

# PHENIX WEEKLY PLANNING



7/23/2009

Don Lynch

# This Week 7/20 - 7/24

TECHNICAL SUPPORT NOON

## Task

Start Date End Date

Task	Start Date	End Date
• Disassemble and stow Wall & Base	Done	Done
• Finalize gap 5 N cable and pipe reorganization plan	Done	Done
• Load Test new chilled water system	Done	Done
• Order burn-in test cover and AC control	Done	Done
• Move MMS South/North (for EC move)	Done	Done
• Disconnect EC and Move to AH	Done	Done
• Test base RPC3 N survey fixture	Done	Done
• Fabricate RPC3 N base, pitch support, lifting fixtures and $\frac{1}{2}$ octant 7&8 vertical support	Done	Done
• Assemble Dummy $\frac{1}{2}$ octant and test with tilt table and Burn-in test stand field fit	Done	Done
• Install IR floor plates, 12 ton cart & manlift	Done	Done
• Receive complete RPC3 N base, pitch support, lifting fixtures & $\frac{1}{2}$ octant 7&8 vertical support	in progress	7/24
• Fan Tray replacement evaluation and priority plan	in progress	7/24
• Presurvey $\frac{1}{2}$ octants at RPC Factory	in progress	7/24
• Receive RPC3 N lifting fixture parts at factory	in progress	7/29
• Assemble HV, experimental gas and N2 gas distribution and install tent	in progress	8/1
• Field Fit $\frac{1}{2}$ octant retaining arm/clamps design to fit	in progress	8/1
• Fabricate Base Locking/Installation fixture	in progress	8/14
• Fabricate RPC3 adjustable $\frac{1}{2}$ octant cradle	in progress	8/14



# Starting Next Week 7/20 - 7/24

## Task

Start Date End Date

- ID/label gap 5 N cables & pipes and move out of gap 5 7/27 7/30
- Install MuTrigger Cables behind MMS 7/28 7/28
- Troubleshoot MUTrigger FEE's in MMN 7/27 8/31
- Troubleshoot MUTr decaps in MMN 7/27 8/31
- **Move MMS North/South** **7/28 7/28**
- Install Station 1 Scaffolding (3 days) 7/28 7/30
- Inspect Station 1 Scaffolding (1/2 day) 7/30 7/31
- Install MuTrigger Station 1 S FEE cable management 7/30 7/31



PHENIX

## Continuing Tasks currently underway

Task	Start Date	End Date
• Install MuTrigger FEE Sta 2/3 cable Management and cable runs behind MMS	in progress	7/28
• Move PHENIX-North tunnel shielding, remove PHENIX-North vapor barrier and crystal palace, repair/replace area lighting	in progress	7/31
• Move MuID piping, piping supports out of Gap 5 to temporary store area	in progress	7/31
• Move MuID cables and cable tray out of Gap 5 to temporary store area	in progress	7/31
• cleaning and testing of MuTracker HV splitter boxes	in progress	7/31
• Order & receive parts for gap5 N cable management	in progress	7/31
• Evaluate Gap 5 grout at Factory	in progress	7/31
• Receive and test MuTrigger FEE's	in progress	7/31
• Receive MuTrigger FEE's cable and connector prep and bundle for installation	in progress	7/31
• Work permits for RPC3, MuTrigger/MuTr N&S	in progress	7/31
• Order MuID cable management components	in progress	8/1
• PC1 East repair fixture: order raw materials, order off-the-shelf components & hardware, receive and inspect components	in progress	8/1
• Reconnect EC utilities for shutdown mode	in progress	8/7



## Continuing Tasks currently underway (cont'd)

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Task	Start Date	End Date
• Design concept for Base locking/Installation fixture for RPC3N	in progress	8/14
• Design RPC3 adjustable $\frac{1}{2}$ octant cradle	in progress	8/14
• Prep RPC3 N racks for installation	in progress	8/14
• Simulated RPC installation at RPC Factory (practice/tests) commission all installation components base, locking/install, survey, cradle	in progress	8/31
• Plan and install 2 new PHENIX gas pad expansion pads	in progress	9/4
• Spec, purchase, install and test instrumentation and monitoring, cables, etc.for rack room AC3 and new electronics water chiller	in progress	10/31
• Spec, purchase, install and test instrumentation and monitoring, cables, etc.for non-PHENIX fire alarm status panel	in progress	10/31
• Spec, purchase, install and test power wiring for new DCM racks	in progress	10/31
• Start Design supports for Beampipe upgrade	in progress	11/30
• Design & Fabrication support for VTX	in progress	11/30
• Design support for FVTX	in progress	11/30
• Design support for FOCal	in progress	11/30
• Fan Tray replacements (as time permits)	in progress	11/30

