

PHENIX WEEKLY PLANNING

4/19/2007

Don Lynch

Next 2 Maintenance Days: Apr. 25, May 9

Remove HBD West WP required

MuTr North test capacitor removal WP required

Get requests in early, especially if work permit required

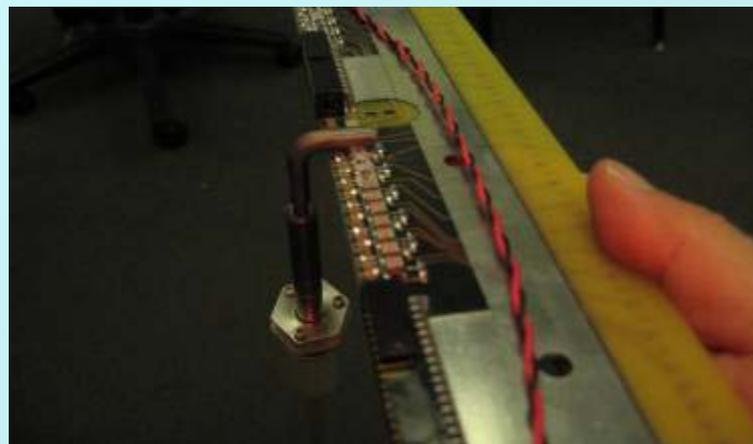
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HBD West Removal



1. Prior to any IR entry, all PHENIX magnets will be ramped down and locked out. HBD HV shall be turned off.
2. Immediately after restricted access has been declared, PHENIX mechanical techs shall reposition both the east and west carriages to their retracted (open) positions.
3. PHENIX techs shall disconnect all HV, LV and signal cables from the west detector and restrain the loose cable ends within the HBD west cable trays using appropriate cable ties or equivalent.
4. After all cables have been removed, PHENIX gas system technicians shall close the 3-way valves on the supply and return lines to isolate and temporarily seal the west detector.
5. Flexible supply and gas return lines shall then be positioned out of the way of west detector removal and restrained.

6. The HBD west upper and lower mounting brackets shall then be disconnected from the upper and lower support rails and the detector shall be carefully lowered (by hand) to the CM lift platform by 2 PHENIX mechanical technicians.
7. The HBD moving fixture (plate and spreader bars) shall be attached to the HBD west on the CM platform, then the assembled detector and fixture shall be moved by hand to the CM area west side floor. 2 PHENIX technicians shall be on the CM lift table handing the assembly to 2 additional PHENIX techs on the floor.
8. The assembly shall be carried by hand to the south end of the CM area where the CM crane will be attached to the moving fixture and the assembly shall be carefully lifted up above the electronics cabinet at the south end of the west carriage, then west over the cabinet, south and down to the floor south of the west carriage. During this part of the procedure all areas within 15 feet (horizontal) of the crane path shall be cordoned off to all except the PHENIX techs involved in the task.
9. The assembly then shall be carried by hand east then north around the east carriage and through the plug doorway to the PHENIX assembly hall.
10. The HBD west will then be prepared for shipment to Stony Brook in its shipping cage per HBD expert instructions.



The PHENIX MuTr experts propose to test/demonstrate a new technique to safely remove high-voltage surface mount chip capacitors, from anode wire circuit cards - that are a part of the station 3 tracking chambers - mounted to the back wall of the north and south muon magnets. Station 3 North has 10 anode cards per wire plane, 9 cards have 32 capacitors, one card has 29 caps (remaining wires used for calibration pulses). $9 \times 32 + 23 = 317 \times 16 = 5072$ (2 wire planes per chamber, 8 chambers) capacitors in Station 3 North.

During this access they will use a modified 30 watt soldering iron that has a custom tip attached (see attached pictures). The soldering iron tip slips over the HV-cap, once heat is applied the capacitor becomes loose and can be easily removed. They intend to only look at octant number 7, which is mounted in a 6-o'clock location.

