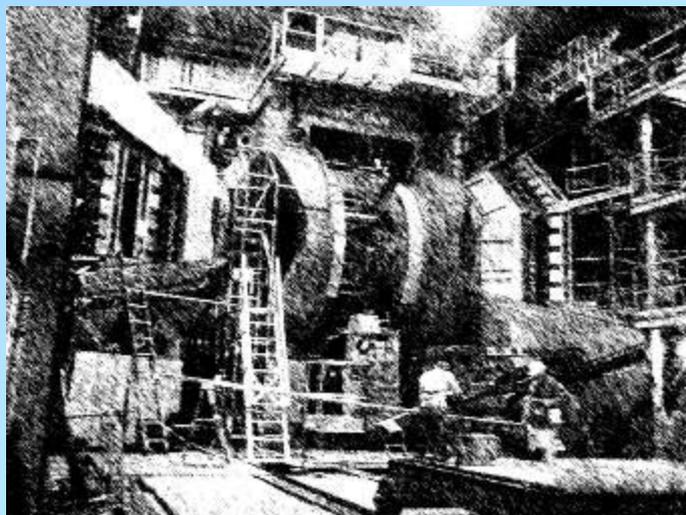


PHENIX WEEKLY PLANNING

TECHNICAL SUPPORT NO-0



3/4/2010
Don Lynch

Ongoing Tasks for Run 10

Task

Start Date

End Date

Install rack components in RPC3 N racks

in progress

6/1/2010

Attach cables to RPC3 N racks and to Detector $\frac{1}{2}$ octants

in progress

6/1/2010

Install blower for RPC3N thermal control

Done

Done

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

In Progress

?

AH Crane 110 switch for lockout

In Progress

6/30/09

PHENIX Startup Checklist Status

Item

Responsibility

Status

Item 1: ESRC relevant items completed

Wood Stairs

Phillips

Post Start

Update Work procedures

Cirnigliaro, Lynch

Almost Done

Item 4: HBD Mock Up

Lynch

After Run 10

Item 11: Fire Pull Box

Phillips

Post Start

Item 12: Dumb Waiter

Lynch

Almost Almost
Almost there

3/4/2010

TECHNICAL SUPPORT NO-O

This Week

No scheduled maintenance access.

Short access to fix RICH. Successful ?

New Be beampipe arrived. CAD to inspect test and ship to CERN for NEG

New beampipe review meeting went well. CAD and PHENIX division of tasks agreed to.

VTX meeting on Friday. Trying to resolve cooling issues. Thermal parameters not adequately addressed. Will require PHENIX engineering of cooling distribution in addition to supply.

Rest of CS work for RPC3S to CS.

Beampipe support design passed on to Mickey for analysis

T
E
C
H
N
I
C
A
L
M
E
A
S
U
R
E
M
E
N
T
S

Next Week:

- Next Scheduled Maintenance Wed. 3/10
- Run 10 tech support as necessary
- 2010 summer shutdown prep continues
- Future upgrade support as necessary
- $\frac{1}{2}$ octant pre-survey
- VTX assembly fixtures to be re-designed
- VTX support structure next

TECHNICAL SUPPORT NO-0

2010 Tasks

Start Date End Date

	Start Date	End Date
Run 10	In progress	6/1
VTX Installation Plan (Final)	3/1	5/31
RPC3S Installation Plan (Final)	3/1	5/31
Receive New Beampipe	Received	Done
Design Beam pipe supports	Done	Done
Update RPC3 N design for RPC3 S	Done	Done
Design support structure, alignment scheme for VTX	In progress	3/31
Specify and procure electronics racks and support equipment for VTX	3/1	5/31
Fabricate beam pipe supports	3/5	5/1
Beampipe NEG coating (CERN)	3/15	5/1
Fabricate/procure parts for RPC3 S installation	In progress	5/1
Fabricate/procure parts for VTX installation	3/15	6/1
End of run 10	6/1	6/1
Rnd of Run Party	~6/18	~6/18
Prep IR for shutdown	6/1	7/1
Complete unfinished business for MuTrgr FEE & RPC3 North	6/1	8/1
Install Beam pipe	7/1	10/1
Install VTX	8/1	10/1
Install RPC3 South	6/1	10/1
2010 Shutdown Other Tasks	6/1	11/1

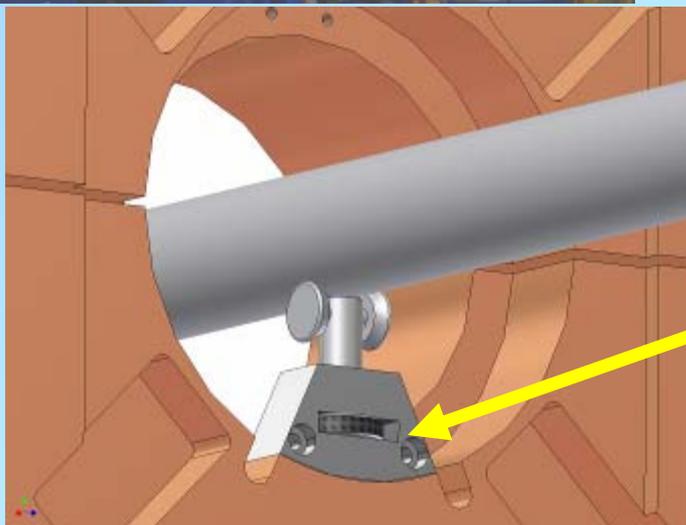
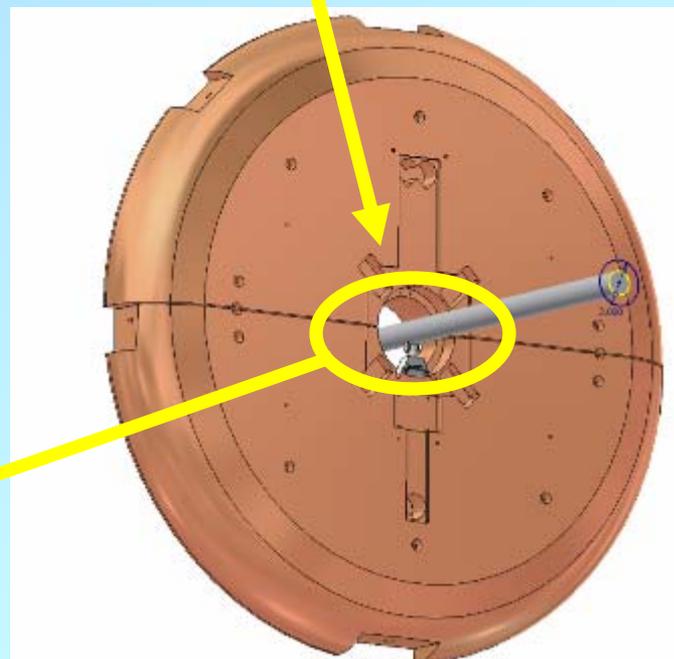
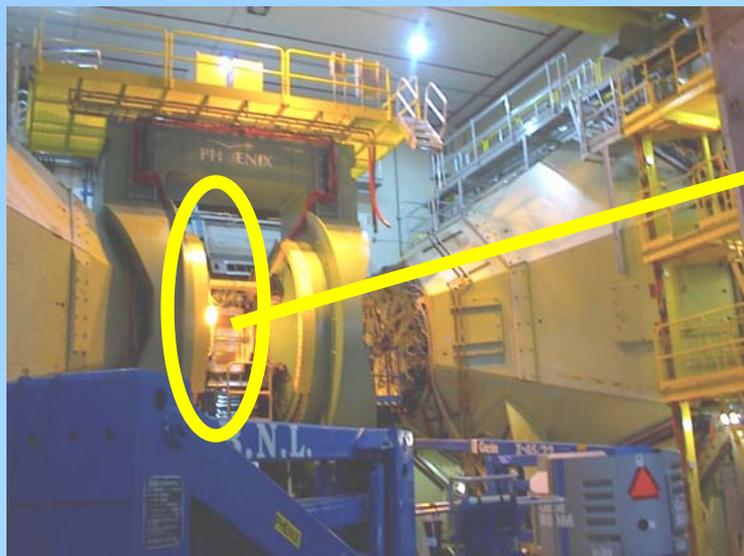
TECHNICAL SUPPORT 2010

New Beampipe Pre-Shutdown Prep

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Design central beam pipe and new transition sections	Done	
Order beampipe	Done	Brush Wellman
Order new design transitions	Done	CAD
Order replacements for existing transitions and spools	Done	CS
Conceptual and mechanical design beampipe supports	Done	Done
Beampipe fabrication	Done	Done
Receive bp and all beampipe sections	3/15	CAD
Beampipe Installation Review (Preliminary)	Done	Done
Bp and sections acceptance tests and inspection	3/15/2010	
Send beampipe to CERN for NEG Coating	3/15/2010	
Fabricate beampipe supports	5/31/2010	
Receive bp back at BNL	5/31/2010	
Choreograph removal of old beampipe and installation of new (final)	6/1/2010	
Final acceptance and inspection bp and sections	6/15/2010	
Test and inspect beampipe supports	6/15/2010	
Beampipe Installation Review (Final)	6/15/2010	

