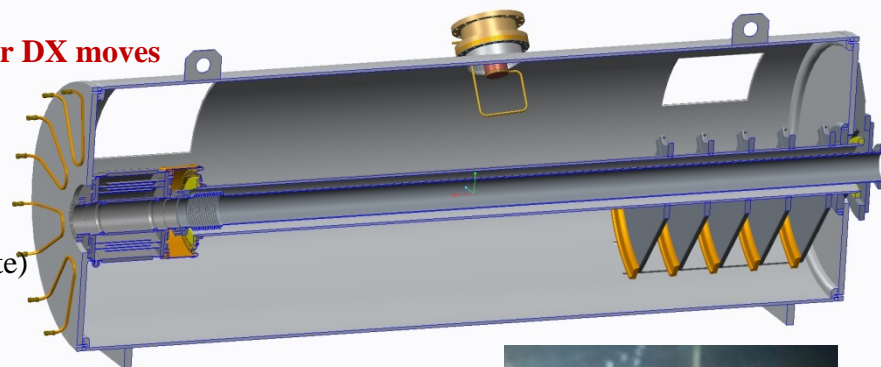
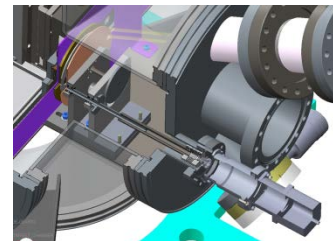


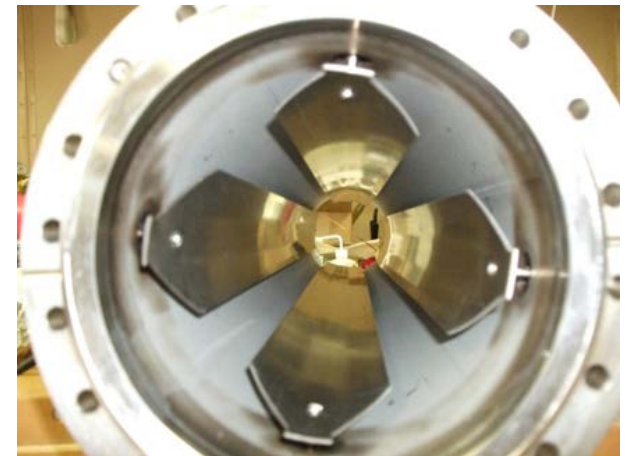
Shutdown Priorities (Mechanical Sys.)

1. BLP Raster Beam Instrumentation Phase I installation (Michnoff, Cullen, Taddonio)
2. **LION Source Upgrade (Liaw, Halinski)**
3. New LINAC polarimeter (Zelenski, Ritter)
4. AGS Siemens Inspection, bearing maintenance/replacement (Porqueddu, Badea)
5. AGS Replace F sector vacuum chambers with standard chambers (Mapes, Gill)
6. RHIC Cryogenic compressor yearly maintenance (Badea, Lederle)
7. RHIC 02:00 CeC PoP **704 MHz SCRF cavity, wiggler magnets, cryogenics**, vacuum, and instrumentation (Brutus, Lambiase, Than, Mahler, Mapes, . . .)
8. **RHIC 06:00/08:00 (maybe 2, 4, 10, 12:00) Modification and Prep for DX moves**
9. **RHIC 03:00 9 MHz test cavity installation (Polizzo, Fite)**
10. **RHIC 04:00 56 MHz HOM installation (McIntyre, Than, Folz)**
11. RHIC 04:00 install AC Dipole near 56 MHz (Gassner, Mapes, Weiss)
12. RHIC 04:00 28MHz Tuner Fabrication and Installation. (Zaltsman)
13. RHIC 04:00 197 MHz cavity tuner maintenance (Zaltsman, Polizzo, Fite)
14. **RHIC 05:00 and 06:00 Roman Pots DX chambers (Nayak)**
15. RHIC 05:00 transverse dampers (2) in yellow (Mernick)
16. **RHIC 06:00 and 08:00 prepare for DX lateral move (McIntyre, Mapes, Pendzick)**
17. **RHIC 08:00 and 11:00 RHIC “masks” new collimators (Drees, Liaw)**
18. **RHIC 10:00 eLens e-gun & e-dump mods – blue and yellow (Hock, Grau, Strea)**
19. **RHIC 10:00 remove and repair eLens blue solenoid (Hock, Anerella)**
20. **RHIC 10:00 remove and repair eLens drift blue and yellow tubes (Hock, Hamdi, Steckenbach)**
21. RHIC 10:00 IP eLens cryogenics return line heater upgrade
22. RHIC 10:00 remove and reconfigure both dump kicker assemblies, install water cooling (Pai, Mi, Lehn)
23. RHIC 10:00 RHIC Beam dump window and shielding upgrade (Nayak, Mapes, Lehn, Gill)
24. RHIC STAR vacuum chamber support redesign (Nayak, Mapes)



