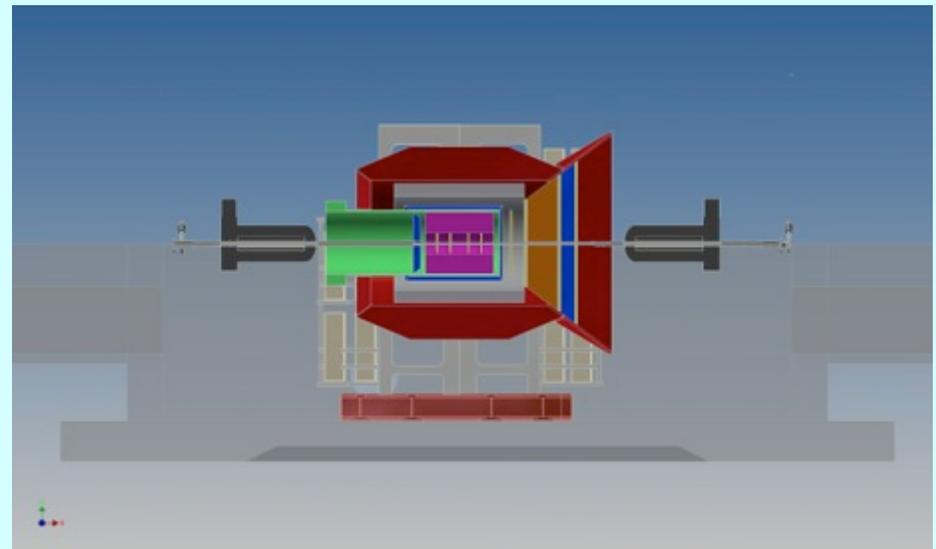
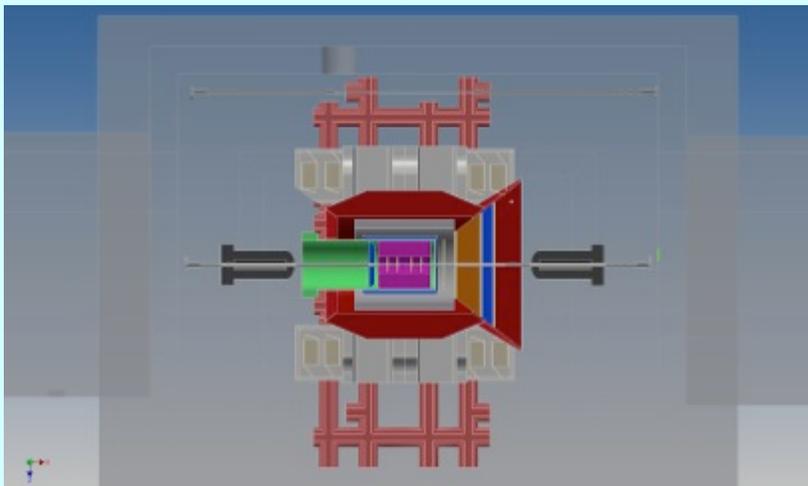
Proto-type EMCal in front of proto-type HCal

(Photos from Eric slides, from Craig and Sean slides)