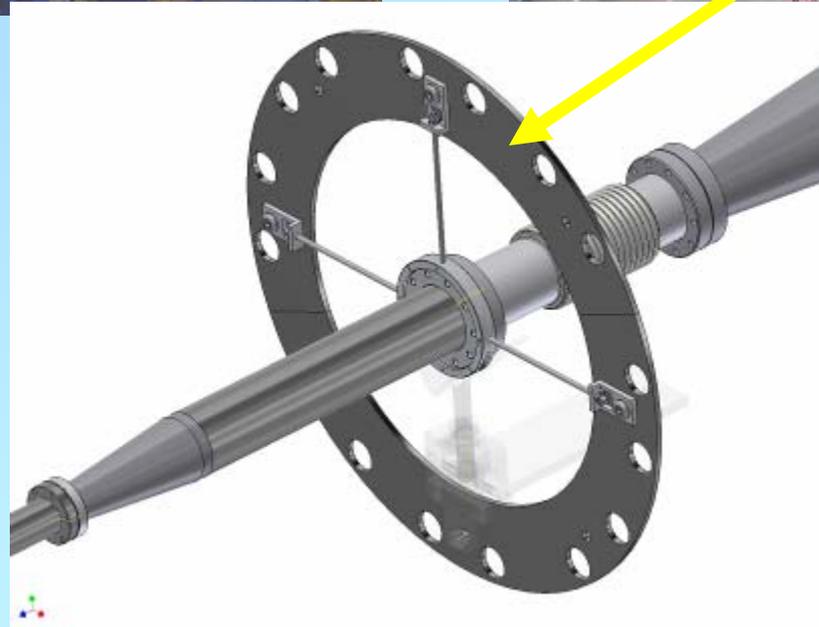
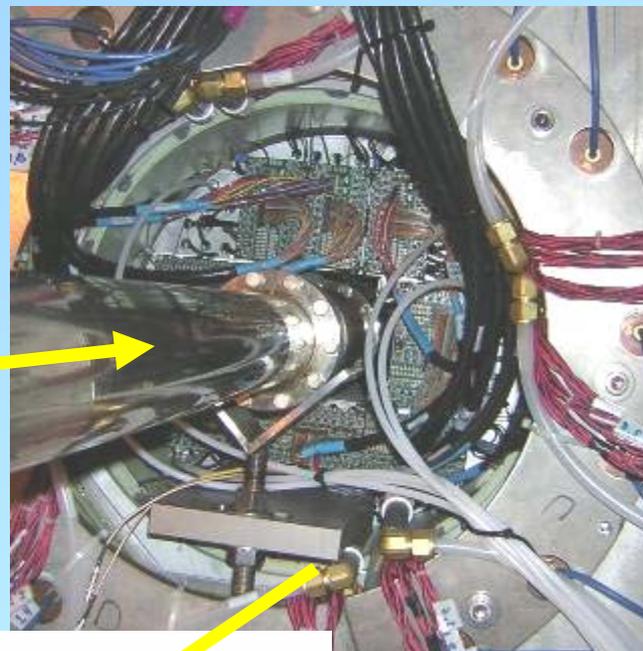
CM central BP supports (2 req'd)



TECHNICAL SUPPORT NO-0

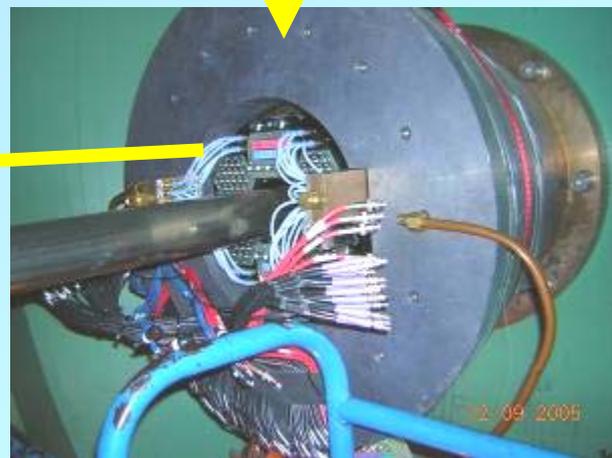
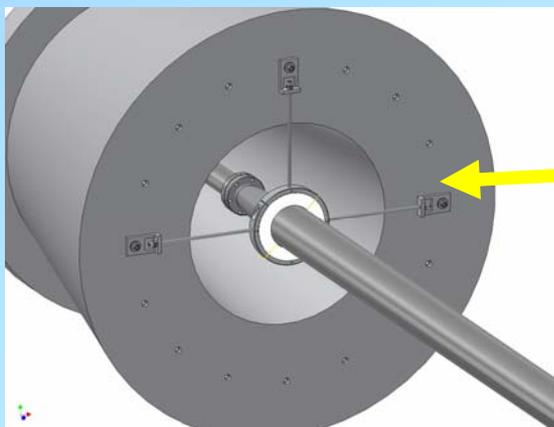
North MPC/MuTr Station 1 support