Shutdown Priorities (Vacuum Bakeouts)

1. EBIS gun modification and bakeout
2. NSRL Dump bellows change (if available)
3. **4:00 9MHz DX Move - realign cavity (if required)**
4. **4:00 IP AC dipole Installation and 56 MHz Cavity HOM installation**
5. 5:00 BO5 Install Transverse damper
6. 5:00 Roman Pots DX-D0 vacuum chamber installation
7. 6:00 Roman Pots DX-D0 vacuum chamber installation
8. 6:00 STAR beam tube bakeout
9. **8:00 yellow “mask” beam scraper installation**
10. 9:00 Q3/Q4 yellow beam dump kickers
11. 9:00 Q3/Q4 yellow beam dump
12. **10:00 IP RHIC beam line vacuum chamber – e-Lens solenoid repair and drift tube modifications**
13. **10:00 IP eLens blue e-gun and e beamline**
14. **10:00 IP eLens blue e-beam dump and e beamline**
15. **10:00 IP eLens yellow e-beam dump and e beamline.**
16. **10:00 IP eLens yellow e-gun and e beamline**
17. 10:00 Q3/Q4 blue beam dump kickers
18. 10:00 Q3/Q4 blue beam dump
19. **11:00 blue “mask” beam scraper installation**
20. RHIC polarimeters blue and yellow



Shutdown Priorities (P. Sampson/Supervisor's List)

Booster

Job #	Group	Job Title
1	Beam Components & Instrumentation	BOOSTER RLRM - Calibrate all Integrator Modules
2	Beam Components & Instrumentation	E-6 Spare Test
3	Beam Components & Instrumentation	Special BPM's - Installation of Remote Gain Controls
4	Beam Components & Instrumentation	BOOSTER RLRM - TDR all Cables
51	Beam Components & Instrumentation	NSRL Instrumentation Checkout
52	Beam Components & Instrumentation	Chimpunk Calibrations and Recertification
53	Beam Components & Instrumentation	Booster Video - Checkout of Locations Prior to Beam
54	Beam Components & Instrumentation	LTB Harp Checkout - Motion Control Signal Testing
55	Beam Components & Instrumentation	BTA Harp Checkout - Motion Control Signal Testing
56	Beam Components & Instrumentation	Inspect and Test Special BPM's in BOOSTER Ring
57	Beam Components & Instrumentation	BTA Foil Stripper - Full Checkout Before Operations
58	Beam Components & Instrumentation	LTB Foil Stripper - Full Checkout Prior to Beam
59	Beam Components & Instrumentation	E3 Tunemeter PUE's - Investigate Signal Problems
11	Beam Components & Instrumentation	EBIS Diagnostics - Checkout Prior to Beam
14	Beam Components & Instrumentation	BOOSTER RLRM - Replace Remaining Helix Boots and Checkout of Argon System
61	Beam Components & Instrumentation	CAD Injectors Framgrabber Upgrade - Install Video Mux Cards in Hub Room
62	Beam Components & Instrumentation	BOOSTER Wall Current Monitors - Inspections
63	Beam Components & Instrumentation	BOOSTER RLRM System - Electronics Troubleshooting and Repairs
64	Beam Components & Instrumentation	BOOSTER - Instrumentation Checkout Prior to Beam
352	Beam Components & Instrumentation	Instrumentation Systems Equipment- Inspect Fan Trays & Repair/Replace as Necessary
353	Beam Components & Instrumentation	Instrumentation Systems Equipment- Replace Rack Blower Air Filters(Fiberglass Type)
65	Beam Components & Instrumentation	BTA 060 Collimator- Full System Checkout - Motion/Bias/Actuator
66	Beam Components & Instrumentation	BOOSTER Special PUE's- Installation of Individual Gain Controls
411	Controls	Reboot ebis PS fecs with new version of qfsWatch alarming software
18	Controls	Repair Fiber Chassis with fan faults and change filters if needed
406	Controls	Database Server Host Switch over from SUN to Linux
412	Power Supply (Booster/AGS)	Investigate PS-IICD buffer output signals
413	Power Supply (Booster/AGS)	Replace power supply chassis used for BM/MS Firing Buckets
414	Power Supply (Booster/AGS)	BOOSTER D6 POWER SUPPLY
67	Power Supply (Booster/AGS)	Booster Main Magnet Power Supply
68	Access Controls	Replace failing Magnecraft relays
32	Access Controls	Remove unused OPTO boards
415	Access Controls	Booster Access Controls
69	Access Controls	Booster Relay Maintenance
70	Access Controls	Jumpers for ETB
71	Access Controls	Access Controls Live Tests
72	Access Controls	Recertification of Booster
73	Access Controls	Install portions of the new Booster access system
74	Vacuum	TROUBLESHOOT D-3 TC GAUGE

