



# PHENIX WEEKLY PLANNING



10/29/2009

Don Lynch

PHENIX  
WEEKLY  
PLANNING

# Completed Tasks

## Task

Start of shutdown tasks

Erected scaffolds in stations 1, 2 and 3 of MMS

Tools for RPC Factory: tilt table and burn in test stand

Designed and fabricated RPC installation components, fixtures

Procedures and work permits

Designed, fabricated and assembled PC1 repair fixture

Installed station 1 MuTrigger FEE upgrades

Repaired faulty DC FEMs

Removed HBD East for repairs & Reinstalled

Massive prep for installation of RPC3 North

Replaced failed PC1 module and associated PC1 repairs

Installed RPC3 North east & west bases

DC East Repairs

Installed 1W-5W, 7W&8W RPC3 N  $\frac{1}{2}$  octants & tested in place

HBD re-cabled and aligned

MuID steel top RPC3 N support brackets installed

RPC pitch control rails installed

6W, 1E-4E RPC3 N  $\frac{1}{2}$  octants ready for installation

MuTrigger FEE radiation monitor slide installed

RPC prototype absorber de-installed and stowed

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10/22/2009

# RPC3 North remaining Tasks

- Stencil/permanent mark RPC3 lifting fixtures
- Install and test 7 more  $\frac{1}{2}$  octants
- Final survey
- Install gas system and distribution
- Restore gap 5 piping and wiring
- Install 2 Racks in west trough
- Install rack components and wire up  $\frac{1}{2}$  - octants
- Install new vapor barrier
- Install heaters and thermostats
- Re-Install shielding
- Final wiring and commissioning

PHENIX  
PROJECT  
NOON

# This Week 10/19-10/23

Task Start Date End Date

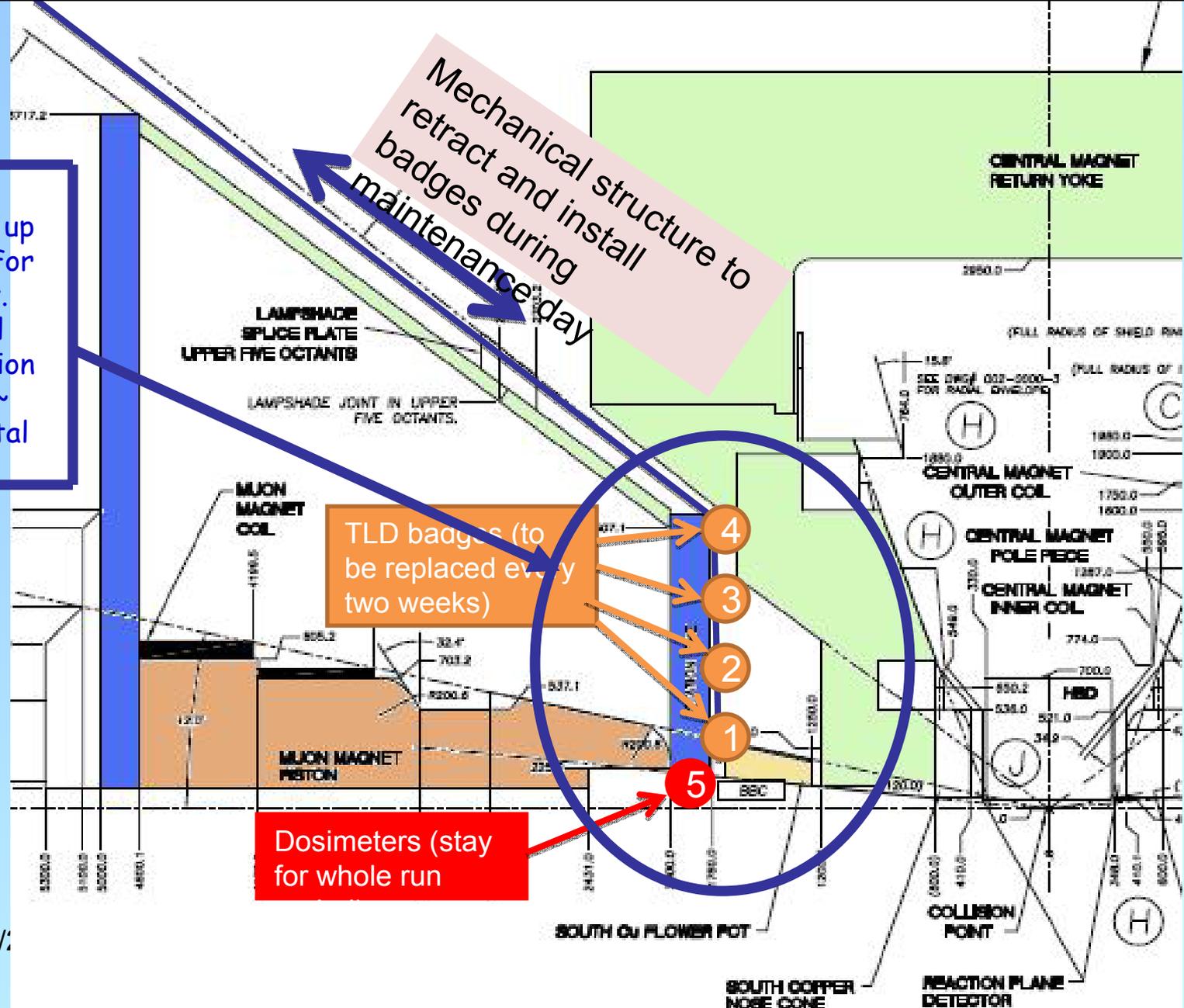
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Analyze and test EC dumbwaiter	In Progress	11/13
Install new gap5 N cable & pipe supports, cables and piping and leak test piping	In progress	11/13
MuTr HV and FEE test and evaluation as MuTrigger FEE's & RPC's are installed	In progress	11/30
RPC3 North Installation of remaining 9 1/2-Octants	In Progress	11/6
Close MMN Hatch and closeout WP	11/6	11/6
Install 2 RPC3 N racks	10/1	11/6
Install rack components in RPC3 N racks	10/1	11/13
Attach cables to RPC3 N racks and to Detector 1/2 octants	10/1	11/13