TECHNICAL SUPPORT NO-0

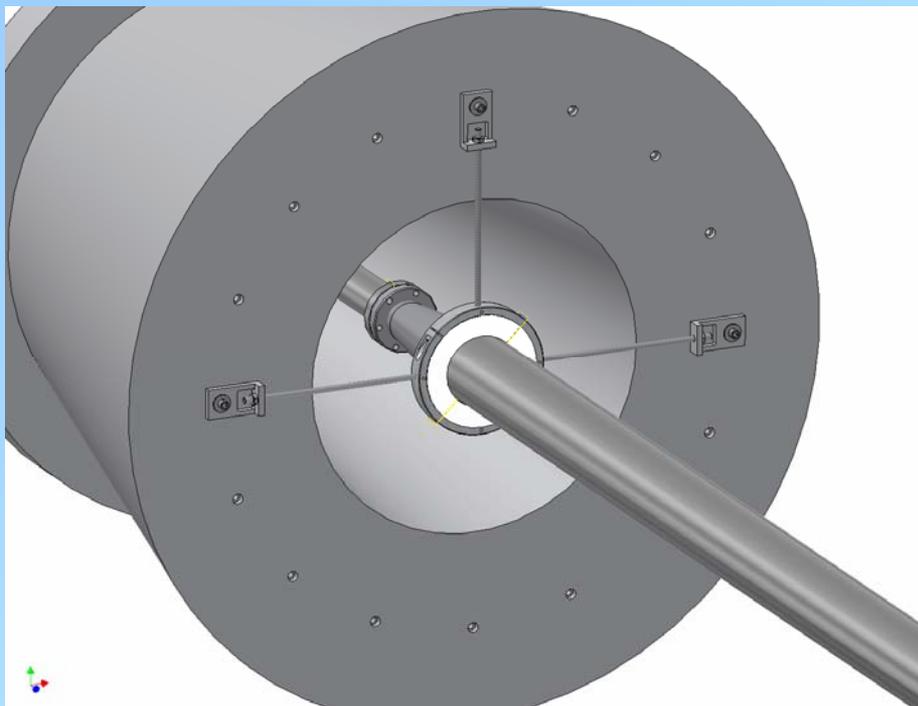


South Flowerpot BP support

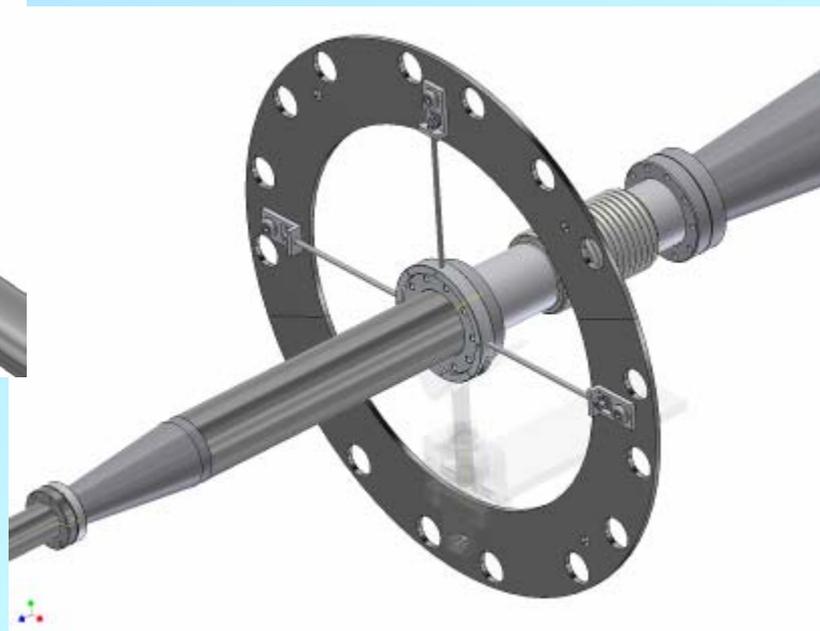
TECHNICAL SUPPORT NO-0

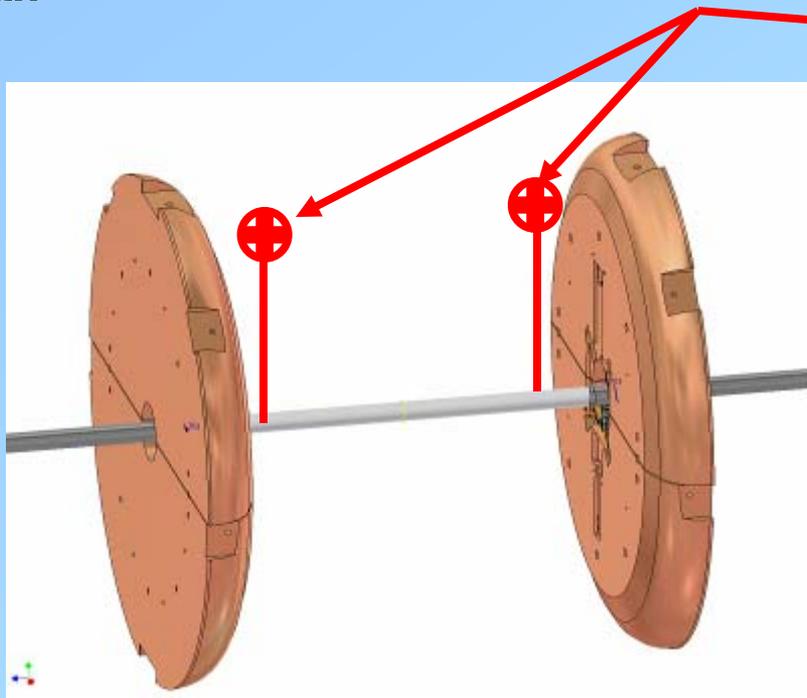


South BBC Cavity BP support



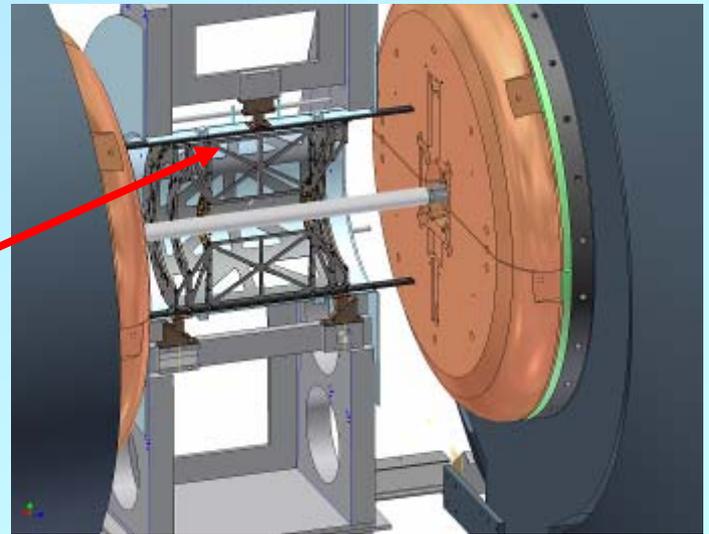
North MPC Cavity BP support





Survey Targets and fixtures TBD
Must be able to align BP to req'd
radial and angular accuracy
without VTX and with VTX in
clamshells open configuration.

$\frac{1}{2}$ of VTX
detector support
structure



VTX Subassembly, Top Assembly, Installation and Integration Prep

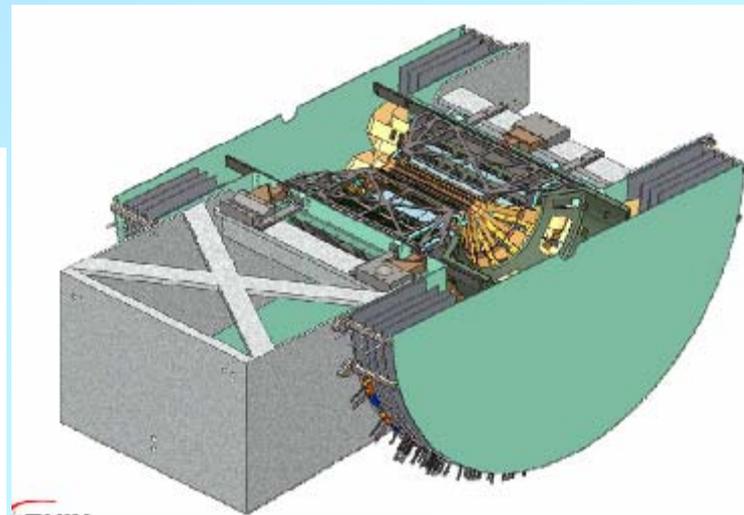
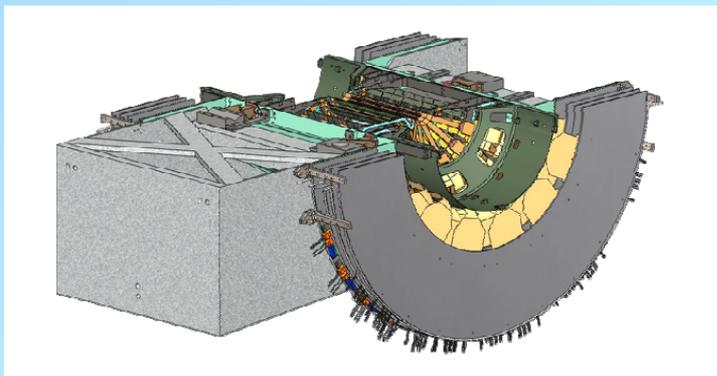
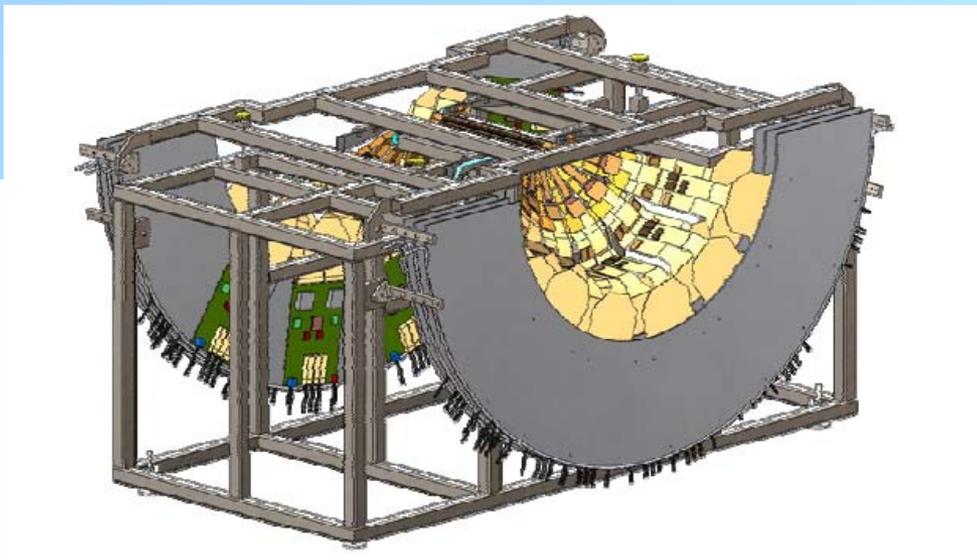
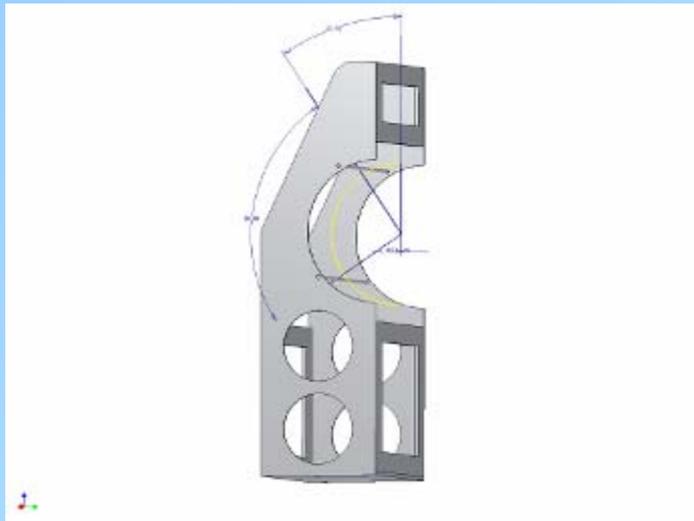
TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Design assembly workspace, tools and fixtures	Done	Fixtures designed by PHENIX →
Fabricate/prepare assembly workspace, tools and fixtures	Done	Fixtures designed by PHENIX Done →
Receive, inspect, test, rework and qualify assembly tools and fixtures	Done	Fixtures designed by PHENIX Done →
Design assembly workspace, tools and fixtures	Done	VTX Group →
Fabricate assembly workspace, tools and fixtures	3/31/2010	PHENIX →
Conceptual and mechanical design of installation, structural support and detector alignment, including station 1 work platforms	2/26/2010	→
Installation Review (ESRC)	~3/15/2010	→
Beampipe & VTX Installation Work Permits	5/31/2010	→
Subassemblies complete ready for integration into hemispheres	6/30/2010	→
Receive, inspect, test, rework and qualify assembly tools and fixtures, electronics racks and support	6/30/2010	VTX Group
Fabricate/procure detail components for installation, support and alignment, including station 1 work platforms	6/30/2010	→
Design & fabricate fixtures, techniques and mockups for installation and alignment	6/30/2010	→
Receive & inspect components (installation, support & alignment)	7/15/2010	→
Assemble Hemispheres	7/15/2010	→
Mock installations/alignments on bench and in IR	7/31/2010	↓