RHIC Beam Dump Upgrade

Dump Window SST to Ti & Change Shape

Thicker Dump Beam Tube

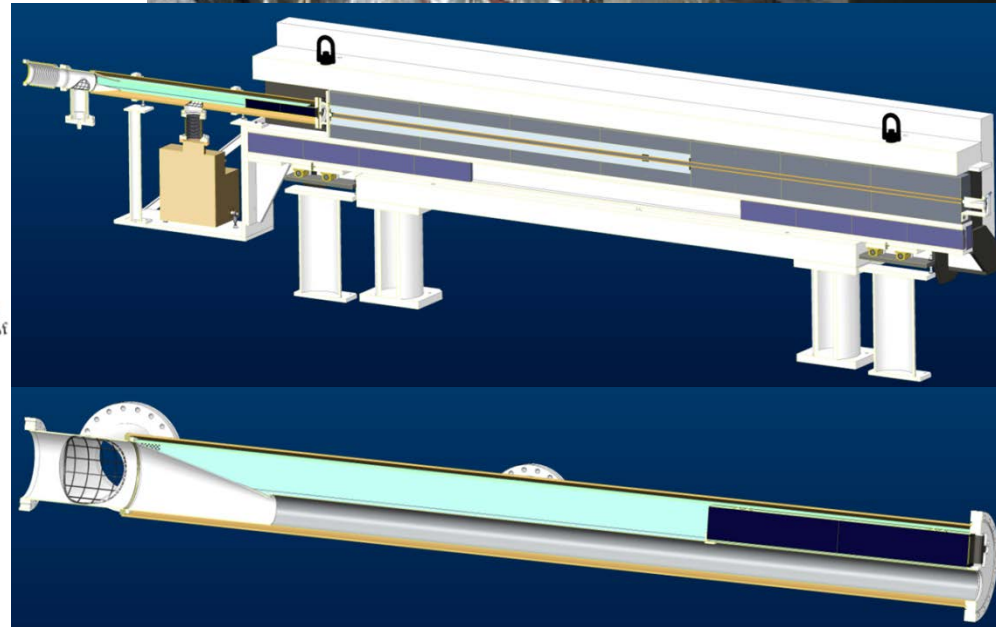
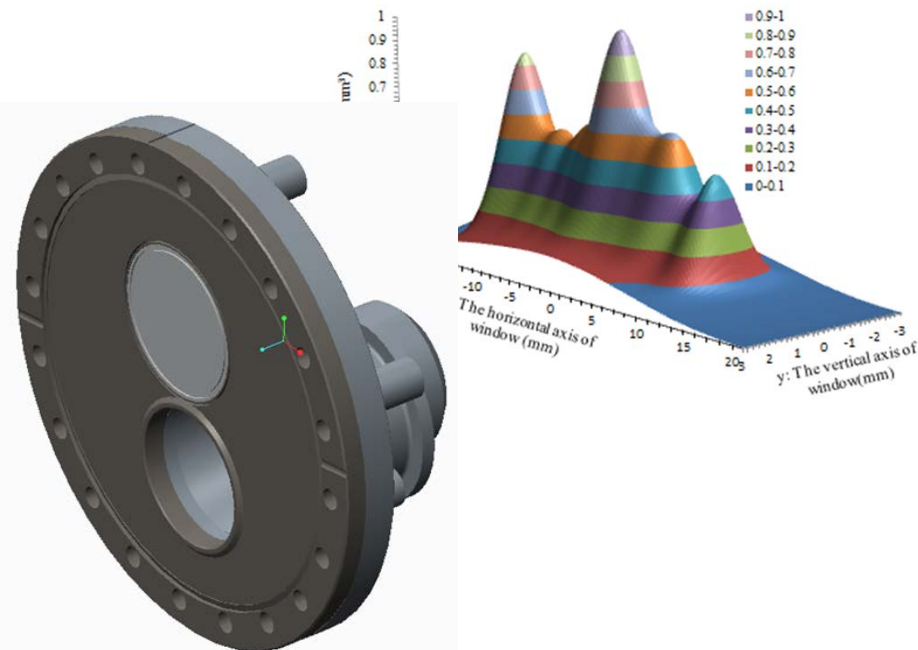
New Carbon/Carbon, new CC chamber

Eliminate Gap in beam tube

Improve vacuum pumping

NEG coat dump chamber

Issues: Parts in fabrication, bonded SS/Ti flange



RHIC Kicker Upgrade

Kicker current = 18kA
PFN Voltage 27Kv,
B=3Gauss

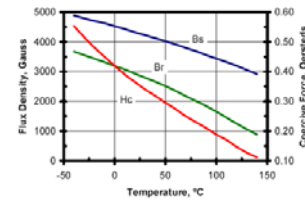
Ferrite beam heating problem:

- New ferrite CD10 – Ferrite delivery 9/31/14
- New thicker/longer eddy current strips 9/31/14
- Fluid cooling system designed
- Yellow kickers removed, blue started.