ePHENIX



Plan View

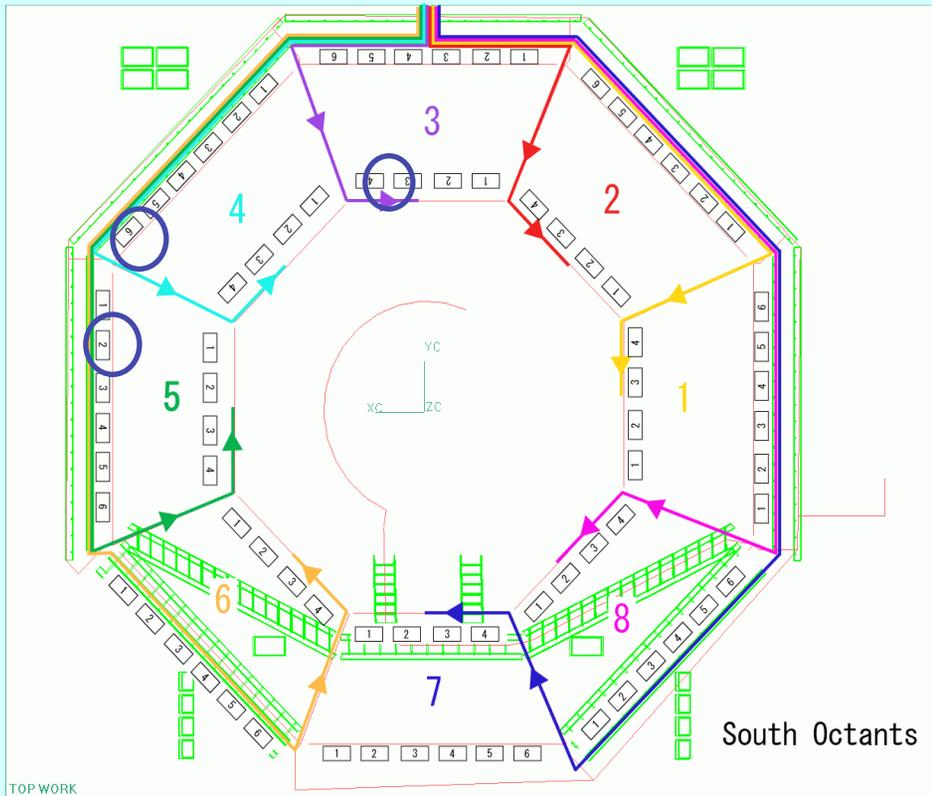


Elevation View

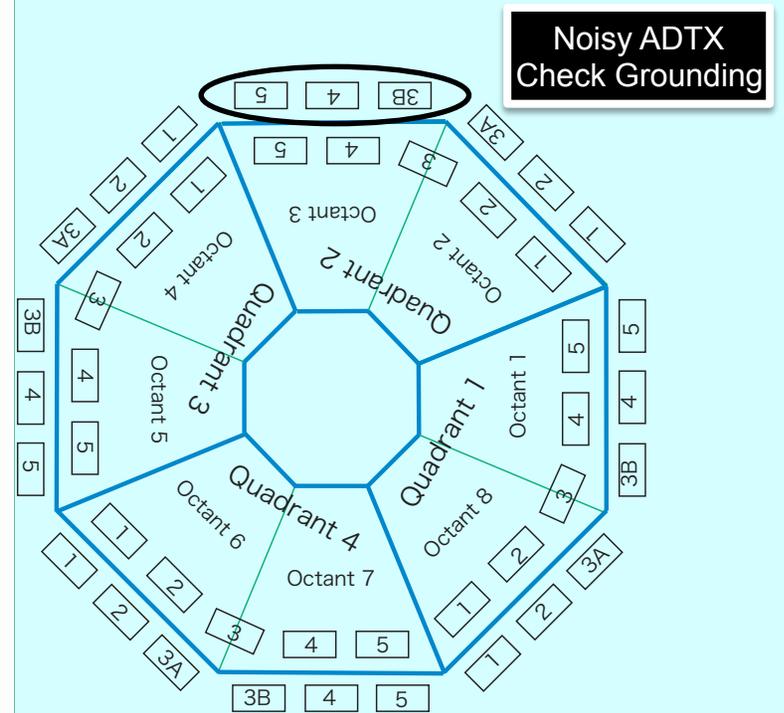