3/4/2010

VTX Support Structure Base Assembly Design In Progress

TECHNICAL SUPPORT NO-0



RPC3 Pre Shutdown Prep

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Review RPC3 North for Lessons Learned	Done	→
Make a list of all purchased and fabricated parts	Done	→
Place order for CS fabricated parts	Done	→
Implement design improvements for RPC3 South	Done	→
Receive and inspect 1/2-octant shells	Done	→
Order raw materials for PHENIX fabricated parts	3/15/2010	
Order purchased parts for RPC3 South	3/15/2010	
Prepare Installation Plan	3/15/2010	→
pre-survey 1/2 octant shells	3/19/2010	→
Fabricate PHENIX parts	5/14/2010	→
Receive and inspect CS fabricated parts	5/28/2010	→
Prepare work permit for installation	6/1/2010	→
Receive purchased parts	6/4/2010	→
Assemble, test and burn-in 1/2 octants	6/18/2010	→
Pre-Assemble base components at PHENIX	6/25/2010	↓

3/4/2010

Start of Shutdown

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
End of Run 10	5/31/2010	
Purge Gas From Detectors	6/4/2010	
DAQ Tests	6/4/2010	
Close North and South BP gate valves and lock closed for until new BP is installed	6/4/2010	
Open and disassemble wall	6/11/2010	
Remove EC ladder and fold platforms	6/11/2010	
Remove BP Collar	6/11/2010	
Move MMS south	6/14/2010	
Prep EC for move to EC	6/18/2010	
Move EC to AH	6/25/2010	
Install cart	6/28/2010	
Move Collars to AH	6/28/2010	
Install decking	6/29/2010	
Install Manlift	6/29/2010	
Remove RPC2 Prototype, support brackets, cabling & Piping	6/29/2010	
Remove MMS east vertical lampshade	6/30/2010	May be deleted

Beampipe De-installation

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Remove HBD's and HBD cables Remove RXNP's and cables	7/9/2010	Concurrent with Start of shutdown tasks
Remove MPC's	7/16/2010	Concurrent w MPC's
Remove BBC's	7/16/2010	Concurrent with BBC's
Position MMS for Vacuum break	7/19/2010	
Install Temporary supports for old BP	7/19/2010	Supports TBD
Break vacuum on north side of MMS	7/19/2010	
Remove south bellows	7/19/2010	
Move MMS north, remove spool and south3-5 transition	7/20/2010	
Move the MMS south & Prep MMS for move to AH	7/23/2010	Begin MMS prep with shutdown start
Move CM south, remove north bellows	7/23/2010	
Move old Be bp south into MMS and move CM north	7/23/2010	
Move MMS to shutdown park position	7/23/2010	
Remove old Be BP	7/23/2010	
Move CM south and east	7/23/2010	
Remove north 3 to 5 transition	7/23/2010	

New Beampipe installation



TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Prepare north 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	7/23/2010	CAD
Install north 3 to 5 transition in MMN	7/30/2010	→
Install new Be pipe in CM on temp supports	7/30/2010	→
Move CM back to beamline & connect new Be BP to 1-5/8 transition and bellows and north 3-5 transition	7/30/2010	→
Move CM to run position	7/30/2010	→
Prealign Be/Alum pipe with transitions attached on new BP supports At MPC north, BBC south and north nosecone	7/30/2010	→
Prepare south 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	7/30/2010	→
Install south 3 to 5 transition, bellows and 1-5/8 to 3" transition in MMS	8/4/2010	→
Move MMS back into IR on beamline	8/4/2010	→
Move CM south, slide Transition assembly in MMS north and connect to new Be BP	8/4/2010	→
Move CM and MMS north and install south spool. Leak check. Move MMS South	8/4/2010	→
Install temporary bakeout supports	8/4/2010	→
Install bakeout blankets and monitoring	8/4/2010	→
Bakeout New BP and activate NEG coating	8/27/2010	How Long?
Leak check BP	8/27/2010	→
Re-install MPC's including Cables and services Re-install BBC's including Cables and services	9/10/2010	Concurrent efforts
Move CM to run position	9/10/2010	→
Final alignment of new BP	10/1/2010	→

3/4/2010

VTX Installation, VTX Services and Electronics



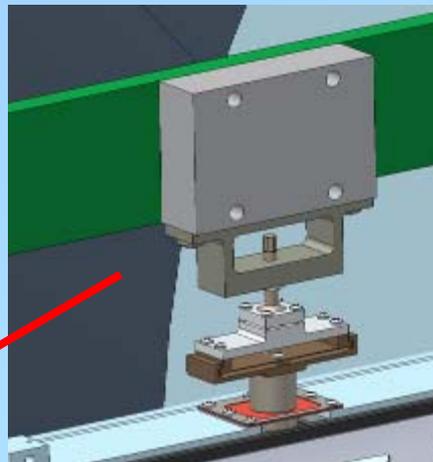
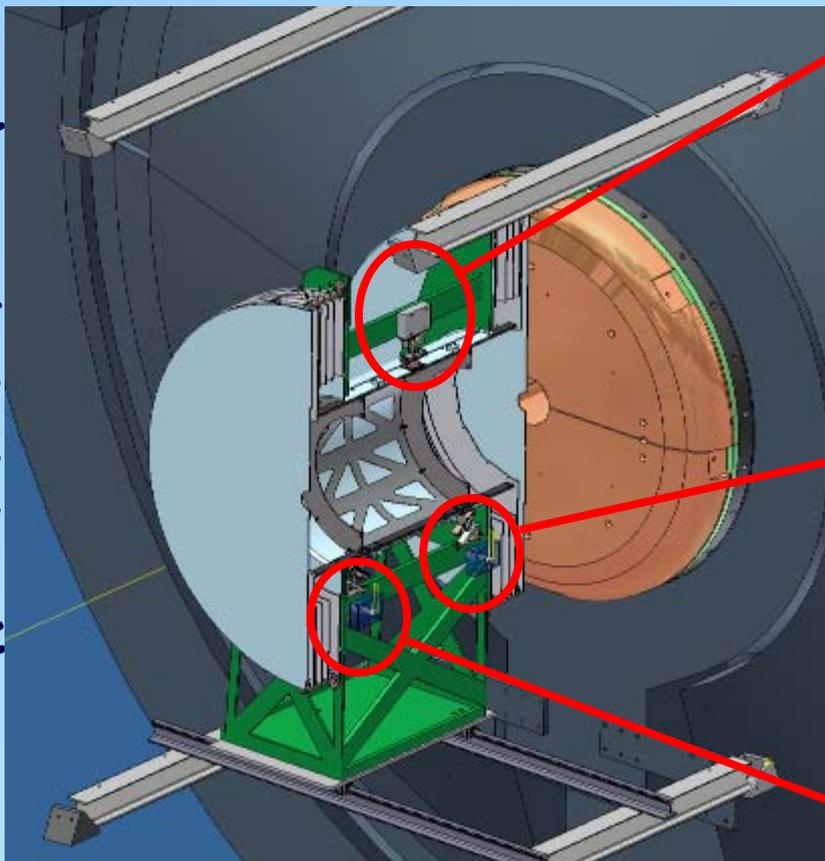
TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Install and align VTX rail attachment hardware to CM	8/27/2010	Install during bakeout? →
Install and align VTX rails parallel to beam line	9/3/2010	→
Install and align VTX rails perpendicular to beam line	9/3/2010	→
Install and align west half detector module	9/10/2010	→
Install and align east half detector module	9/17/2010	→
Install mechanical support structures for VTX services and electronics	10/1/2010	Concurrent Effort →
Install Cable trays	10/1/2010	→
Install racks	10/1/2010	→
Install chiller	10/1/2010	→
Install cables, plumbing	10/1/2010	→
Connect cables and plumbing	10/1/2010	V →
Test and commission	11/1/2010	↓