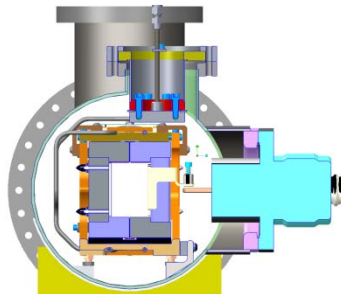
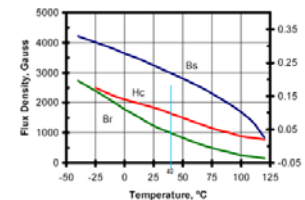
Issues: Fabrication fluid cooling plates



CMD10 BH Loop Parameters
BH Loop Parameters vs. Temperature



CMD 5005 BH Loop Parameters
BH Loop Parameters vs. Temperature

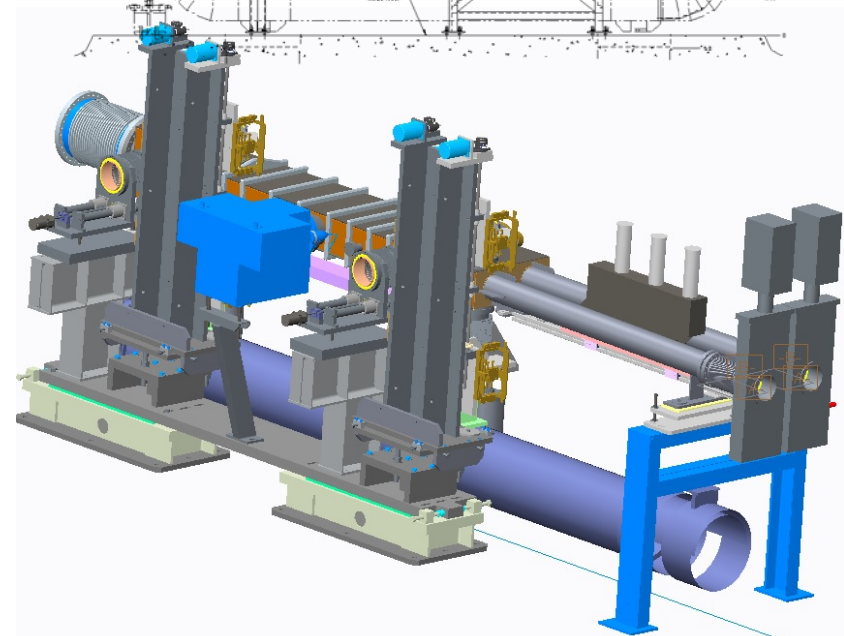
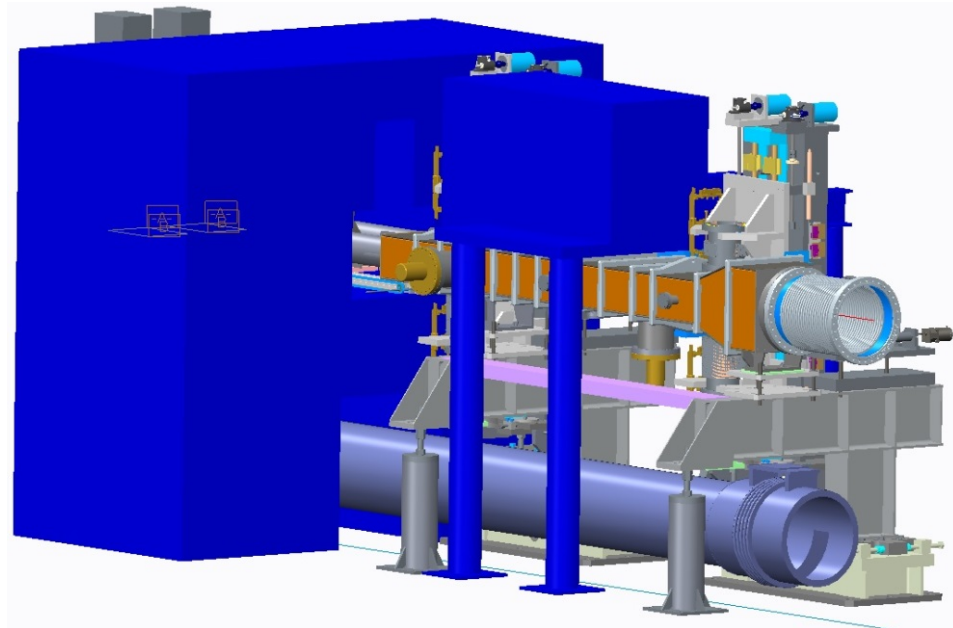
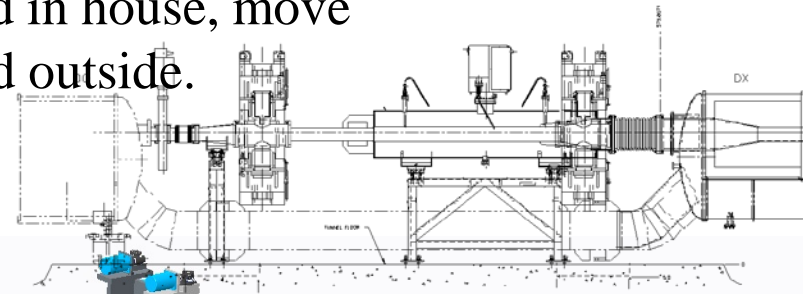
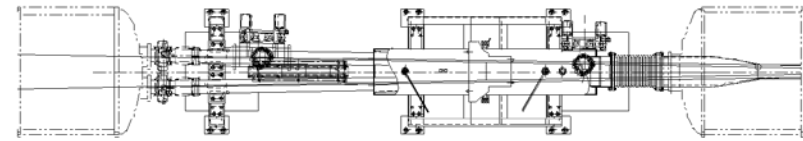