# Location of dosimeters in MuTr.S St.1

PH ENIX  
M U O N M A G N E T C O I L  
S O U T H C O P P E R N O S E C O N E  
R E A C T I O N P L A N E D E T E C T O R

Rotated up 90 deg for clarity. Actual installation to be ~ horizontal



Mechanical structure to retract and install badges during maintenance day

TLD badges (to be replaced every two weeks)

Dosimeters (stay for whole run)



# MuTrig-FEE Install Status

RIKEN/RBRC

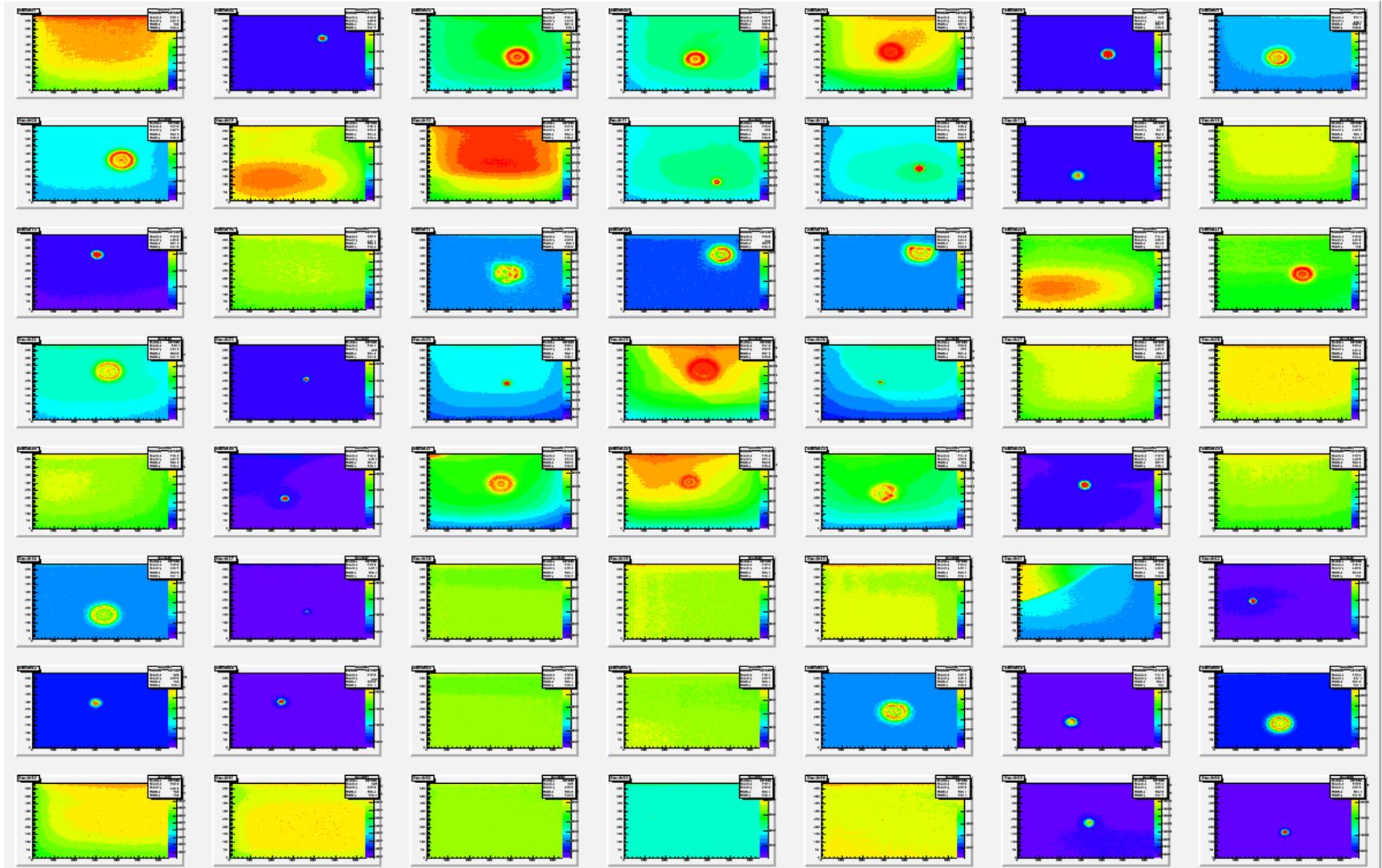
Itaru Nakagawa

# South MuTrig-FEE Installation

- No damage found by the water leak
- Completed Station-1 (Oct.27 Monday)
- Completed Station-2&3 (Oct.29 Today)
- Ready for Scaffolds disassembly



# Camera Alignment



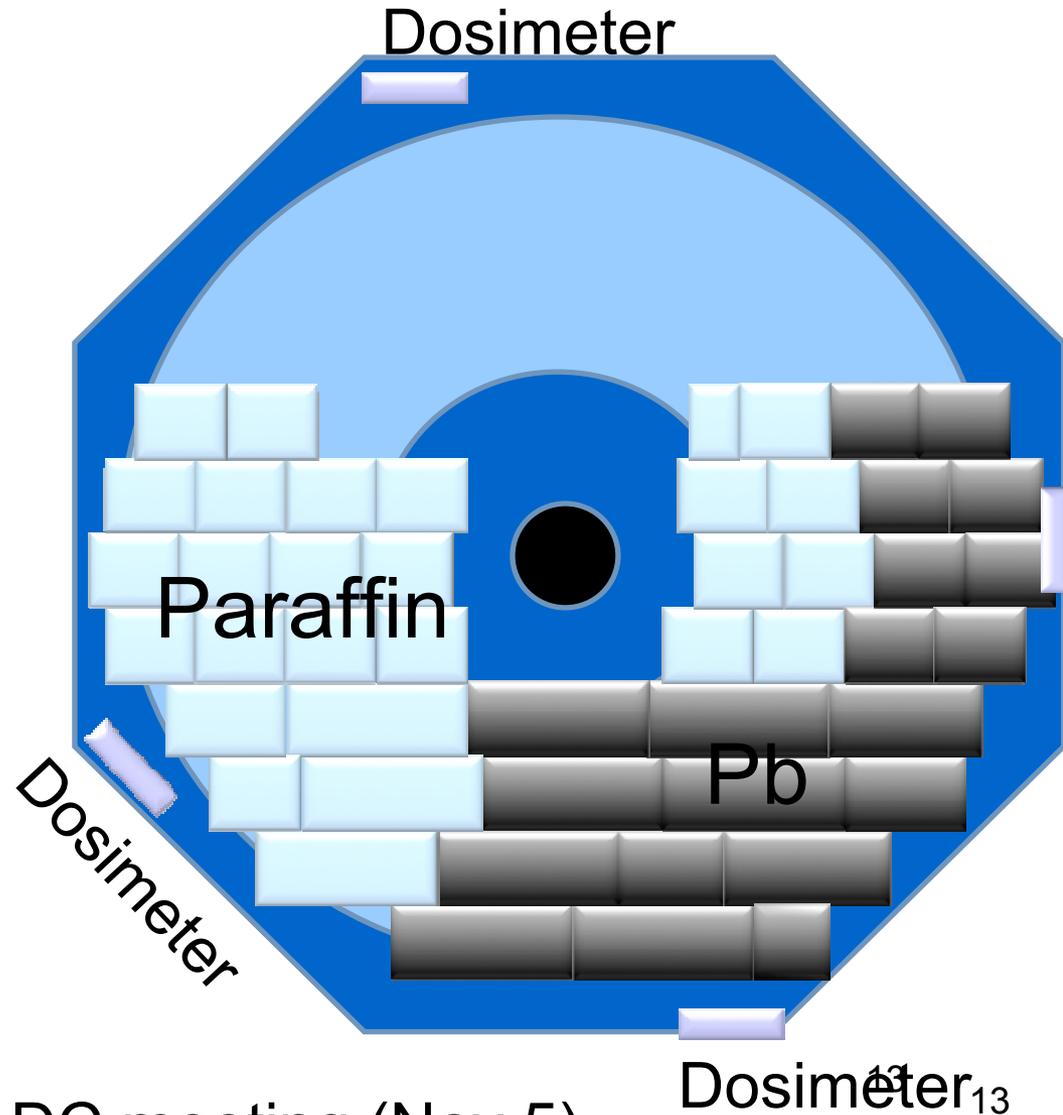
# ADTX Installation Check List (St-1)