# MuTr South Arm Areas to be accessed

PHENIX SOUTH ARM

Station-2,3

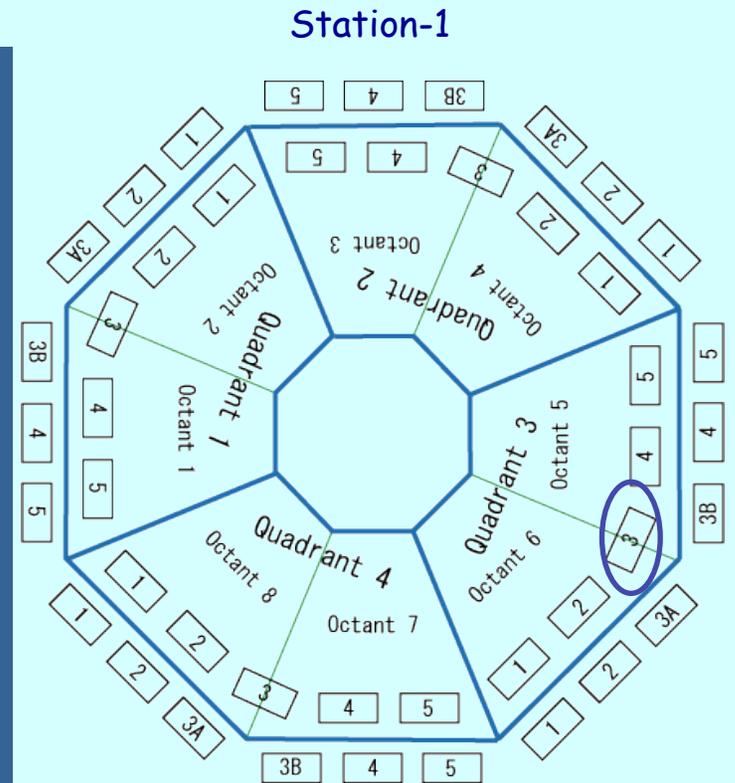
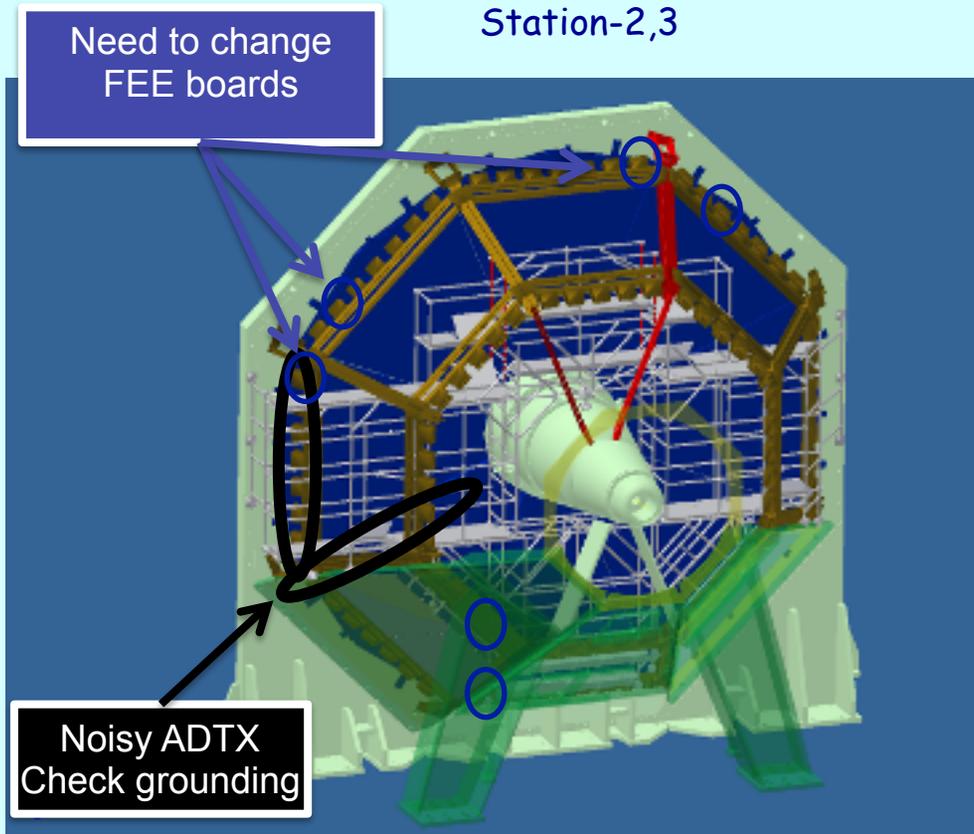