PHENIX - 2007

1. Prior to any IR entry, all PHENIX magnets will be ramped down and locked out.
2. MuTr HV off?
3. Prior to entry into the MMN C-A safety shall be contacted, when he arrives to sample the internal MMN atmosphere, the sliding access panel shall be opened to permit sampling and an O2 content of the MMN internal atmosphere shall be sampled and recorded on the attached sheet.
4. The C-A confined space safety expert shall determine from the tests whether it is safe to enter the MMN for the purposes stated herein. ***In no event shall anyone enter the MMN prior to approval of the C-A confined space monitoring expert.***
5. After clearance to enter has been, properly trained MuTr experts and/or properly trained PHENIX technicians shall sign the entry log sheet (attached) and may then enter and perform the capacitor removal technique test on a limited number of the capacitors as determined by the MuTr experts.
6. After completion of the tasks all equipment brought into the MMN shall be removed and the MMN access panel removed.

Nothing New to report this week

Current Tally:

- 122 controlled PHENIX procedures total (eliminated 6 more)
- 72 de-activated review complete
- 50 active some of these will be combined further reducing the # of active procedures.
- 12 C-A OPM's requiring PHENIX input (11 current, 1 de-activated)

Next Phase:

Carefully review 50 remaining active procedures, determine "cognizance", provide guidance on standardized format and control, solicit update/revision/consolidation/deactivation from cognizant person or group, implement improved configuration control system.

Nothing New to report this week

Fill out list and return it to me by tomorrow. Electronic or paper is OK

Purpose:

1. Standardize/Simplify JTA's
2. Assure that required training is monitored
3. Assure that suggested training is tracked.
4. Remove unnecessary requirements
5. Get proper credit for equivalent training

Goal is to make it easier.

RPC Assembly "Factory" at BNL

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C-A changed the preferred location for RPC factory. Now by A-2 line in 912.

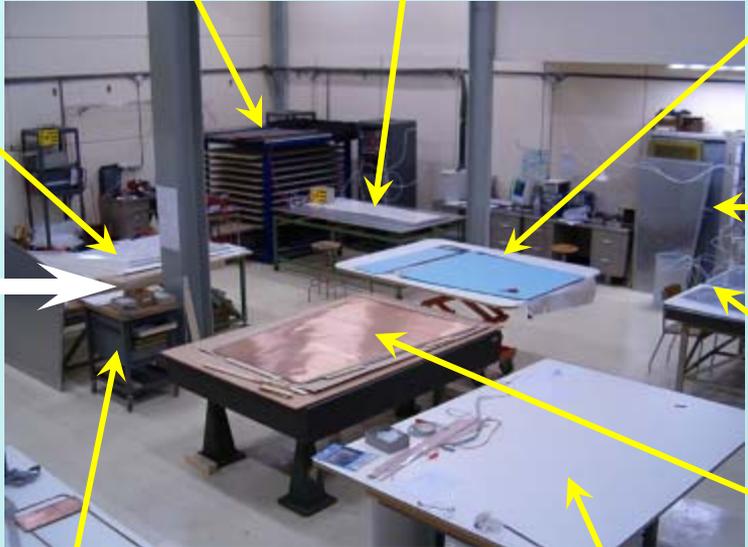


Cosmic ray test stand

Table for preparing cosmic ray test

Movable cart

A small table



Gas system

Tables for leak test

Assembly table

Rolling cart with a lot of drawers to hold tools and screws

Two more tables not in the picture, one for assembly, one for holding tools and material

Table holding tools



RPC Assembly "Factory" at BNL

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• foldable gap transportation carts

- Can fold over to put down or pick-up the gap vertically.
- And also can be raised high enough to be above all table so that it can snake around to transport gap to/from one assembly table when the other is still in process



• cosmic-ray test stands

- Multi-layers confirmation for multiple chamber test simultaneously.