VTX Installation Plan

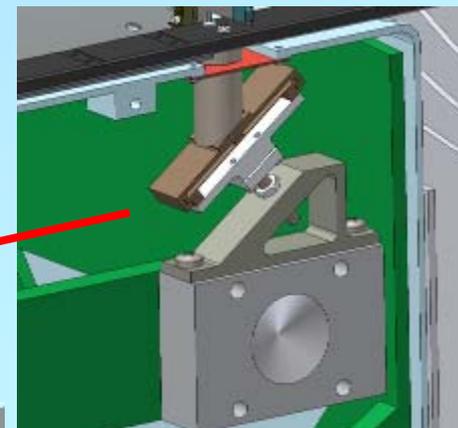
TECHNICAL SUPPORT NO-0

Kinematic mounts for mating east and west detector halves

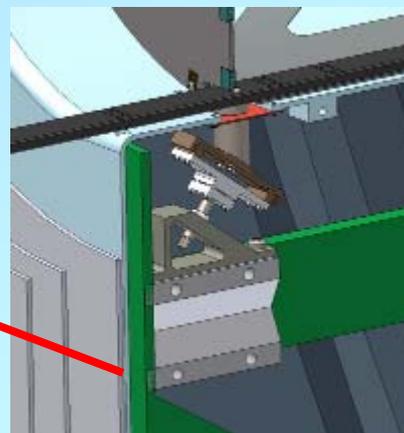


2 DOF (Y & Z)

0 DOF



6 interface points w/ HYTEC



1 DOF (Z)

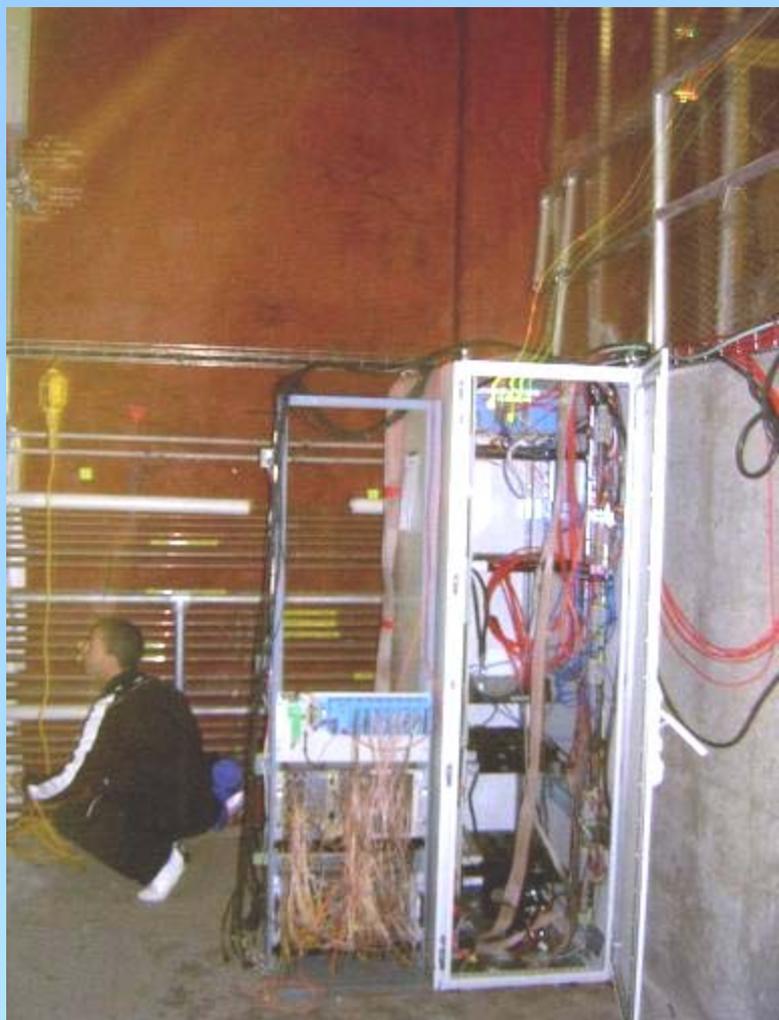
RPC3 South Prep, Early Shutdown



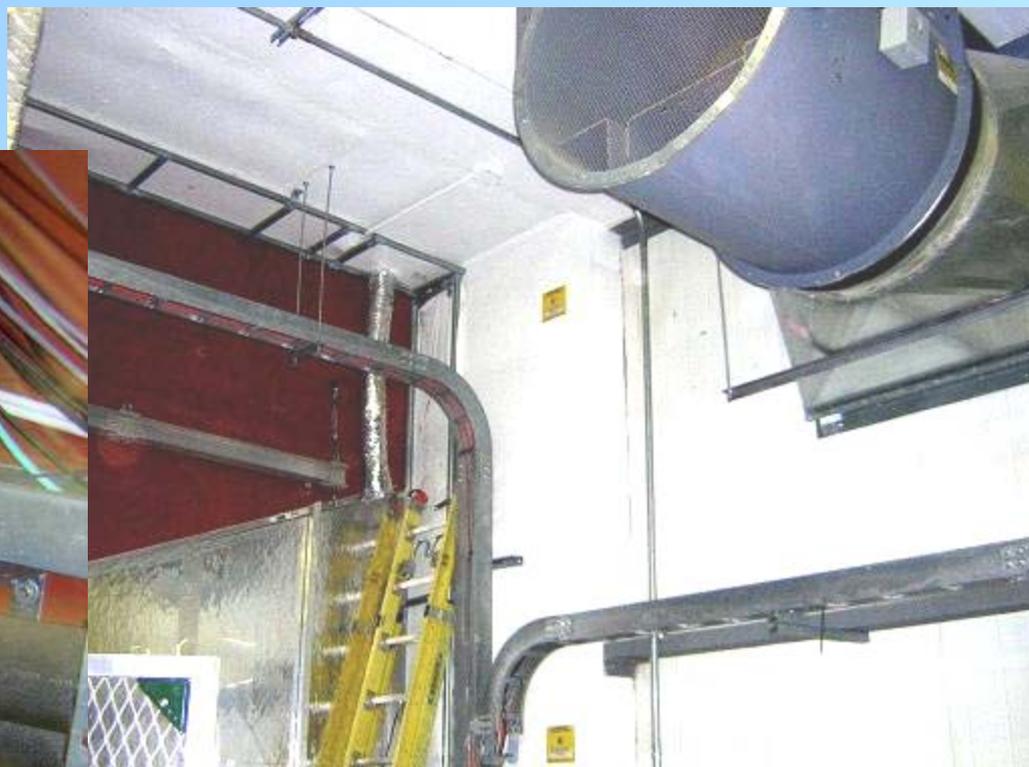
TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Remove wiring, walkovers, FCAL and scintillator hardware that would otherwise interfere with installation	6/4/2010	PHENIX →
Remove/relocate shielding	6/11/2010	Riggers →
Remove crystal palace & vapor barrier	6/18/2010	CAD →
Inspect Gap 5 south for legacy items/problems	6/25/2010	→
Address legacy items/problems as convenient prior to shutdown start	7/2/2010	→
4th of July Holiday	7/6/2010	→
Install lighting & relocate sensors as necessary	7/20/2010	Electrician →
Temporarily relocate, re-position or otherwise address interfering piping, cable trays	7/21/2010	PHENIX (w/ CAD Help?), Electrician →
Remove RPC prototype	7/21/2010	→
Pre-survey $\frac{1}{2}$ octant reference points	7/28/2010	Surveyors →
Drill and tap $\frac{1}{2}$ octant and rotating piston mounting points	7/30/2010	→
Build/install access and work platforms for walk on top of MuID steel including stairs from MMS eyebrow	8/4/2010	Carpenters →
Final cleaning and prep of gap 5 for grouting	8/6/2010	→
Pre-installation orientation meeting with masons and riggers	8/5/2010	→
Position lifting equipment in tunnel	8/6/2010	Riggers →
Move east and west base structures into south tunnel and assemble on east and west sides of pedestal respectively. Include translation control fixtures	8/6/2010	Riggers & PHENIX techs →

ТОВ "ФІНІКС" НАДАЄ ПЛАН



TEUCHUAK USADOLT NO-0



RPC3 South Installation

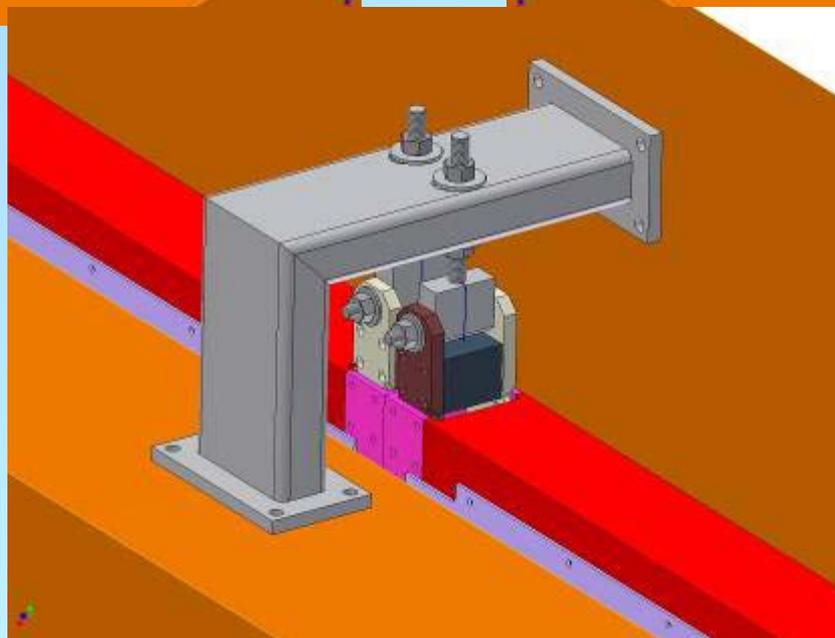
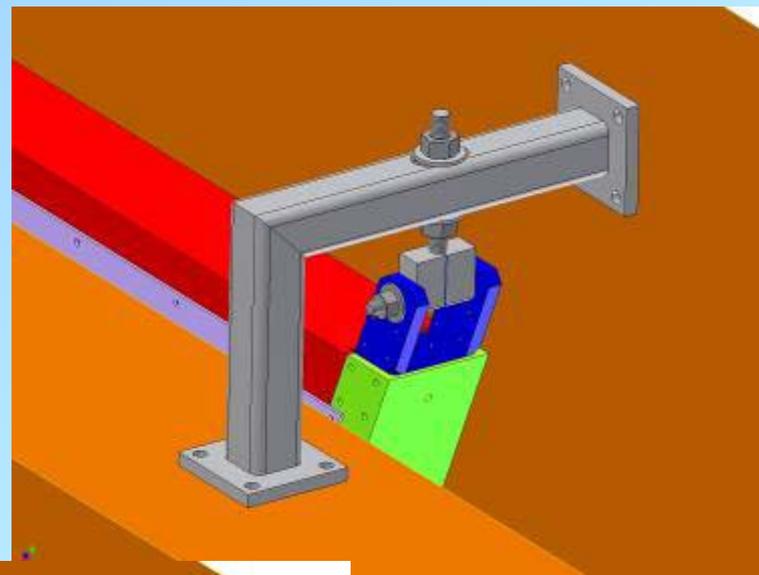
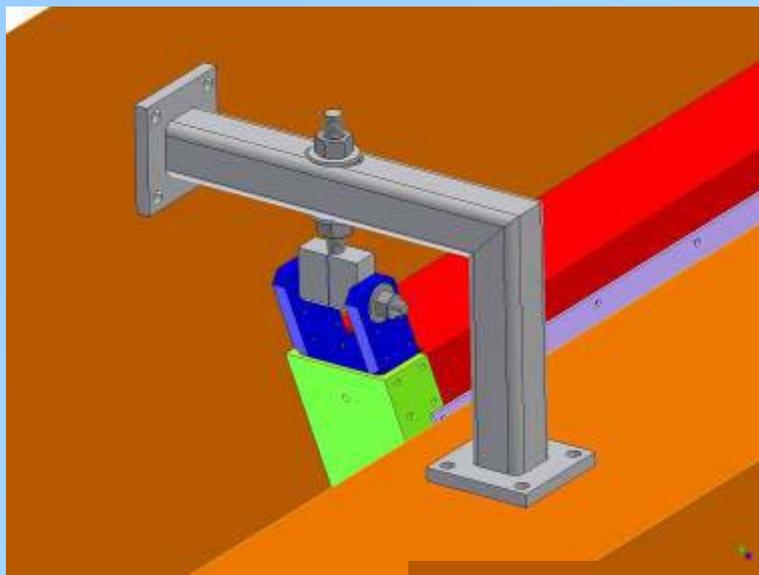