South Station-1 Chassis



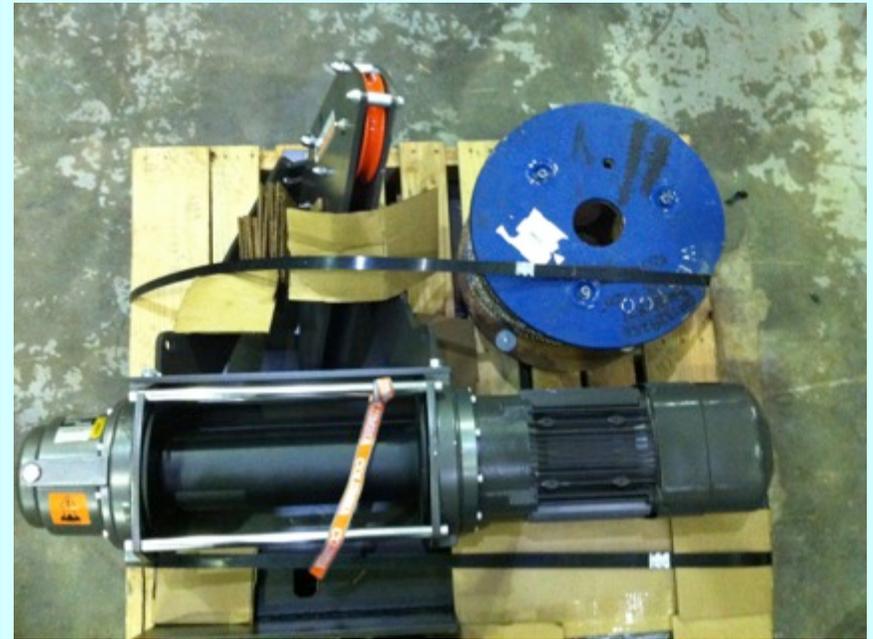
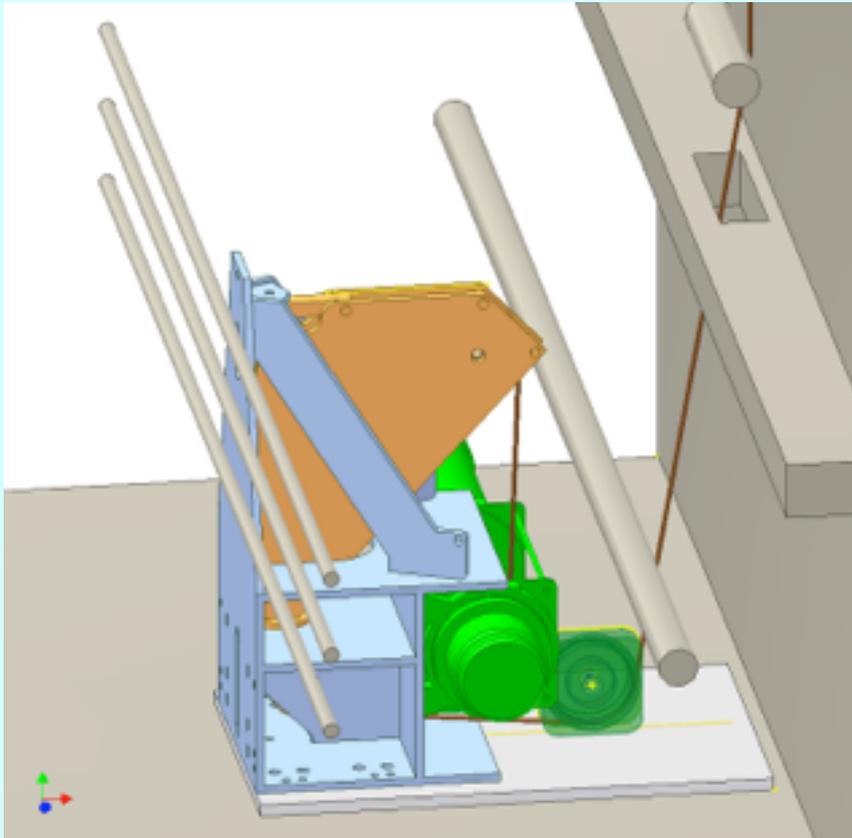
# MuTr North Arm Areas to be accessed

PHENIX NORTH ARM



*This area will not be accessed during 2013 shutdown.*

### Window Washer Winch Upgrade



Winch Received

## Window Washer Winch Upgrade Summary of Tasks

Specify and Order Winch & Sheave - Done

Work Permit - Done

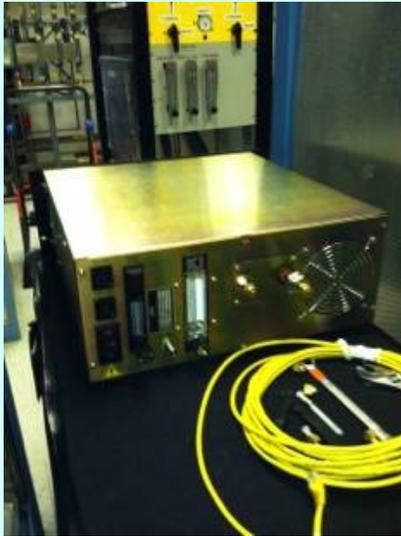
Receive and Inspect winch and components - **Received**