- Miscabling
  - Visible inspection ✓ ✓
  - Gap-by-Gap calibration logic/mask check ✓
  - ADTX Performance ✓ ✓
  - Dead (single) channel check ✓
  - Board ID check ✓ ✓
  - Slow control (threshold) ✓ ✓
  - PROM erase and Download ✓
  - Efficiency ✓ ✓
  - Fake hit ✓ ✓
  - Timing ✓ ✓
- MuTR FEE Performance
  - Noise w/o HV ✓ ✓
  - HV (upto 1500V w/ Ar-CO<sub>2</sub> gas) ✓
  - Minor Tweak of Cable to improve noise ✓
  - Noise w/ HV on ✓
  - Gap-by-Gap calibration → found one miscabling in St-1, Oct.5 ✓
  - Gain → stereo ~ 1, non-stereo~0.9 ✓ ✓
- LV
  - Miscabling ✓
  - LV measurement at Chassis with all other power on ✓

# ADTX Installation Check List (St-2&3)

- Miscabling
  - Visible inspection ✓ ✓
  - Gap-by-Gap calibration logic/mask check ✓
  - ADTX Performance ✓ ✓
  - Dead (single) channel check ✓
  - Board ID check ✓
  - Slow control (threshold=10mV,20mV) ✓ ✓
  - PROM erase and Download ✓
  - Efficiency ✓ ✓
  - Fake hit ✓ ✓
  - Timing ✓ ✓
- MuTR FEE Performance
  - Noise w/o HV ✓ ✓
  - HV (upto 1500V w/ Ar-CO<sub>2</sub> gas) ✓
  - Minor Tweak of Cable to improve noise ✓ ✓
  - Noise w/ HV on ✓
  - Gap-by-Gap calibration ✓
  - Gain → stereo ~ 1, non-stereo~0.9 ✓ ✓
- LV
  - Miscabling ✓
  - LV measurement at Chassis with all other power on ✓

# Possible Shield in Piston Hole



To be discussed next DC meeting (Nov.5)