Roman Pots



Move Roman pots from Q3-Q4 to DX-DO
Removed 2013/2014 shutdown/maintenance
Need new DX-DO chambers
Need new stand for DX shift
Need revised shielding design

Issues: Chamber being fabricated in house, move shielding, stands being fabricated outside.



56 MHz Cavity HOM

Add, modify, or replace existing HOM due to quenching.

Issues:

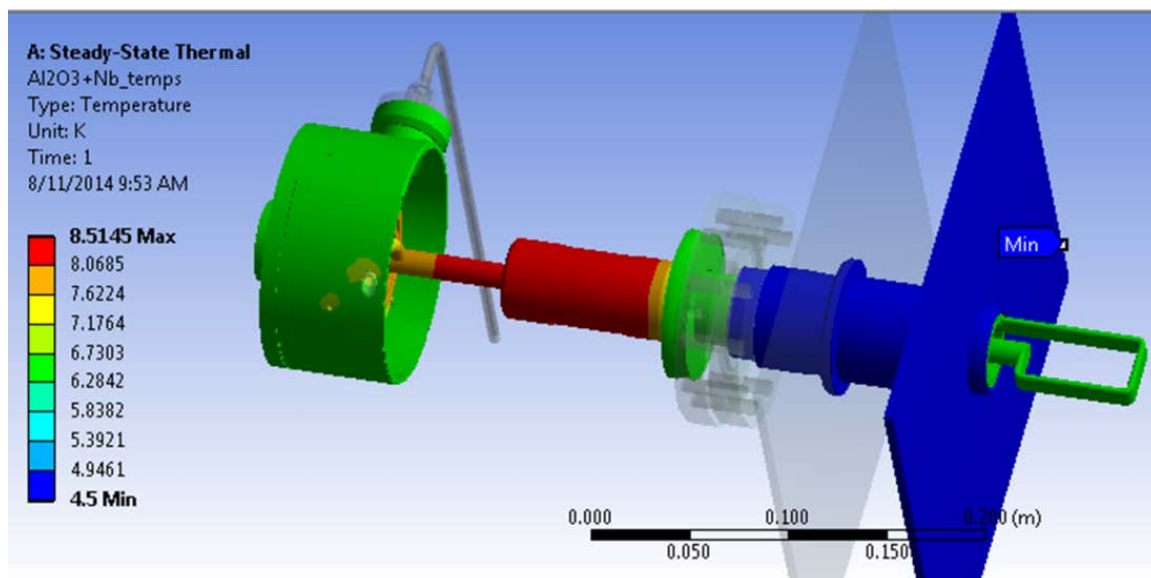
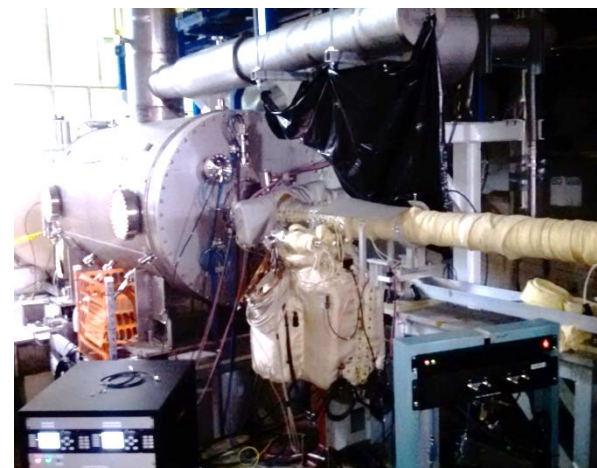
Will a second HOM be available for installation?