Design and Fabricate Winch & Sheave Base

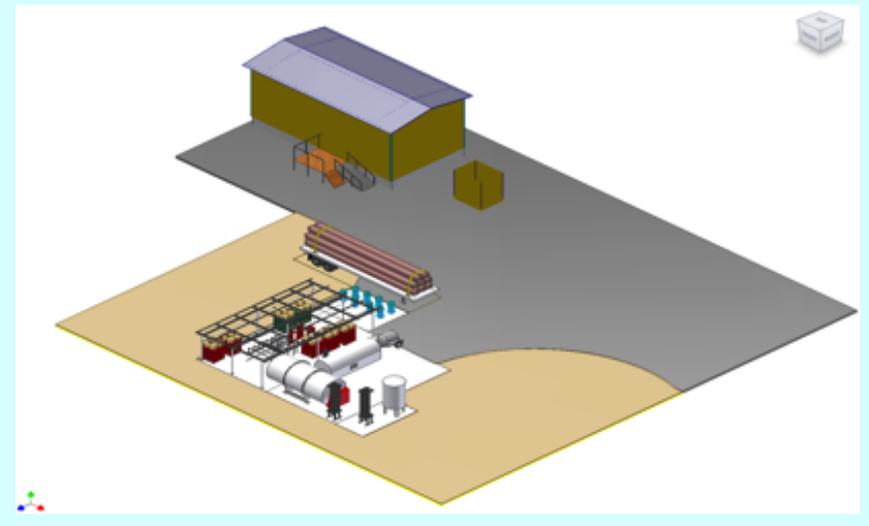
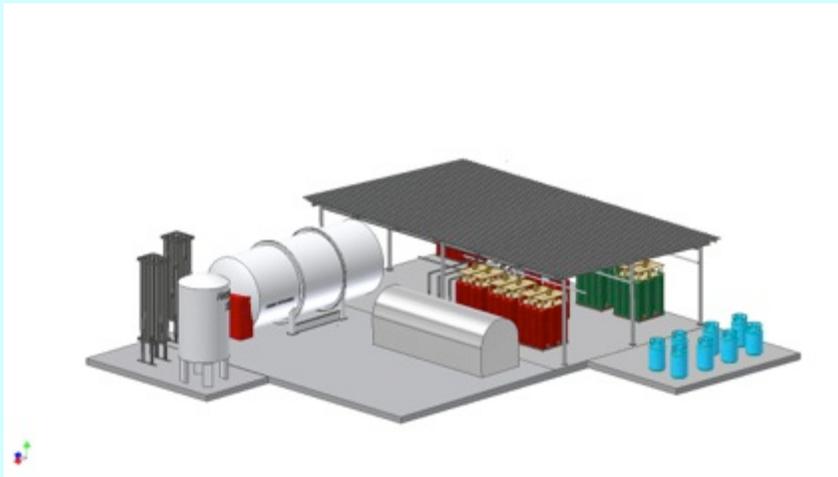
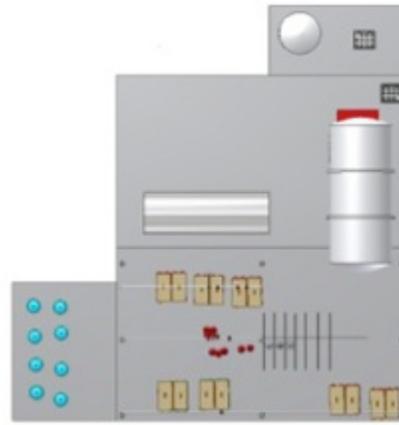
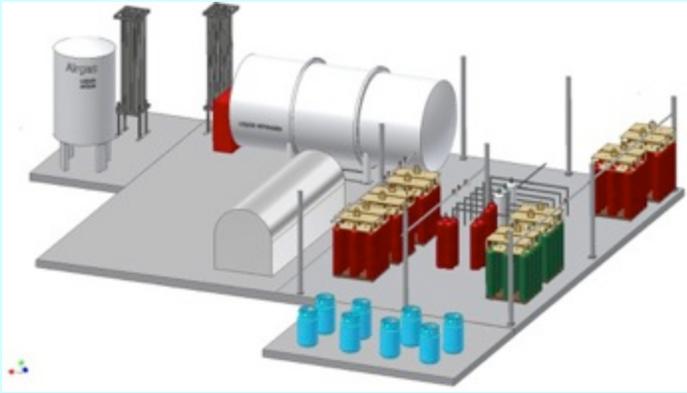
Install and test Winch, integrate with window washer hardware, controls and power

Final Inspection and approval of window washer upgrade

(Note: remote safety pin insertion and retraction was installed and has been in operation since the start of run 13.)