## Continuing Tasks currently underway (cont'd)

PHENIX  
 TUNNEL  
 CONTROL  
 SYSTEMS  
 GROUP

Task	Start Date	End Date
• Test/replace rack transient suppression	7/20	12/1
• UPS feeds for GTM and GL1 racks	7/20	12/1
• Cordless phones in tunnel	7/20	12/1
• Individual relays on all HV supplies	7/20	12/1
• SF6 alarm to MCR?	7/20	12/1
• More volts to EMCAL FEM's?	7/20	12/1
• Revisit LV systemization/standardization of controls, etc.	7/20	12/1
• Correct wiring of the DCM crates enables	7/20	12/1
• Replace ECB1&2 (ADAM5000s) with a single new ADAM5000E	7/20	12/1
• Replacement OPC server computers	7/20	12/1
• Replace old PCI type RS485 interface boards with USB-Fiber and Fiber-RS485 system	7/20	12/1
• Add single-button ON/OFF controls to some LV GUIs	7/20	12/1
• Determine optimal baud rate for EC North RMC	7/20	12/1
• Remove the temporary FlatPAC in SMT4 and install two new MegaPACs	7/20	12/1

## Continuing Tasks currently underway (cont'd)

Task	Start Date	End Date
• Install LV Dist modules in MuTrigger S.	7/20	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	7/20	12/1
• Prep for production of up to 39 boards in 4 crates (VTX/FVTX)	7/20	12/1
• VTX/FVTX cooling system interlock design	7/20	12/1
• Evaluate possible design for 4x1 GL1 L1 triggers	7/20	12/1
• Test direct ethernet implementaion on Maszi's new HV control interface board	7/20	12/1
• Get air conditioners 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	7/20	12/1
• Re-test HBD supply line for leaks (pad to mixing house)	7/20	12/1
• Replace/ regenerate HBD purifier and driers (late Fall)	7/20	12/1
• Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)	7/20	12/1
• Replace pad chamber flowmeters in IR, re-label	7/20	12/1
• Investigate Mutr station 2 gas loss. Confirm labeling	7/20	12/1
• Replace/upgrade gas house PC's	7/20	12/1
• Move MuID distribution panel, for future RPC access	7/20	12/1
• Re-route several gas lines in the RPC3 south gap	7/20	12/1

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## Continuing Tasks currently underway (cont'd)

Task	Start Date	End Date
• Move MuID distribution in North Tunnel	7/20	12/1
• Re-route lines in RPC3 gap.	7/20	12/1
• Run gas lines to North tunnel	7/20	12/1
• Design and build gas humidifier	7/20	12/1
• Layout and build North distribution panel	7/20	12/1
• Run Signal/control lines to north tunnel (line goes to IR panel first)	7/20	12/1
• Build RPC gas rack for mixing house	7/20	12/1
• Install electronic and Gas PC in gas house	7/20	12/1

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7/23/2009



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# MuTRIG-FEE Install

RIKEN/RBRC

Itaru Nakagawa

# Cable Installation Next Week

All cables are ready for installation



- LV Bundles x 8
- Fiber bundles x 8



Bottom octants -> Platform



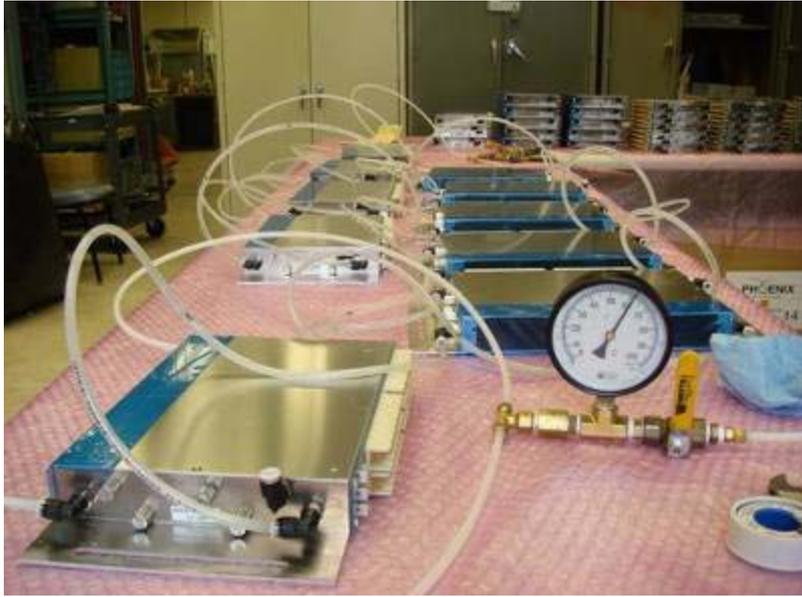
- Trunk Cables x 10



Rack Room -> Platform

Man power: Myself + 4~5 students  
(all confined space, fall protection trained)