Should the first HOM be moved?

Is the present design acceptable? Braze joint heating.

Can a revised design be built in time?

Do we need an HOM?

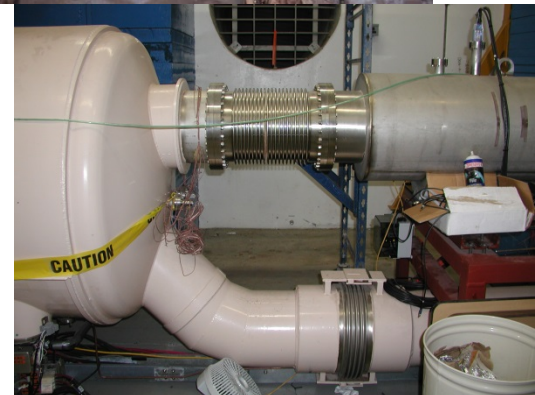
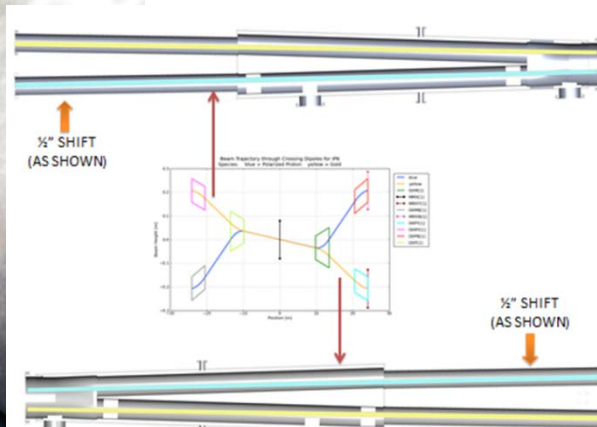
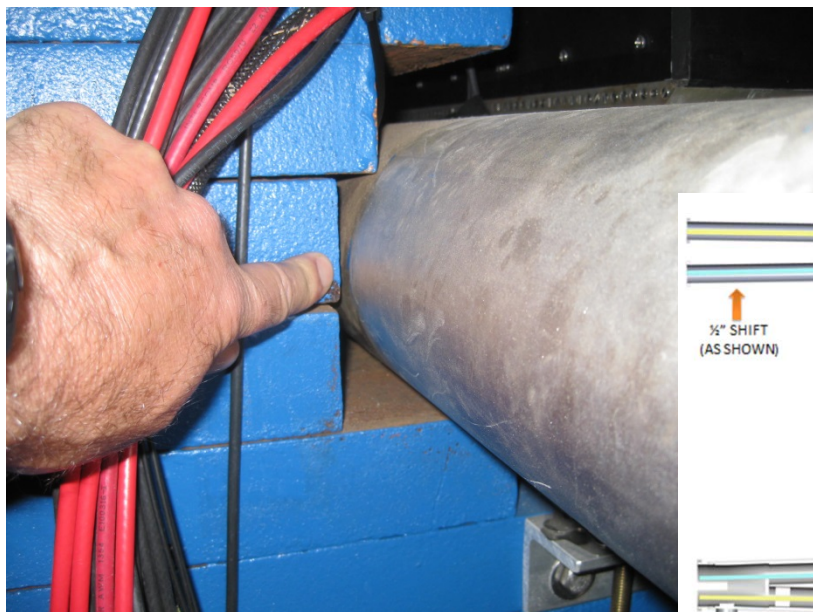


DX Magnet Shift for P-Au

7/17/2013

- DX magnets at IP 6 & 8 will be radially shifted by ~2cm. The direction of the DX magnet shift is defined in slide #7.
- The dual beam pipes between DX and DO also need to be radially shifted/tilted to yield more radial room to recover the acceptance of ZDC's.
- For non-colliding IPs, there is only $\sim 4.7/\sigma$ clearance from the wall of the DX magnet for a $10/\pi$ mm-mrad beam at p injection. Smaller than what was observed in the latest DX aperture scan with proton beam at 23 GeV.

Issues: Shielding at STAR and PHENIX, lateral adjustment of DX/DO vacuum chamber stand, restraints on .