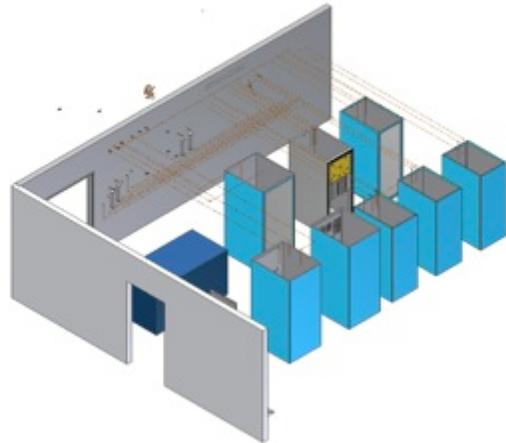
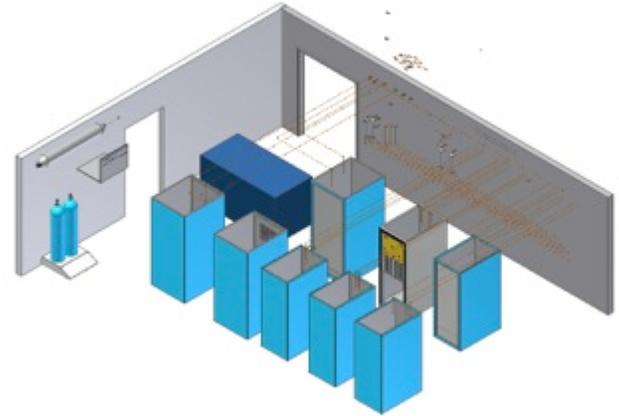
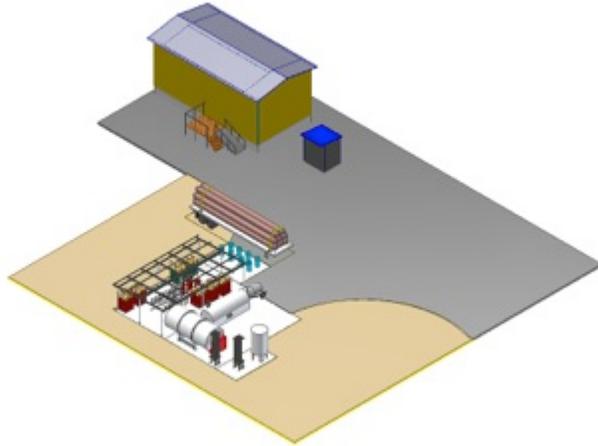


### New Gas Analyzer Project (RPC recirculation and more)



Gas System CM and Model Updates





Alcohol Chiller Work For Shutdown 2013



Merlin Chiller

- Chiller supplied about ½ the flow as in the past.
  - Pressure on chiller says ~70-80psi
  - Install gauge on supply line and measure actual output pressure.
  - Replace chiller with spare if needed.
  - Send old chiller out for maintenance or replace.

Re-Insulate Glycol lines



- ❖ Remove old polyethylene insulation and wrap and replace with foam rubber insulation.
  - Temp of fluid is affected too much by temp change in the gas house.
  - Lines are condensing and dripping because of gaps in insulation.

Locate and fix Glycol Leak.



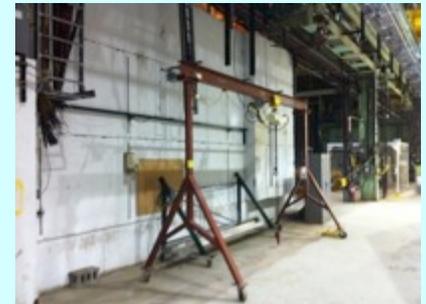
- Replace all three flow meters (compatible with Propylene Glycol )
  - switch to Visi-Float (VFA) for better compatibility
- Redo connections (replace fittings) behind flow meters
  - Re-insulate all cold lines with foam rubber insulation.

## Additional Shutdown Work

- ZDC Remove, Test, Recalibrate



- RPC Factory Decommissioning



PHENIX FRONT-NON

## 2013 Shutdown Schedule

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Prep for 2013 shutdown	Done
Design, Fabricate MPC-Ex	
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
VTX Strippixel redesign	Done
VTX Strippixel 1 <sup>st</sup> article stave assembly	Done
VTX Strippixel 1 <sup>st</sup> article qualification/performance tests	Done
VTX strippixel stave production	5/20-9/20/2013
VTX Strippixel sensor reclamation	4/1-8/20/2013
VTX Strippixel ladder assembly & Test	7/15-9/27/2013
Pixel Ladder repairs	4/1-9/20/2013
Run 12 Ends	Done
Shutdown Standard Tasks	Done
• <del>Open wall, disassemble wall, Remove MuID Collars</del>	
• Move EC to AH, etc.	
VTX/FVTX Post run tests	Done
Disassemble VTX/FVTX services	Done
July 4 <sup>th</sup> Holiday	Done
Remove VTX/FVTX and transport to Chemistry Lab	Done
Remove Lampshade MMS, East Vertical	Done
Assemble, Test and Install MPC-Ex (Partial, location TBD)	7/22-10/1/2013