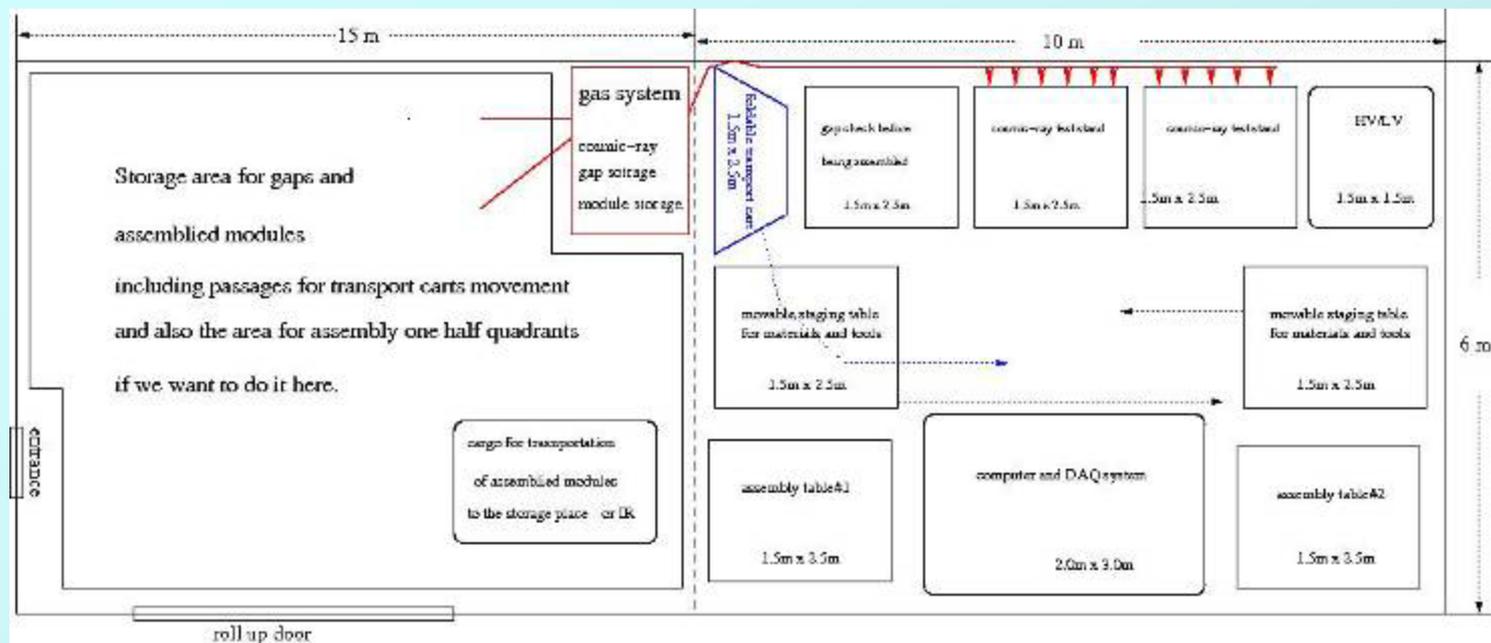


• cargo for assembled module transportation to IR.

- Transport the module vertically .
- Can be something simpler for the transportation between storage area and cosmic-ray test stands.



Proposed Layout for BNL factory



- The gap will be transported from the storage area to the gap-check-table using the foldable transportation carts for leak, spacer pop and dark current check before being assembled.
- Move the staging table to the proper area to leave space for the carts to place the gap on the assembly tables.
- Move the staging table back in place and start assembly
- Start checking another gap at the same time in the gap-check-table to prepare for the next assembly
- After one module is finished, transport the module to the test stands by hands. Plug in the gas and start testing.
- after finished the testing, transport the modules to the storage place, hook-up the gas.