# Cable Tray Install

West Octant-2  
once MMS is moved to  
run position



Install Tray after MMS to Run Position

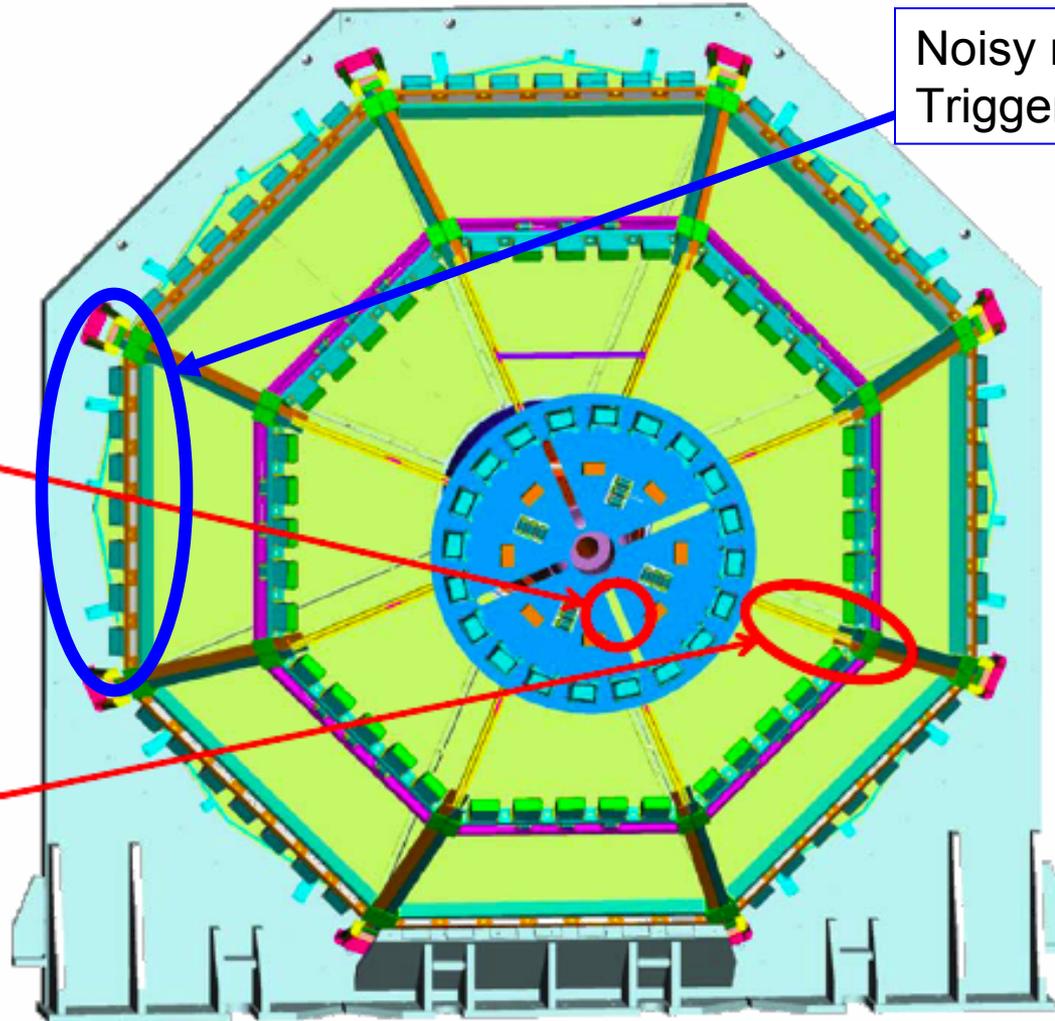
# North Arm Activities

North Arm  
Disconnected HV?