PHENIX  
 ACCELERATOR  
 SHUTDOWN

MuTR Troubleshooting, maintenance and repairs	7/22-9/27/2013
Summer Sunday (8/4) Prep and teardown	7/29-8/6/2013
Summer Sunday (RHIC)	8/4/2013
DC East Window Upgrade and Related Repairs	8/10-9/27/2013
sPHENIX HCal Prototype Assembly/test	8/19-10/15/2013
Labor Day Holiday	9/2/2013
Re-assemble VTX/FVTX halves	8/19-10/14/2013
Test, survey (at Chemistry and IR) and re-install VTX/FVTX	10/14-10/21/2013
Install & Survey VTX/FVTX in 1008 IR	10/21-11/18/2013
VTX Commissioning	11/18-12/9/2013
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Pre-run commissioning and prep for run 14	11/1-12/31/2012
Veterans Day, Lab Holiday	11/11/2013
Prep for EC roll in	11/1-11/9/2013
Roll in EC	11/10-11/12/2013
Prep IR for run	11/1-11/30/2013
Thanksgiving Holidays	11/28-29/2013
Pink/Blue/White sheets	12/14-12/31/2013
Christmas Holiday	12/24-25/2013
New Year's Day Holiday	1/1/2014
Start run 14	1/2/2014

From Ray Karol:

**IMPORTANT:** DOE Fire Protection Program Review:

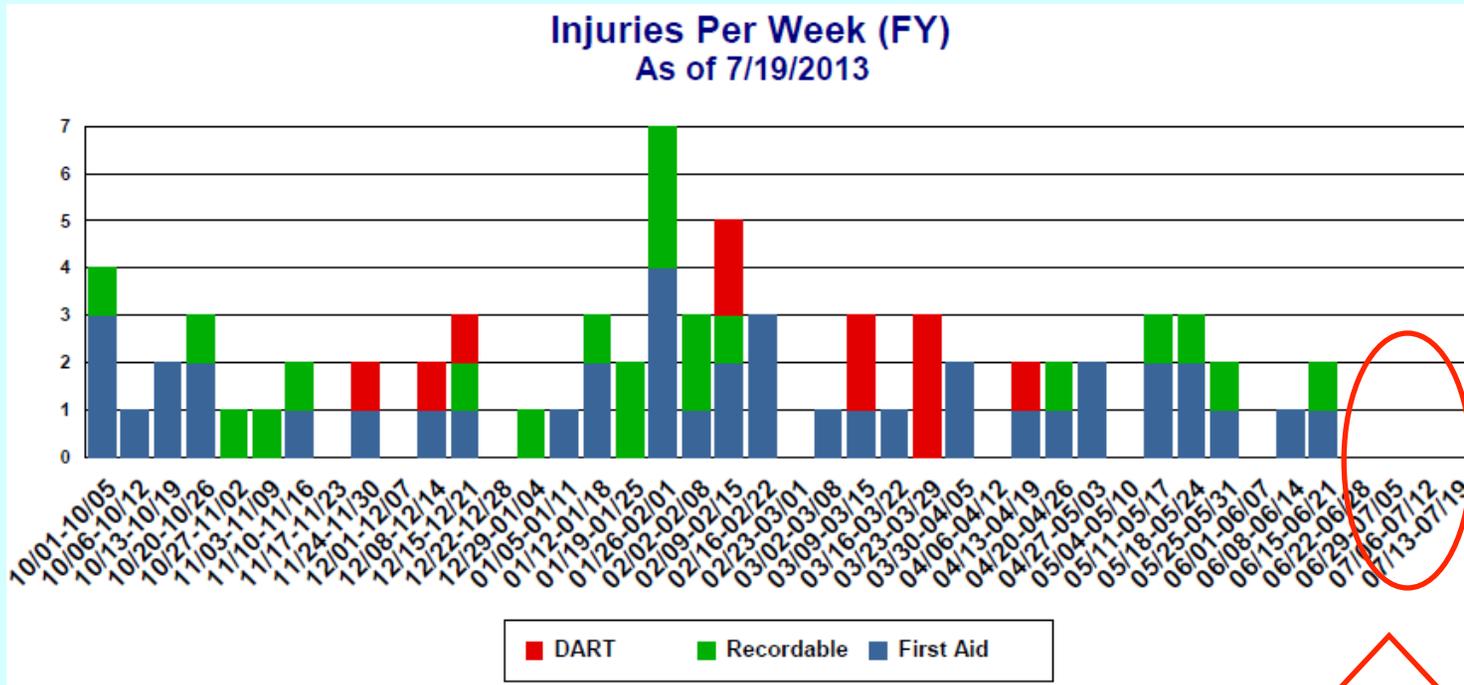
DOE will be onsite to conduct their triennial review of the Fire Protection Program during the **weeks of July 29 and August 5. (Next week)**

During this time, as a part of their assessment, they will be surveying a sampling of buildings to assess the condition of fire protection and life safety systems.