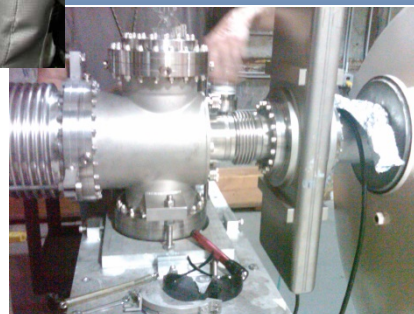
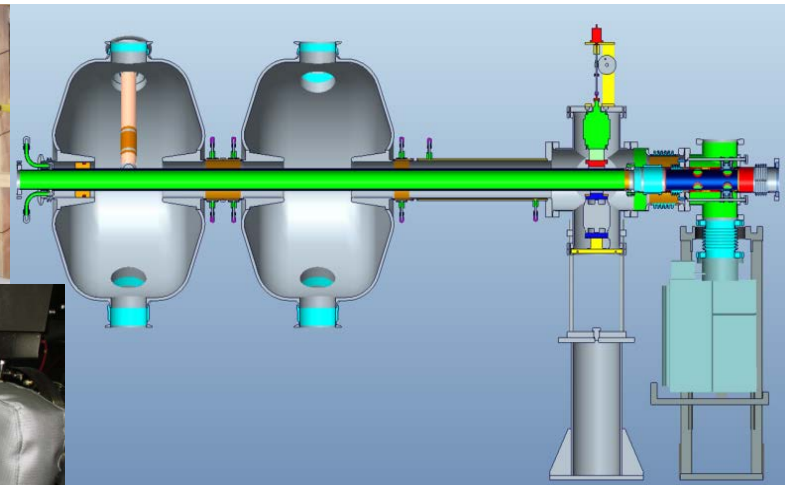
DX Magnet Shift for P-Au

7/31/2014

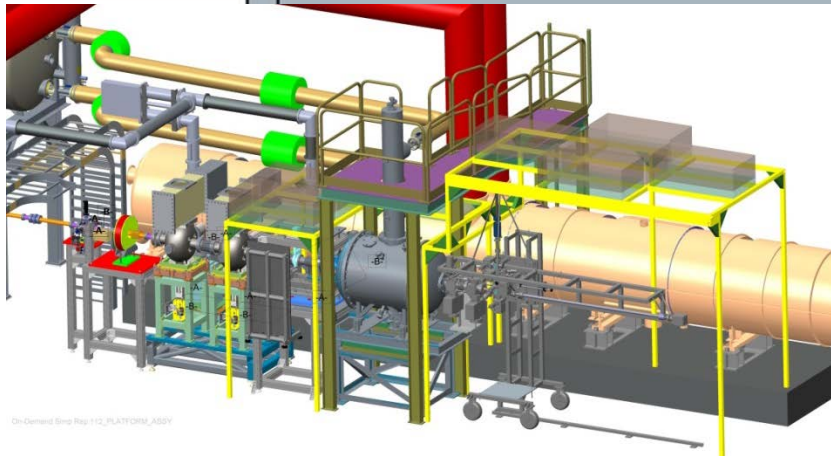
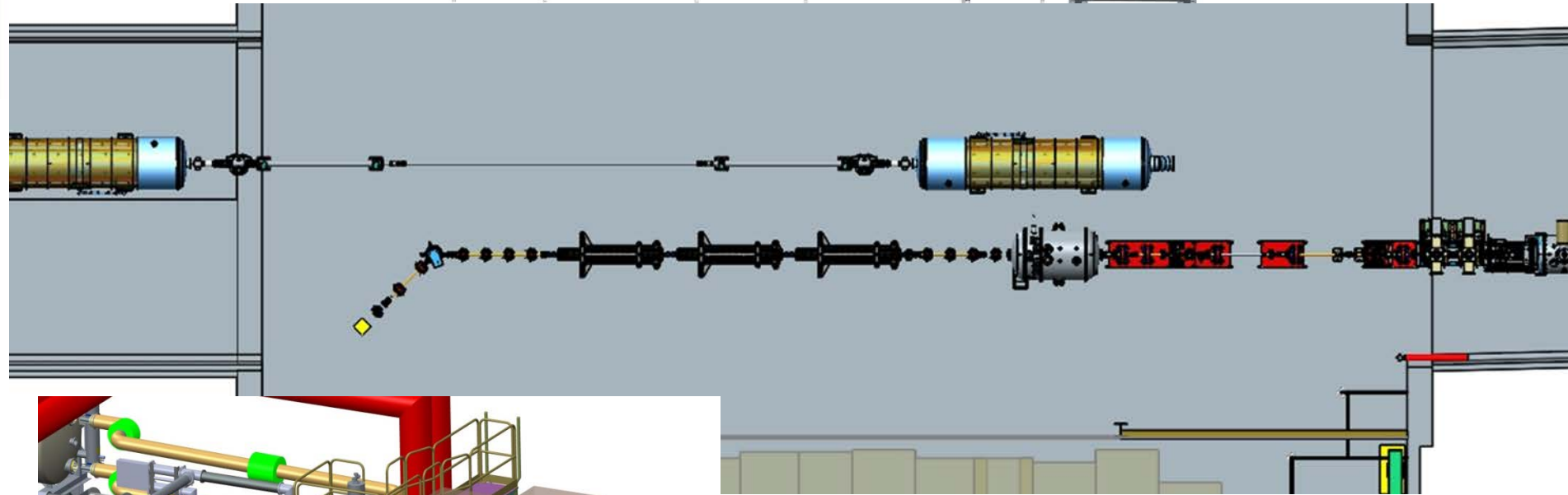
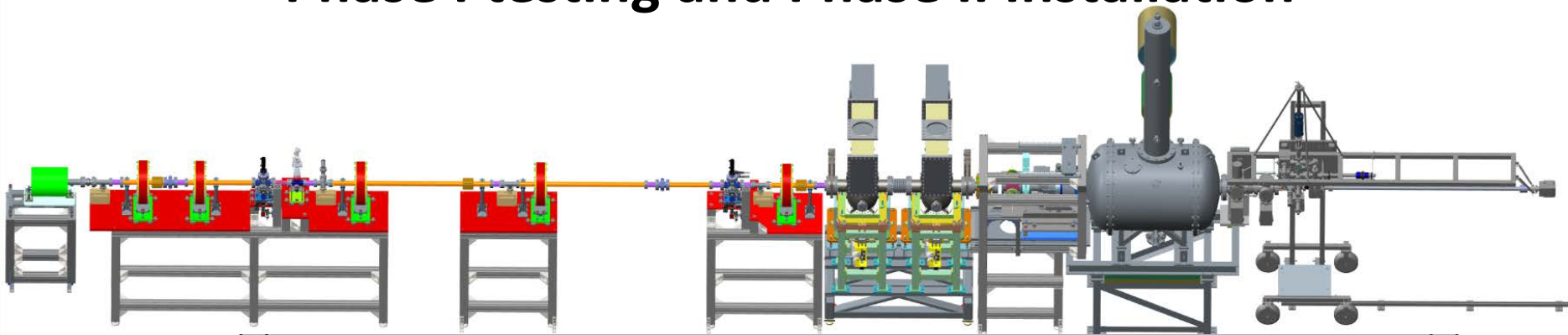
- DX magnets in IR6 and 8 need to be moved by 25 mm. DX magnets in IR2, 4, 10 and 12 need to be moved by 20 mm. The movement is horizontally towards the Yellow beamline.
- The amount of movement increased because the more realistic emittance numbers are used for calculation. If the increase is a problem, let me know.
- IR 2 and 4 magnets most likely will be moved warm. Decision will come out soon. **IR 6, 8, 10, and 12 DX magnets will be moved between pp and p-Au.**