TECHNICAL SUPPORT NO-0

Task	Due By	NOTES
Install and align base structures on east and west sides of gap 5	8/11/2010	
Prepare for grouting	8/12/2010	
Install grout	8/13/2010	
Install pitch control rails on pedestal and gap 5 east & west inner walls	8/27/2010	
Install upper suspension support hardware	8/31/2010	
Install $\frac{1}{2}$ octants, 2 at a time in accordance with work plan/work permit		
<i>Transport $\frac{1}{2}$ octants 2 at a time from RPC factory to south tunnel on angled transport carts</i>		
<i>Transfer $\frac{1}{2}$ octants from angled transport carts one at a time to temporary free standing and re-orienting roller fixture (fore and aft wheels and axel)</i>		
<i>Lift (and re-orient if appropriate) $\frac{1}{2}$ octant and install into base structure, previously installed $\frac{1}{2}$ octant or upper suspension hardware as appropriate per work plan</i>		
<i>Pre-align each $\frac{1}{2}$ octant as installed</i>		
<i>Perform electrical integrity tests before proceeding to next pair of $\frac{1}{2}$ octants</i>		
<i>After all $\frac{1}{2}$ octants are in place and tested, join east and west halves of full south station 3 detector and align to survey markers</i>		

RPC3 South Installation Plan

TECHNICAL SUPPORT NO-0



RPC3 South Integration

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Final survey	9/17/2010	Surveyors
Install new cable trays and piping supports	9/30/2010	Electrician, earlier if possible
Re-install MuID wiring and pipes	9/30/2010	
Re-install MuID gas rack	9/30/2010	
Install south thermal/vapor barrier	10/15/2010	CAD
Re-install shielding	10/29/2010	Riggers
Commissioning and final acceptance tests	10/29/2010	RPC Group
Install RPC3 HV, LV and signal wiring and gas lines	10/31/2010	
Install RPC3 South gas distribution rack	10/31/2010	
Install RPC3 South environmental controls (heaters and thermostats)	10/31/2010	Electrician

Shutdown 2010 Other Work

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
RPC3 North unfinished business	7/15/2010	Electronics and cabling, grounding issues, environmental controls
MuTrigger FEE unfinished business	7/15/2010	MMS cable trays, →
RHIC Summer Sunday Tour	8/15/2010	During bakeout →
Other subsystem maintenance and repair	10/1/2010	TBD →
Gas System maintenance, repair, upgrade	10/1/2010	→
Bridge Electrical support upgrade	10/1/2010	Support for 4 full racks in 2010, 4 more (8 total) in future →
PHENIX Infrastructure maintenance, repair, upgrade	10/1/2010	TBD →
Rack Room upgrade	10/1/2010	TBD →
Future upgrade support	11/1/2010	RPC1, RPC absorbers, FVTX, FOcal, other TBD →
DC/PC maintenance/repair	10/15/2010	FEM and wire troubleshooting and repairs, major efforts will require longer shutdon →
Prepare for Run 11	10/31/2010	Normal end of shutdown tasks, typically taking 3-4 weeks →

2009 Building Maintenance Issues

TECHNICAL SUPPORT NO-0

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall and over door between control room and elect. ass'y room.
- General maintenance for Trailer Offices (in progress)
- Trailer Office Modifications planning in progress
- New roof leaks in laser room and IR (southeast corner)



PHENIX Procedure Review Current Status:

147 Procedures Identified

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

10 CAD procedures relevant to PHENIX, all are current and up-to- date.
1 currently under review,

42 PHENIX approved procedures.

1 is currently under review

41 are current and up-to-date

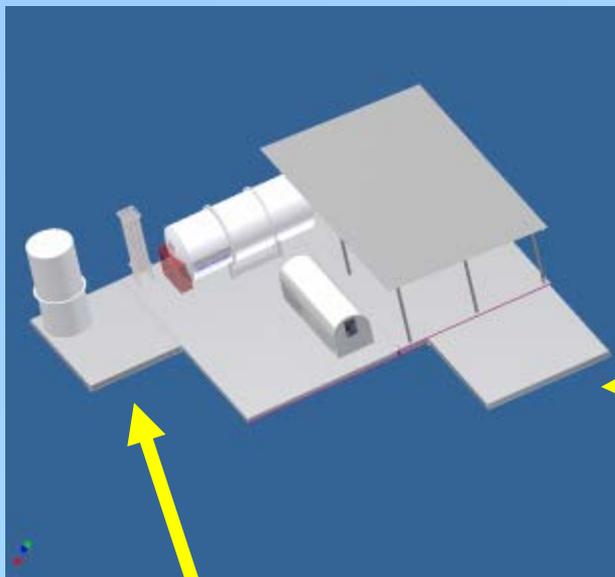
11 Proposed/Draft Procedures (never previously formalized)