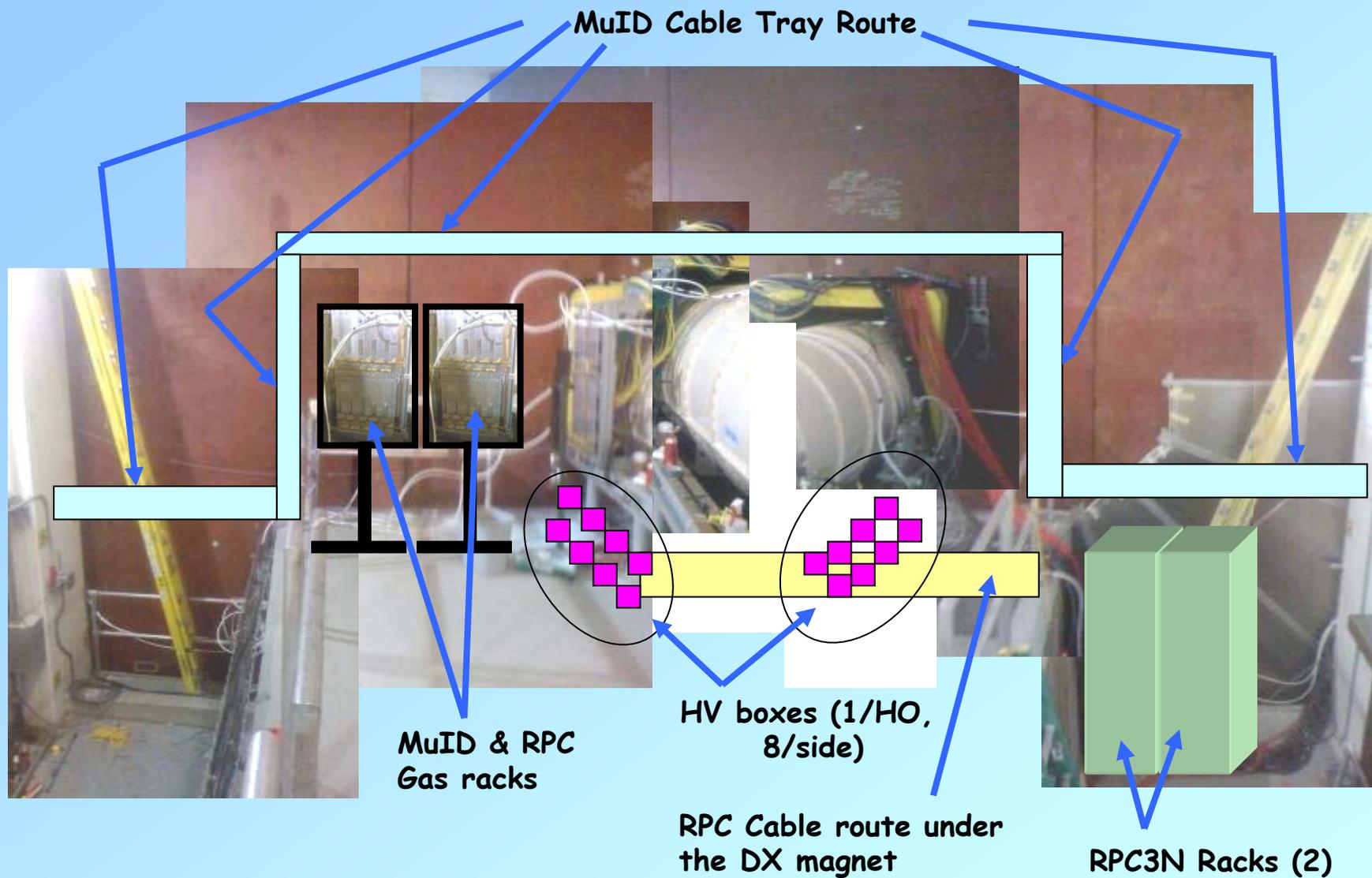
Noisy new  
Trigger electronics

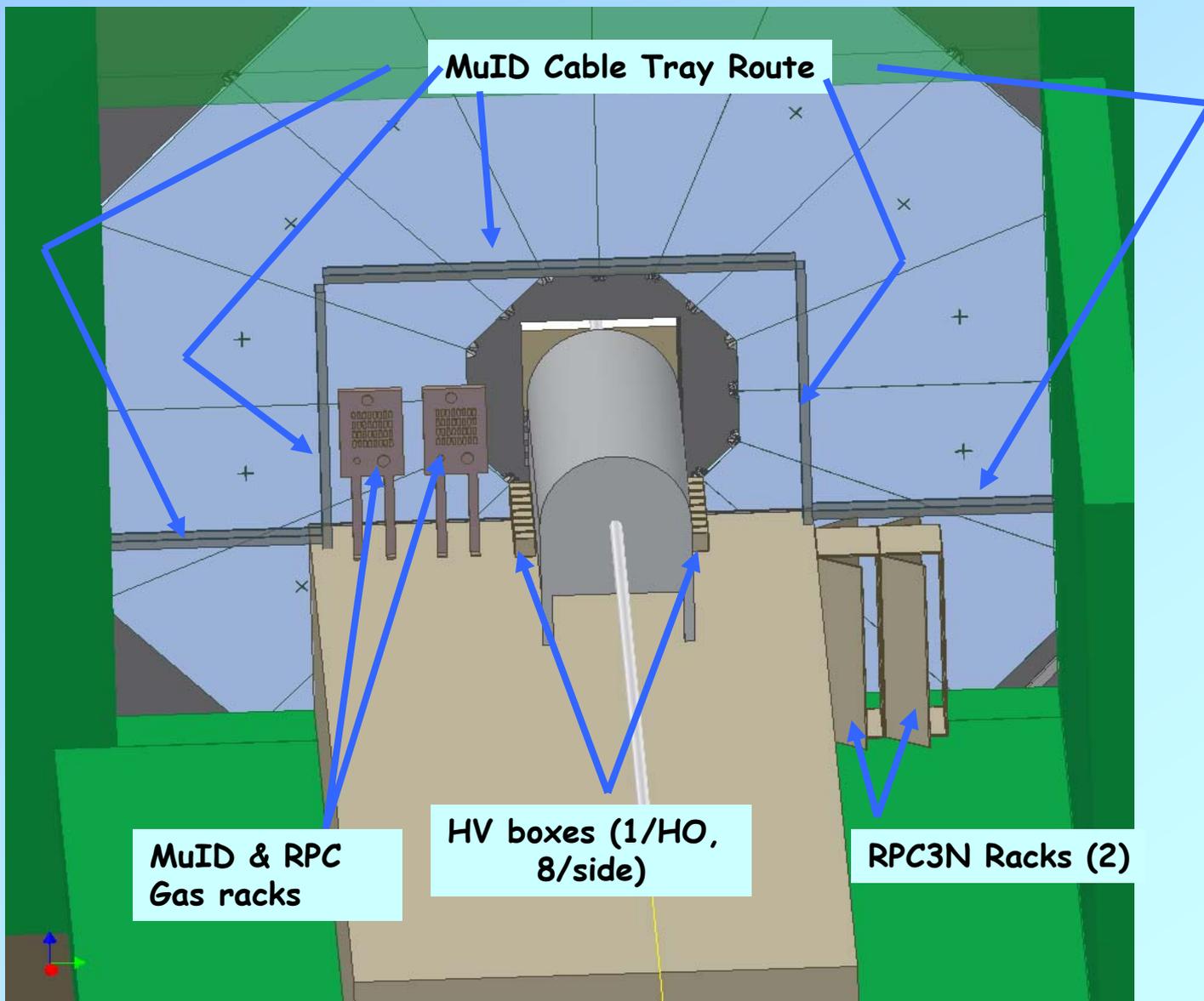
Sta-1 Oct-6 Gap-  
2 Card-6

Sta-3 Oct-6  
Gap-1,2 Card-5



Need to access Station 1 (with ladder) for 1/2 day tomorrow  
or 1st week of November







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10/22/2009



10/22/2009



*Slide From RPC3N  
Installation Plan*

Some potential problems  
from the top of gap 5

PHENIX  
PORT  
NOON



IR Crane support directly  
above beam centerline ~ 4  
in above gap 5 steel



IR Crane supports ~7 ft east  
and west of centerline gusset  
with hole may interfere with  
installation of half-octants

Gap 5 steel is 3 pcs  
which are not in  
plane ~ $\frac{1}{2}$  inch at top  
may vary along entire  
length



H07W



10/22/2009



PHENIX

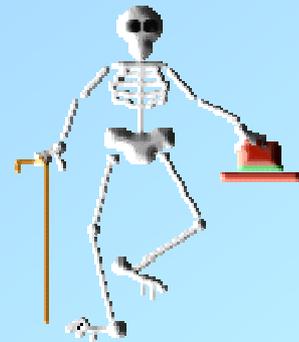




About 3/8" high. To be adjusted?

900N 1707CS 7 ACPHZNCH 1

PHENIX



## Continuing Tasks currently underway (elec.)

### Task

Start Date    End Date

Install LV Dist modules in MuTrigger S.	In Progress	12/1
Remove temporary MegaPAC in sRPC1 rack and install new full MegaPAC and finish controls for it	7/20	12/1
VTX/FVTX LV Dist system evaluation (VTX Done)	In Progress	12/1
Prep for production of up to 39 boards in 4 crates (VTX/FVTX)	In Progress	12/1
VTX/FVTX cooling system interlock design	7/20	12/1
Evaluate possible design for 4x1 GL1 L1 triggers	In Progress	12/1
Rack room re-organization	In Progress	12/1
AH Crane 110 switch for lockout	In Progress	12/1
Test/replace rack transient suppression	7/20	12/1
Cordless phones in tunnel	7/20	12/1
Individual relays on all HV supplies	7/20	12/1
Replacement OPC server computers	In Progress	12/1
Replace old PCI type RS485 interface boards with USB-Fiber and Fiber-RS485 system	In Progress	12/1