# Other Schedules



- All ADTX/Chassis/Cable productions are completed.
- First 80(out of 180) ADTX has been shipped.
- Next 100 boards will be shipped beg. of Aug.
- Chassis will be delivered today
- Start water leak test next week after cable installation (John T.'s help)



## Expected IR Configuration During Shutdown '09

- 7/6 - 7/17 Run configuration EC and WC can be moved east/west ~3 ft
- 7/17-7/22 MMS moved south, CM in run position EC & WC can be moved east/west ~3 ft
- 7/22-7/28 MMS north, Run configuration WC can be moved east/west ~3 ft EC in AH
- 7/28-10/1 MMS south, CM in run position, EC in AH WC in west position (against wall), scaffolding in station 1 and station 2/3 south
- 9/25-11/10 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

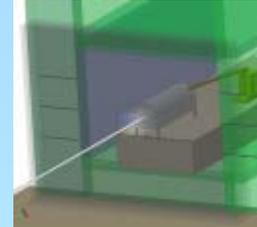
# August Schedule

## Task

## Start Date End Date

PHENIX 900N

Task	Start Date	End Date
• Survey tapped holes on MuID5 steel and survey east and west RPC3 N support bases (3 days)	8/3	8/14
• Drill and tap MuID gap 5 steel top and north	8/3	8/14
• Install RPC3 N support base & grout (4 days)	8/3	8/14
• Install Station 3 N pitch control (unistrut rails) on pedestal and east and west gap 5 north walls and attach to support bases (tall column)	8/3	8/14
• Install MMS station 2/3 scaffolding	8/3	8/14
• Install Station 1 FEE's & Electronics and connect cables	8/3	8/28
• MuTr decapacitations & MuTr FEE trouble-Shooting in MMS Sta 1&3	8/3	8/28
• MuTr Rack 2 troubleshooting	8/3	8/28
• Vendor install Ar dewar & vaporizer	8/3	8/28
• Install rails and fences on gas pad	8/3	8/28
• DCM rack electric prep	8/3	8/30
• MuTr HV and FEE test and evaluation as MuTrigger FEE's & RPC's are installed	8/3	11/30
• Set up PHENIX "stage" for Summer Sunday Tour	8/5	8/7
• Tear down and remove PHENIX "stage" for Summer Sunday Tour	8/10	8/11



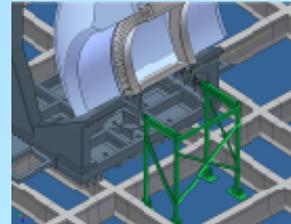


# September Schedule

## Task

## Start Date End Date

- Close MMN Hatch and closeout WP
- Rack room re-organization
- CM Power upgrade (as toime permits)
- Labor Day Holiday - no work
- Remove failed PC1 east module
- Install spare PC1 east module
- Install 2 RPC3 N racks (1/2 day)
- Test PC1 spare and verify operation
- Install MuTrigger FEE station 2/3 air & water plumbing and test
- Move DC on EC back to normal position
- Reconnect cables and piping on DC and PC1 East
- Remove station 1 south scaffolding
- Install rack components in RPC3 N racks
- Final verification tests on PC1 east repair



Start Date	End Date
9/1	9/1
9/1	11/30
9/1	11/30
9/7	9/7
9/10	9/14
9/10	9/14
9/8	9/18
9/14	9/17
9/14	10/9
9/18	9/18
9/21	9/25
9/21	9/25
9/21	9/30
9/28	9/30

PHENIX PROJECT

# October Schedule

## Task

## Start Date

## End Date

- Disassemble and store PC1 east repair fixture 10/1 10/2
- Attach cables to RPC3 N racks and to Detector  $\frac{1}{2}$  octants 10/1 10/9
- Install new PHENIX north tunnel thermal/vapor barrier replacing crystal palace (1 week) 10/1 10/30
- DCM rack supply & Return plumbing 10/5 10/16
- Remove MMS Sta 2/3 scaffolding 10/12 10/23
- Commission RPC3 N racks and detectors 10/12 10/30
- DCM rack internal plumbing 10/19 10/30
- Reinstall MMS lampshades (2 days) 10/26 10/30



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# November Schedule

**Task Start Date End Date**

900N 1200P 1300P 1400P 1500P 1600P 1700P 1800P 1900P 2000P 2100P 2200P 2300P

- Install heaters and thermostat(s) for RPC3N thermal control 11/2 11/6
- Reinstall PHENIX North tunnel shielding (3 days) 11/2 11/6
- 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