Proposed List of Items Needed

- Tent:
 - the existing tent used for PC assembly can cover half of the room.
- two staging tables of the size 1.5m x 2.5m:
 - Regular table that will be used for temporarily placing material, e.g. readout plane before being assembled. It should be movable so that it can easily vacate the space beside the assembly table for the transport cart to place or take out the gaps.
- Two assembly table of the size 1.5m x 2.5m:
 - Feedback from Byungsik Hong: regular metric table (??) is used for CMS assembly.
 - We can also combine the two tables later for half quadrants assembly (is 2.5m x 3m large enough for this purpose?)
- one gap-check table:
 - Same flatness requirement as the assembly table.
 - Used for gap gas leak, spacer pop and dark current check before the assembly.
- Two multi-layer cosmic-ray test stands (CIAE):
 - to be able to test the largest modules, i.e. 2.0m x 1.3m (??? Please check).
- HV/LV system (UIUC: Ruizhe Young) :
 - Including racks

Proposed List of Items Needed (cont'd)

Gas system (UIUC: D. Northacker):

- Gas pad.
- should be able to handle the following at the same time (it can be 3 different systems if necessary):
 - Provide gas for cosmic-ray test.
 - Provide gas for flushing gas gap during their storage time
 - Provide gas for flushing assembled modules during their storage time.

foldable transport cards:

- For gap transportation among gap storage place, gap-check table and assembly table.
- similar design as in CMS (see previous page)

Module transportation cargo:

- For module transportation between the factory to the IR and between cosmic-ray test stands to the storage area.

Storage for gaps and assembled modules:

- Storage frame for modules and gaps. Expect the design is different for gaps and module storage
- Need leave space for assembly one half quadrants ($2 \times 5m^2$) if combining two assembly table is not large enough.

Computer and DAQ system (UIUC: Ruizhe Young with Martin) :

- PDAQ is one choice. Have not problem to handle hundreds of channels.

Shutdowns 2007-2012

2007-2008-2009-2010-2011-2012

ID	Task Name	Duration	Start	Finish	Predecessors	07	2008	2009	2010	2011	2012
1	RPC Factory	208 wks	Mon 4/16/07	Fri 4/6/11							
2	HBD Remove/Repair	21 wks	Wed 5/9/07	Tue 10/2/07							
3	2007 Shutdown	88 days	Mon 7/2/07	Wed 10/31/07							
4	Shutdown Prep (wall open, EC out, etc.)	3 wks	Mon 7/2/07	Fri 7/20/07							
5	Existing Detector Maint./Repair/Upgrade TED	10 wks	Mon 7/23/07	Fri 9/28/07	4						
6	DC Repair	1 wk	Mon 7/9/07	Fri 7/13/07							
7	MPC repair/upgrades	10 wks	Mon 7/16/07	Fri 9/21/07							
8	MuTr FEE Upgrade 1 octant 1,2 S	8 wks	Mon 7/23/07	Fri 9/14/07							
9	Infrastructure upgrades Crane/Ladder	5 wks	Wed 8/1/07	Tue 9/4/07							
10	EC roll in and Run Prep	4.2 wks	Wed 10/3/07	Wed 10/31/07	2						
11	Run 8	30 wks	Thu 11/1/07	Wed 5/28/08	10						
12	2008 Shutdown	130 days	Thu 5/29/08	Wed 11/26/08							
23	Run 9	30 wks	Thu 11/27/08	Wed 6/24/09	19,22						
24	2009 Shutdown	160 days	Thu 6/25/09	Wed 2/3/10							
45	Run 10	30 wks	Thu 2/4/10	Wed 9/1/10	44						
46	2010 Shutdown	70 days	Thu 9/2/10	Wed 12/8/10							
53	Run 11	30 wks	Thu 12/9/10	Wed 7/6/11	52						
54	2011 Shutdown	120 days	Thu 7/7/11	Wed 12/21/11							
62	Run 12	30 wks	Thu 12/22/11	Wed 7/18/12	61						
63	2012 Shutdown	60 days	Thu 7/19/12	Wed 10/10/12							