900N-170P0R1-SCAPUSLACUACHZICM1



## More Continuing Tasks currently underway (mechanical)

PHENIX  
 MECHANICAL  
 SUPPORT  
 NOON

Task	Start Date	End Date
Design supports for Beampipe upgrade	In Progress	11/30
Fan Tray replacements (as time permits)	In Progress	11/30
Design support for FOCal	In Progress	11/30
Design support for FVTX	In Progress	11/30
Design & Fabrication support for VTX	In Progress	11/30

# Continuing Tasks currently underway (gas)

TECHNICAL SUPPORT NOON

## Task

## Start Date End Date

Get AC's installed in mixing house



7/20

12/1

Investigate shed/larger bottles for R134A

7/20

12/1

Replace damaged compressed air flowmeter

7/20

12/1

Add check valves to some supply lines (as needed)

7/20

12/1

Design and build heat exchanger for HBD system

In Progress

12/1

Replace/ regenerate HBD purifier and driers (late Fall)

In Progress

10/9

Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)

7/20

12/1

Replace/upgrade gas house PC's

In Progress

12/1

Run gas lines to North tunnel

7/20

12/1

Design and build gas humidifier

In Progress

12/1

Layout and build North distribution panel

In Progress

12/1



# October Schedule

## Task

Start Date End Date

PHENIX  
 TUNNEL  
 CLOSURE  
 PROJECT  
 SCHEDULE  
 REPORT  
 NOON

Task	Start Date	End Date
Remove Station 1 North scaffolding	10/26	10/28
Remove MMS Sta 2/3 scaffolding	10/26	10/30
Reinstall MMS lampshades	11/2	11/6
Install new PHENIX north tunnel thermal/vapor barrier replacing crystal palace	10/31	11/15
Commission RPC3 N racks and detectors	10/29	11/30
Install new Gas Pads for Ar Dewar & Empty bottle storage	In Progress	11/30
Final leak test new Ar dewar/vaporizer and Closeout	11/15	11/30
Install Empties racks on gas pad	11/15	11/30