In preparation for the visit **Managers, Group Leaders, Technical Supervisors, Research Space Managers and all staff must all review our spaces to make sure that all:**

- Egress paths are free and clear of obstacles (such as furniture, carts and cylinders not in use)
- Fire doors are not chocked in an open position to prevent them from closing
- Fire loading is minimized by removing combustible materials from all areas. (for example cardboard, waste paper, etc.)
- Gas cylinders are properly segregated by type (for example oxidizers, toxics, flammables)
- Fire extinguishers are unobstructed
- Flammable liquids not in use are stored in flammable cabinets.
- Hazardous materials are properly represented in placards
- Butt stops are cleared of combustible material (such as leaves or pine needles)





**Injury Status:**

FY13 YTD: DART – 11, TRC – 32, First Aid – 41

FY12: DART – 17, TRC – 35, First Aid – 70

FY11: DART – 30, TRC – 44, First Aid – 45

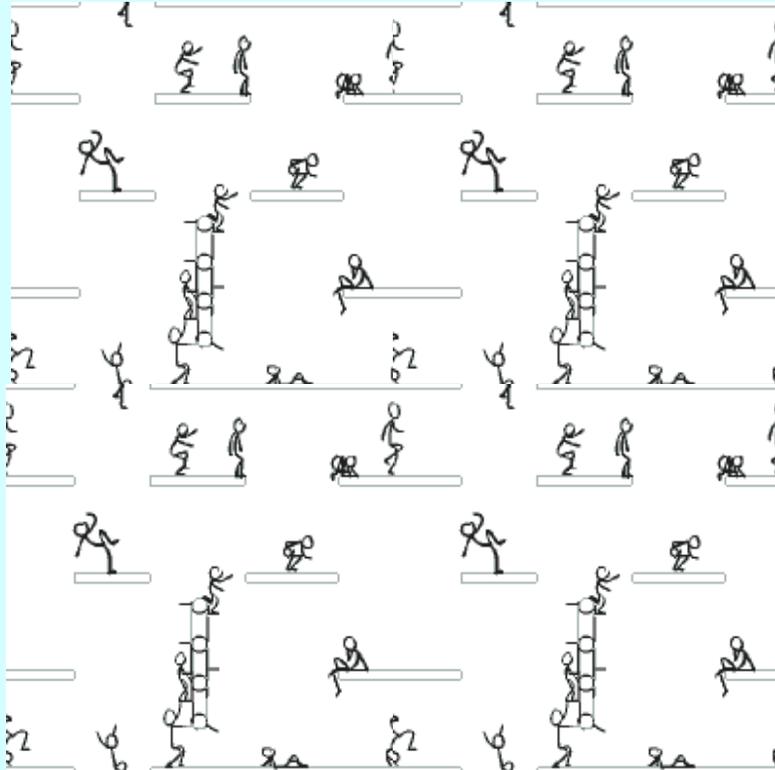
FY13 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/Occlnj/BNLInjuries.aspx>

Recent Injuries	
	None

No new injuries 4 weeks in a row !  
No new DARTS since April ! (CAD student injury not yet posted)

Recent Events		
7/16/13	SC-4	A scheduled inspection of controlled substances and associated records by Long Island DEA investigators took place on April 17, 2013. On July 16, 2013, notification of two deficiencies in the segregation of inventory records was delivered to BNL. No fine or penalty was imposed, contingent to BNL responding in 30 days to the notification, in writing, of corrective actions taken to remedy the situation. ( <a href="#">Event Link</a> )
7/15/13	SC-BNL	While a ceiling light fixture was off, the lamp glass shattered and some of the safety glass "pebbles" fell from an overhead light fixture in a hi-bay area (Toddler Room A). The closest individuals were 20~ 30 feet away at the time of the incident. There were no injuries. There was no release of any toxic materials. FPM, IH, and supervisors met on site to evaluate. Custodial services responded and the area was cleaned. An investigation is ongoing. ( <a href="#">Event Link</a> )

# Where To Find PHENIX Engineering Info



*As we approach the end of July, things are heating up and the work is becoming infinitely more interesting*