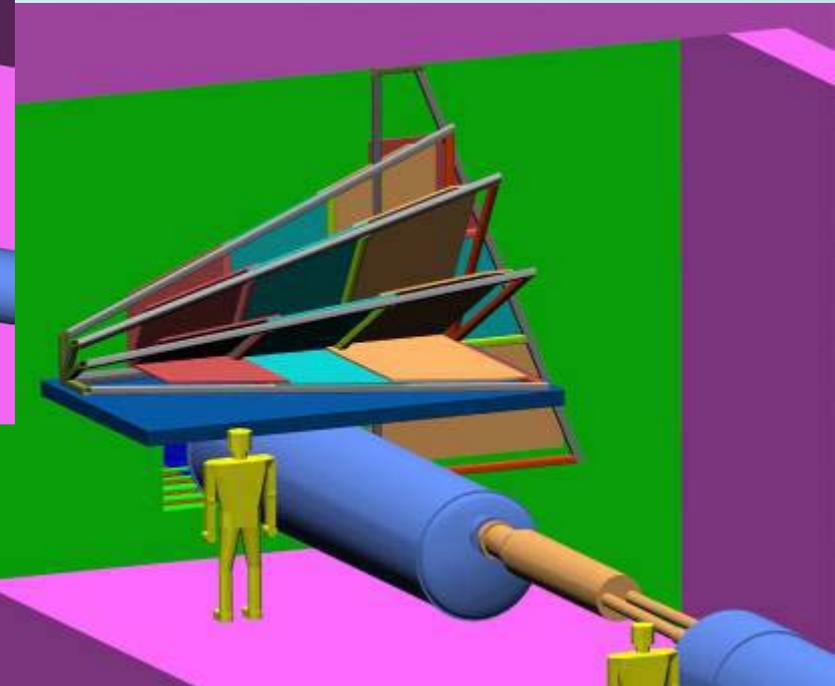
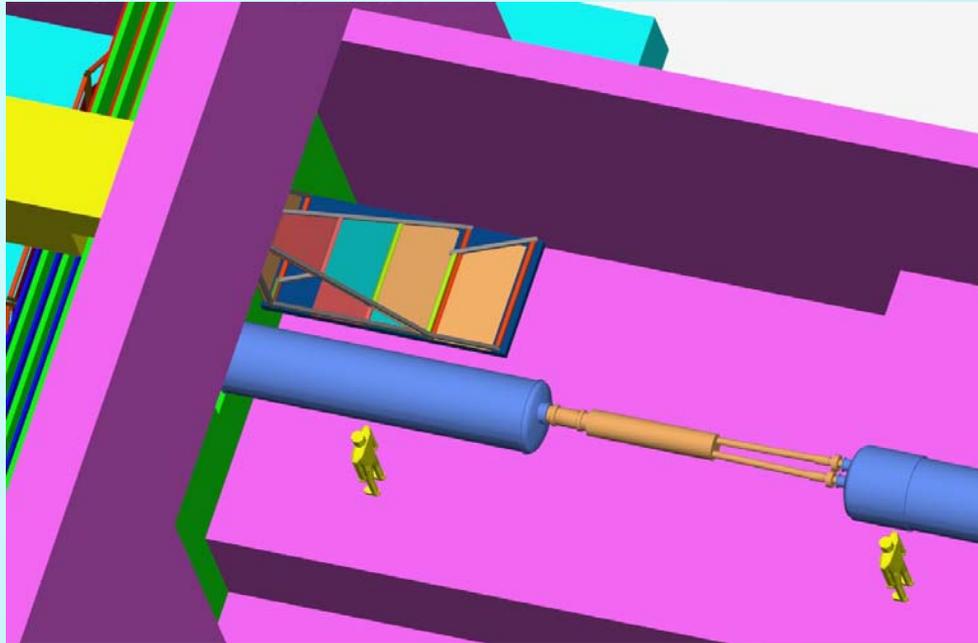
- 2007: HBD Repairs, DC, Repairs, MuTr FEE upgrade 1 octant 1,2 South, Crane, Ladder
- 2008: MuTr FEE all octants South, RPC3 South, LL1 South
- 2009: Beampipe, remove HBD & RXNP, RPC2 N&S, RPC3 N, Cu absorbers, VTX, DC West
- 2010: RPC1 N&S, LL1 North
- 2011: NCC N, FVTX,
- 2012: NCC S, Contingencies