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

TECHNICAL SUPPORT NO-0

New Argon Dewar and Empty Gas Bottle Storage Area



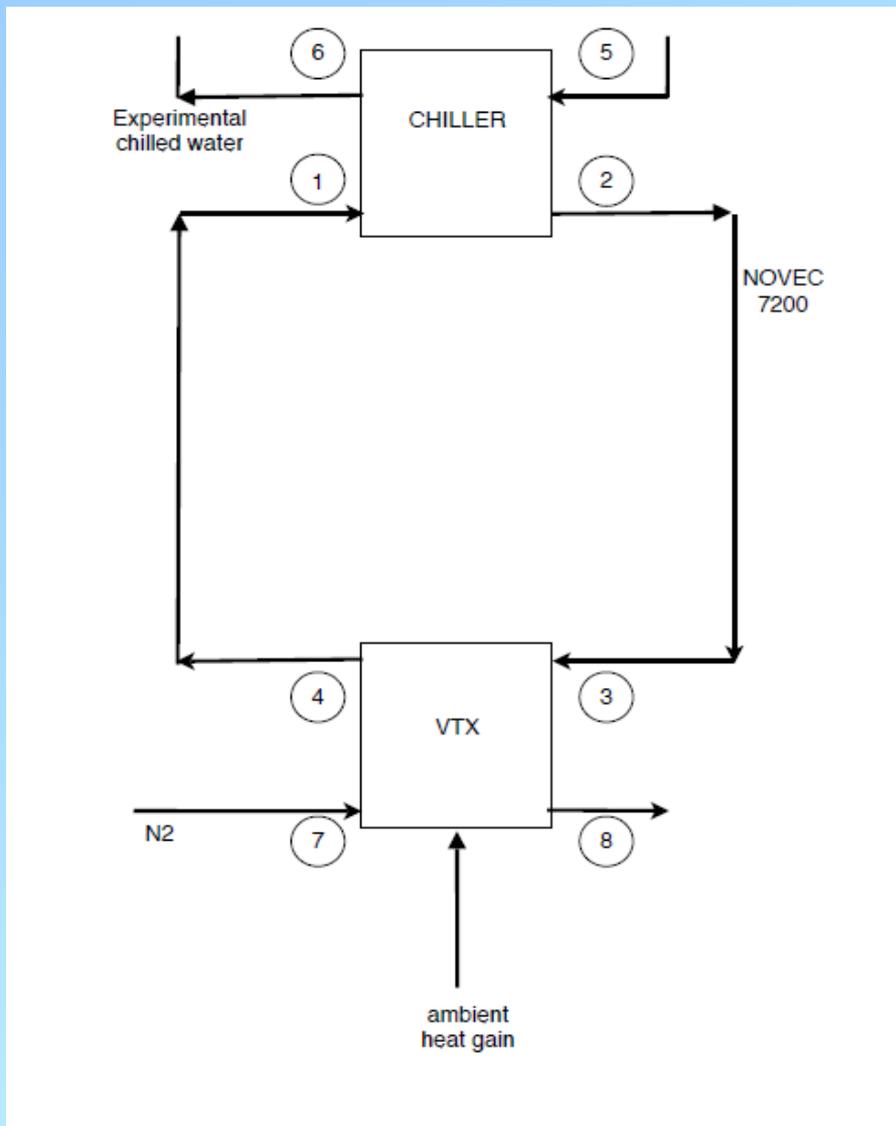
Pad for Empty Gas Bottles



Pad for argon Dewar

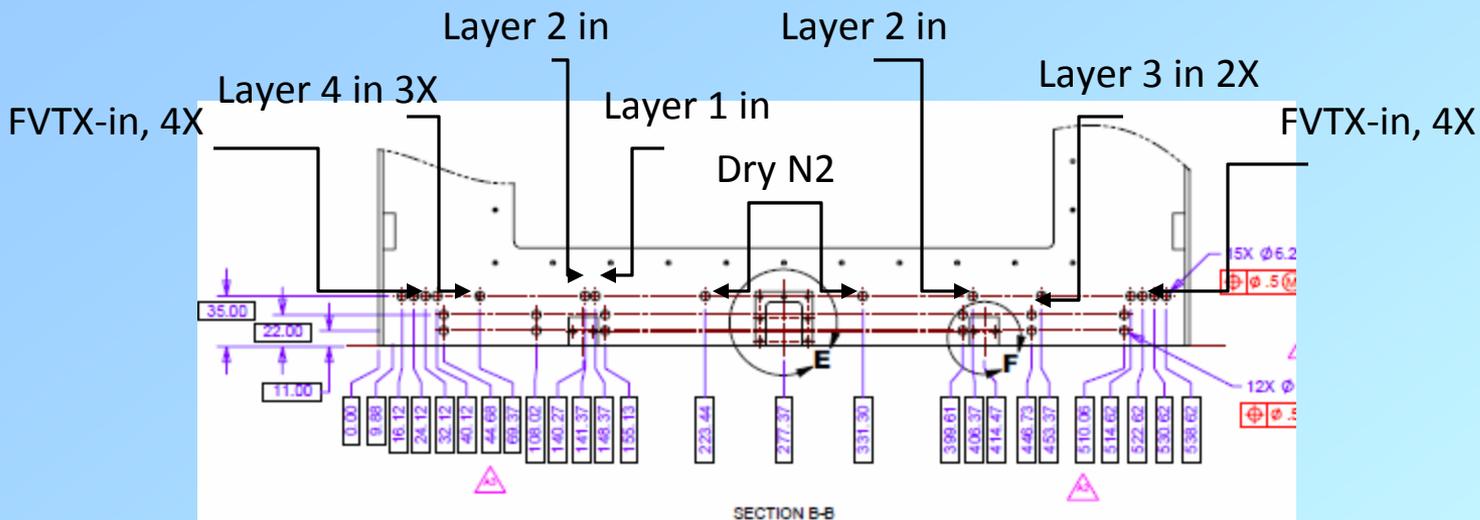


TECHNICAL SUPPORT NO-0

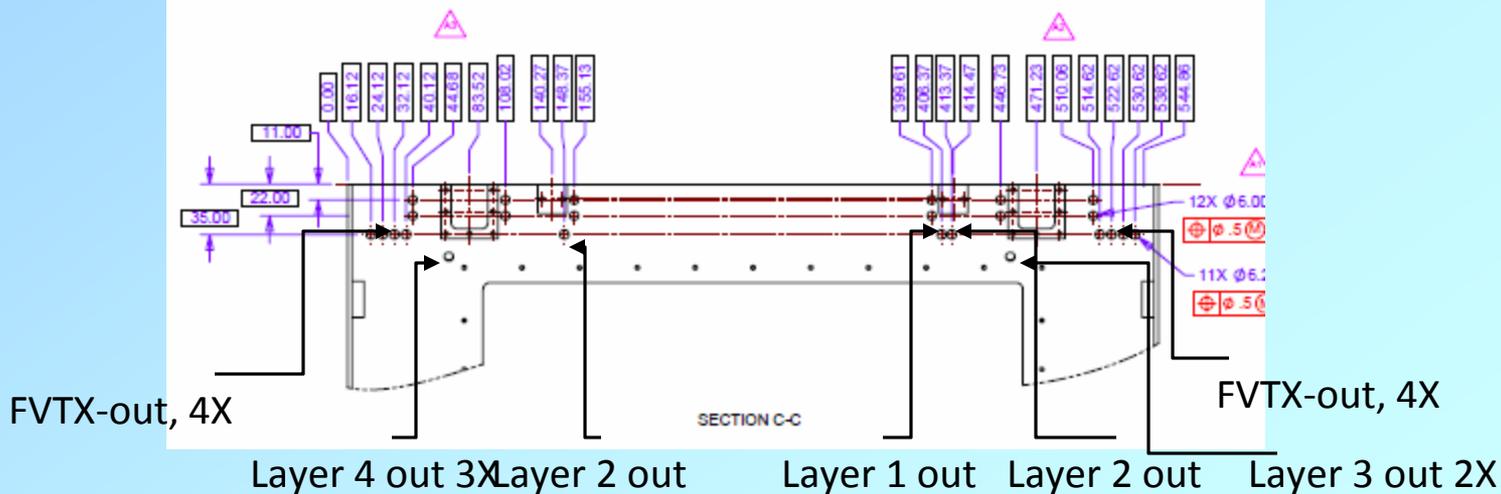


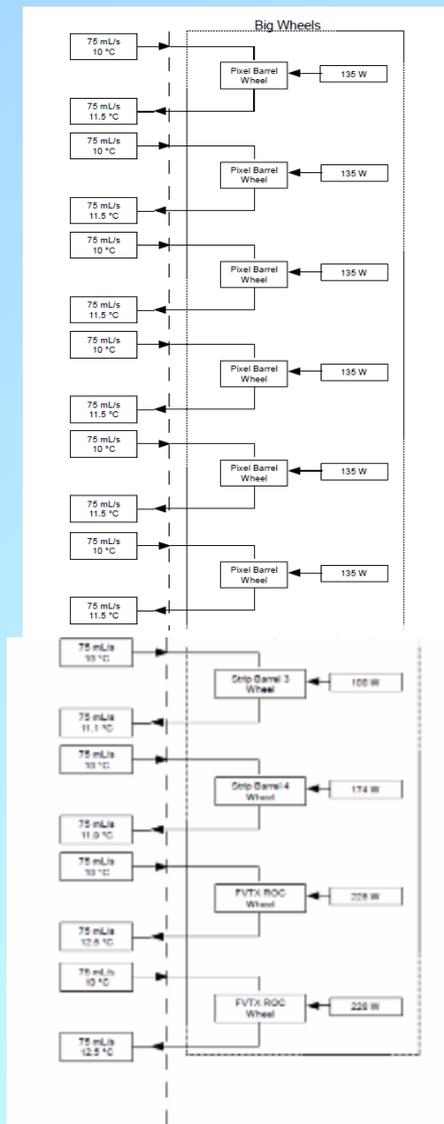
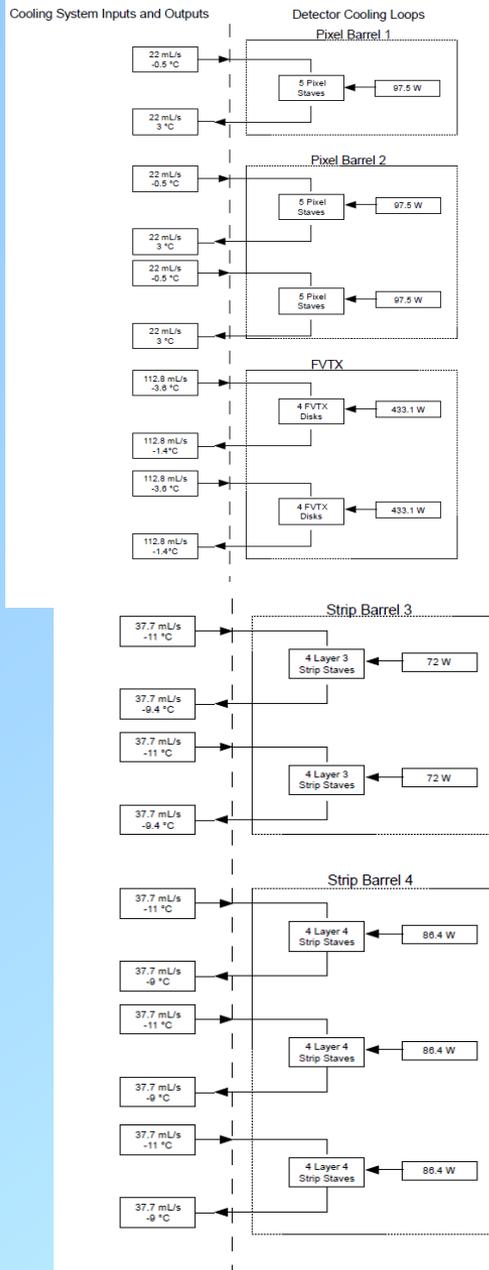
VTX/FVTX Coolant tube routing through gas enclosure, each coolant circuit Tygon tube runs through a 1/4" hole in the enclosure:

TECHNICAL SUPPORT 00-000000



Views reference details on HYTEC drawing: 111-PHX-02-2101 sheet D2

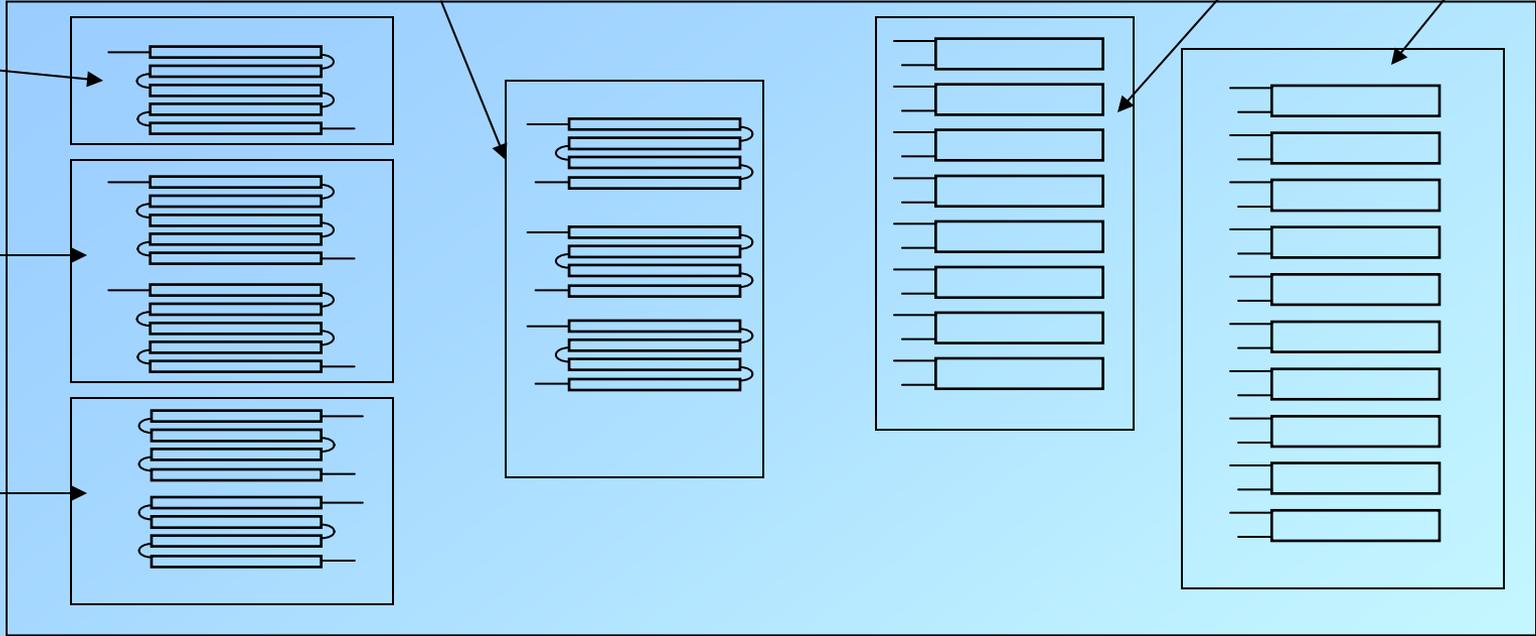




8 Independent circuits in VTX $\frac{1}{2}$ detector
 8 independent circuits in FVTX $\frac{1}{2}$ detector
 10 independent circuits in $\frac{1}{2}$ detector Big Wheels

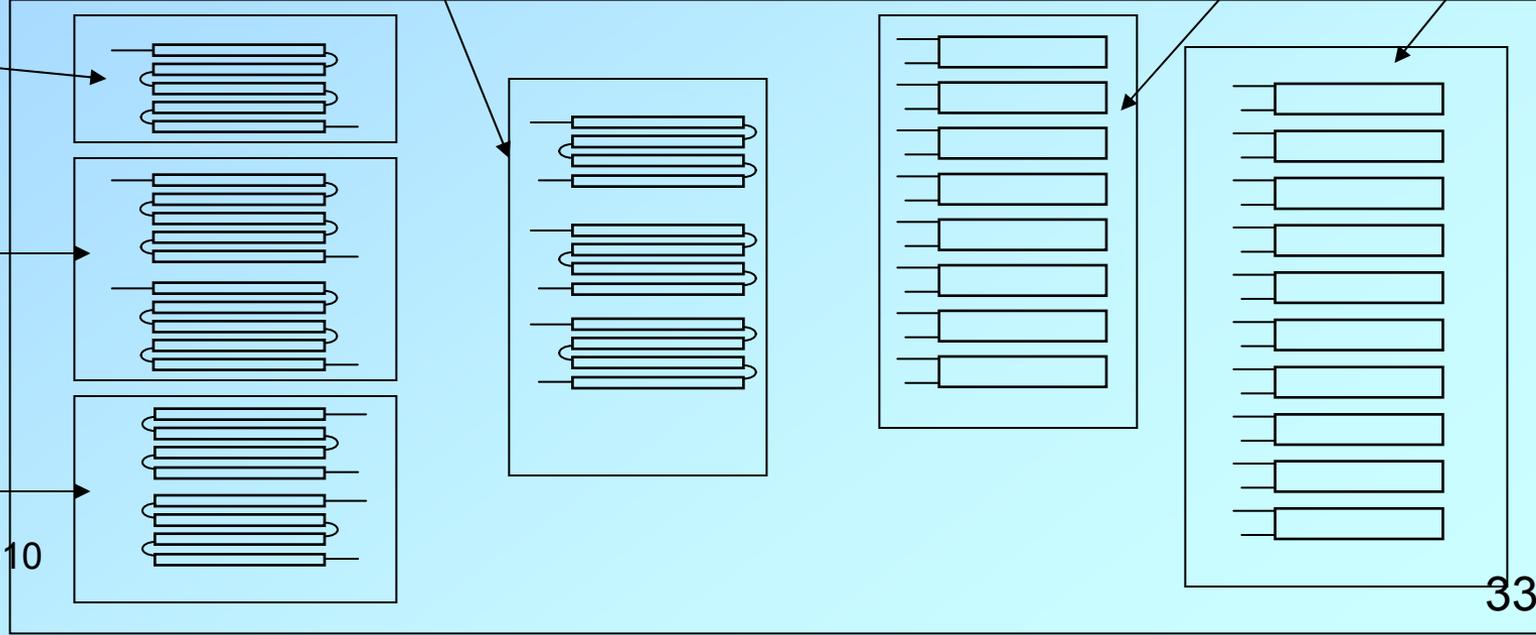
Barrel 4 VTX/FVTX East

FVTX Big Wheels



Barrel 4 VTX/FVTX West

FVTX Big Wheels



3/4/2010

1. Please remember - you need to call x2222 or 911 on a BNL phone if a serious injury occurs. At C-AD we also suggest pulling the fire alarm for injury since this immediately notifies the Fire Department where you are located. These emergency phone numbers connect directly to the BNL Fire and Police. If using a cell phone dial 344-911 or 344-2222.

The recent CAD internal audits we had last week showed that only ~50% of those interviewed remembered these emergency numbers.

2. At a many recent meetings between C-AD groups and C-AD ESSHQ the following observation was made:

"Trades people do not always clean up after job is completed, more of an issue with outside (F&O) trades workers than those assigned to C-AD. Feeling is this could be a lack of ownership issue "not their department".

Please alert your people to inform Mel Van Essendelft at extension 4781 if an F&O trade or an outside contractor performing work leaves an area in a mess once the job is completed and the work planner cannot resolve the problem. It will give us the opportunity to call the appropriate supervisor and get that group to clean the area up. Have the people reporting be as specific as possible - what trade or group was doing the work (if known) and what was left in the area.

3. For information regarding stress at work and how to minimize it see:

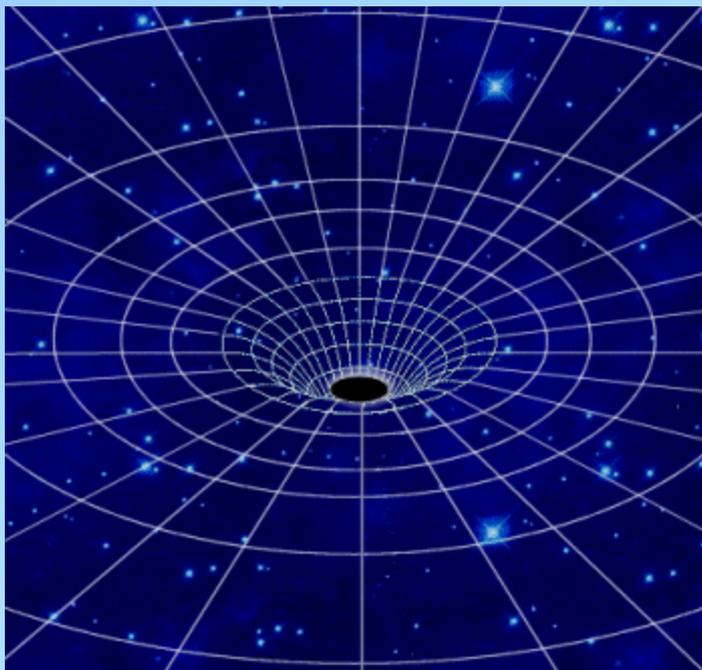
http://www.helpguide.org/mental/work_stress_management.htm

March comes in like a lion ...



Where To Find PHENIX Engineering Info

Please place any new requests for work during the 2010 summer shutdown in the new request repository at the left.



TECHNICAL SUPPORT 2010

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



3/4/2010