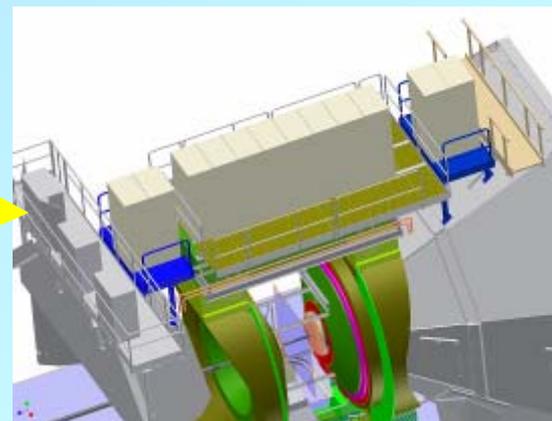


Other potential work this shutdown:

1. Remove the RPC prototype absorber



2. Prep Bridge for future upgrades



# EC move lessons learned

900N 120P 02S 1A 01C 12H 01Z 12E 12M



Need to change location of hose connection: too close to electrical box



Some hoses getting old: replace before they leak



## New Chiller Load test lessons learned

MMS eyebrow racks weren't on ECW line. At first seemed to be improperly piped, later Paul discovered improper valve positions. We need a flow diagram to help future troubleshooting. CAD techs need to be aware of proper valving. Pipe hose and valve labelling needs to be assessed/improved.

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# 2009 Building Maintenance Issues

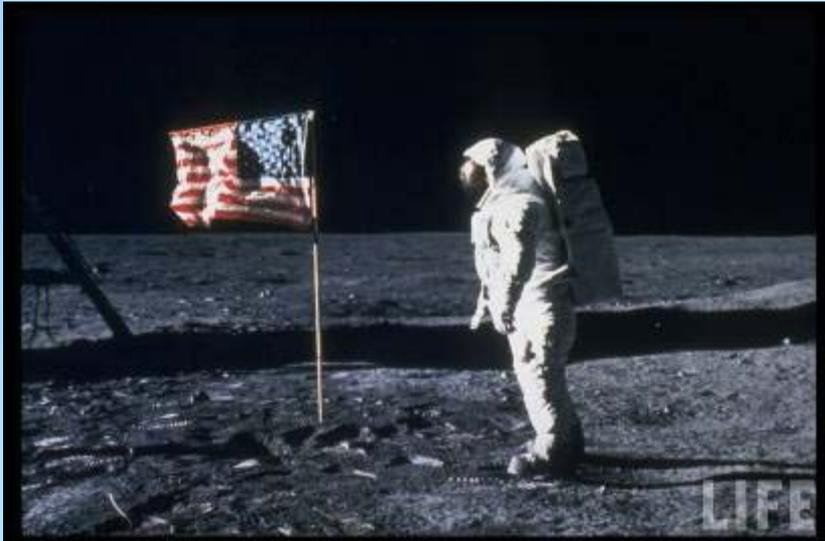
- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall.
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- Improved Rack Room AC performance (This item has been addressed time and again but unsatisfactorily. Currently the AC fails periodically and is repaired only to fail again. On-condition maintenance is not adequate...an engineered solution is needed.)
- Icy conditions at mixing house north stairs
- Mixing House loose board ?



# Safety, Security, etc.

1. Additional observations from DOE safety personnel on our Shutdown Startup Procedures:  
(a) Minor inaccuracies in procedures compared to how work is done. (b) Procedures not reviewed on regular basis [5 years]. Meeting next Monday to discuss our plans to update procedures.
2. General practices: (a) No shorts in IR and AH, no exceptions. (b) hardhats when crane in use and when working below others working above. (c) closed shoes in AH and IR, no exceptions. Technicians (PHENIX, CAD, Trades) when performing work in AH and IR are in charge. Subsystem experts, scientists, etc. must follow their directions. (c) Film badges required in north and south tunnels, no exceptions. (d) Two man rule applies in IR, AH, tunnel north and south and RPC factory, no exceptions.
3. Work planning and control practices assessment teams still roaming the lab. If asked answer their questions honestly. We try to comply with all safety regulations, we have planning meetings daily and weekly. We plan at PHENIX and with CAD. We have enhanced work permits where appropriate. We keep our training, certifications and calibrations up to date. We have procedures to cover complex tasks, both recurring and one time tasks. We review the procedures prior to the work and we feedback problems and anomalies to make our work safer, more efficient and more productive. Weekly work planning notes are posted on the web as well as work permits and current procedures.
3. Remember to lock up at the end of each day. Techs will lock up before they leave, but others who work late must make sure they lock the doors behind them.
4. Read, understand and sign (original) work permits for tasks you are working on. PDF copies of all PHENIX 2009 shutdown work permits and referenced PHENIX controlled procedures are/will be available on the PHENIX engineering web site.

# Where To Find PHENIX Engineering Info



40 years ago this week

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)