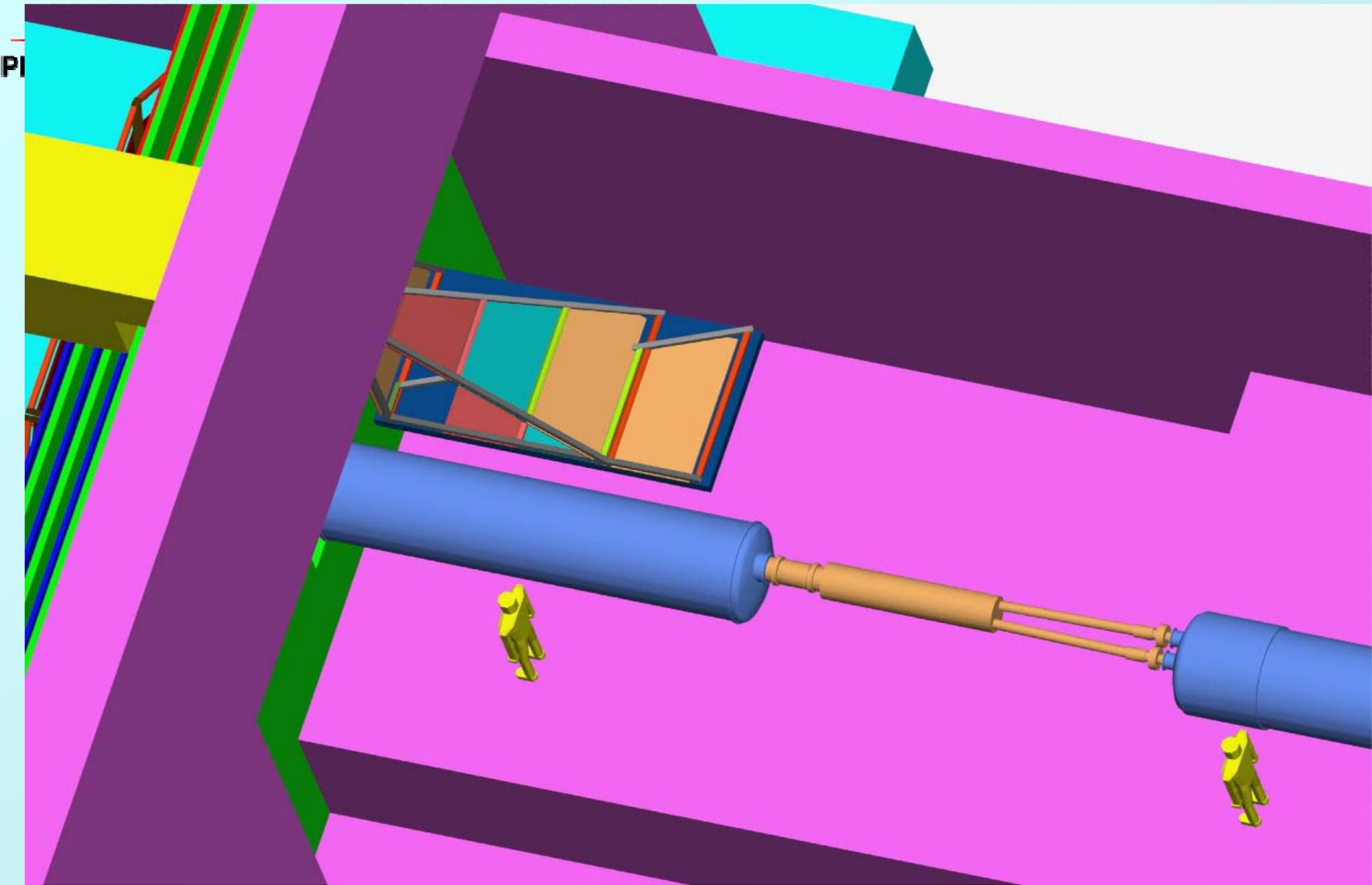
Long Range Planning



Bi weekly integration meeting re-established to plan next 5 years or so. Guidelines adopted. Plan to meet with RPC engineers next Thursday and Friday.

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Close to a plan view showing the table next to the magnet
4/19/2007 Weekly Planning Meeting

Where To Find PHENIX Technical Info



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



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

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