## Expected IR Configuration During Shutdown '09

- Now-11/3 MMS south, CM in run position, EC in AH  
WC in west position (against wall), scaffolding  
in station 1 and station 2/3 south
- 11/3-11/10 MMS, CM & WC positions TBD, EC in AH
- 11/10-12/1 MMS & CM in run position, EC and WC can be  
moved east west ~3 ft

These dates are approximate and subject to change

# November Schedule



## Task

Start Date End Date

900N  
120P  
100P  
80P  
60P  
40P  
20P  
10P  
10A  
12A  
2P  
4P  
6P  
8P  
10P  
12P  
2P  
4P  
6P  
8P  
10P  
12P

- Install heaters and thermostat(s) for RPC3N thermal control 11/2 11/6
- Reinstall PHENIX North tunnel shielding (3 days) 11/2 11/6
- Replace EC water hoses below EC and test 11/2 11/7
- Cooldown for Run 10 Starts 11/7 11/7
- Move MuID Collars to IR 11/7 11/7
- Disconnect electric & Fiber in EC 11/2 11/7
- Remove ladder & dumb waiter from EC & Fold up EC platforms in AH (1 day) 11/9 11/10
- **Veterans Day Holiday - no work** 11/11 11/11
- Remove IR Floor plates and move 12 ton cart to AH 11/12 11/12
- Move EC to IR 11/12 11/13
- Reconnect electric and fiber to EC 11/16 11/20
- Reinstall ladder & dumb waiter on EC & Fold down EC platforms in IR (1 day) 11/16 11/20
- Pink sheets, white sheets, blue sheets 11/16 12/1
- Move MMS north, Install MuID Collars 11/23 11/25
- Assemble shield wall base and wall in AH 11/23 11/30
- Thanksgiving Holiday - no work 11/26 11/27
- Roll in shield wall 11/30 11/30
- Start Run 10, All shutdown activities completed 12/1 12/1



# 2009 Building Maintenance Issues

PHENIX  
 900N  
 170P  
 1  
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- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- Improved Rack Room AC performance: New AC on order
- General maintenance for Trailer Offices and Gas Mixing House stairs, ramps and siding, gutters, etc. (cleaning and repairing worn/rotted wood): Carter has placed work orders
- Icy conditions at mixing house north stairs: Need new Mixing House Gutter
- Purchase and install 2 AC's in Phenix Gas Mixing House  
Suggested model : McMaster part number: 1817K89 (19.5 K btu)



# Safety, Security, etc.

## 1. Human Performance Tool: "Questioning Attitude"

A questioning attitude fosters thought about safety before action is taken and helps individuals maintain an accurate understanding of work conditions at any given time. This tool alerts people to potential hazards, warning signs, critical activities (steps), error-likely situations, and other uncertainties in the work environment or the work plan. It also encourages the user to stop and resolve those hazards, warnings, error-likely situations, or uncertainties before proceeding with the job. It promotes follow-up when doubt arises with the discovery of facts, not assumptions, to reveal more knowledge about the situation and eliminate the doubt. People, in general, are reluctant to fear the worst, and a healthy questioning attitude will overcome the temptation to rationalize away "gut feelings" that something is not right.

A questioning attitude promotes a preference for facts over assumptions and opinion. Questions such as "What if . . .?" or "Why is this acceptable?" help improve recognition of improper assumptions and possible mistakes. The structured approach described below promotes the discovery of facts. Facts depend on the reliability of the information source and the accuracy of that information. Without sufficient facts, the performer should stop the activity to address an unpredictable work situation that could lead to a serious mistake or significant event.

## 2. Contractor Stand Down

## 3. ODH0 in tunnel starting next week

4. Annual PHENIX safety Review: to be held Nov. 6, 2:00 PM  
Don, Paul, Rob and Steve to prepare presentations for  
mechanical, electrical, gas system and safety systems.

(Note: does not include RPC factory. RPC factory annual review is due  
in Jan.)

5. PHENIX Procedure Review Current Status:

147 Procedures Identified

77 Made Inactive (not currently in use, will require revision to re-  
activate if and when necessary, available for reference purposes)

12 CAD procedures relevant to PHENIX, all are current and up-to-  
date

42 PHENIX approved procedures.  
26 are due for 3 year reviews  
16 are current and up-to-date

16 Proposed/Draft Procedures (never previously formalized)



# Where To Find PHENIX Engineering Info



*Happy Halloween*

*Don't Eat Too Much Candy !*



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Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

[http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL\\_SSint-page.htm](http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm)