Issues: Moved between pp and p-Au, Limiting apertures in IP and small bellows – AC dipoles and 9 MHz.

Sect or	DX Magnet move by 25mm	Maximum possible move of DX-D0 Chamber	
		Inside	Outside
1	yes	5/8	5/8
2	yes	0.4	0.9
3	Can't be moved	0.9	0.4
4	Can't be moved	5/8	5/8
5	yes	5/8	5/8
6	yes	5/8	5/8
7	yes	0.5	5/8
8	yes	0.2	0.5
9	yes	0.5	5/8
10	yes	0.2	0.5
11	yes	0.4	0.9
12	yes	0.5	0.5



Phase I testing and Phase II Installation



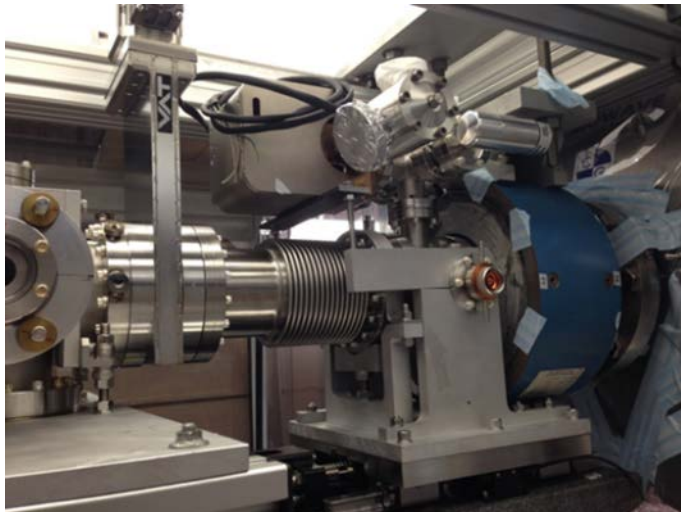
Phase I testing

CeC Phase I goals are (in order):

- Test 500 MHz Cavity – low power test done, high power tests next.
- Make 112 MHz SRF Cold and Test (cryogenics, water/blowout system, MPS, FPC w/tuner, ACS, RF . . . , RSC/ASSRC)
- Install the laser system and make e beam (Laser, RF timing, MPS, RSC/ASSRC)

Issues:

- 500 MHz cavity coax supply line cross talk. – retest
- Dewar testing 112 MHz SRF cavity – complete system.
- Cathode alignment
- Complete beam line installation



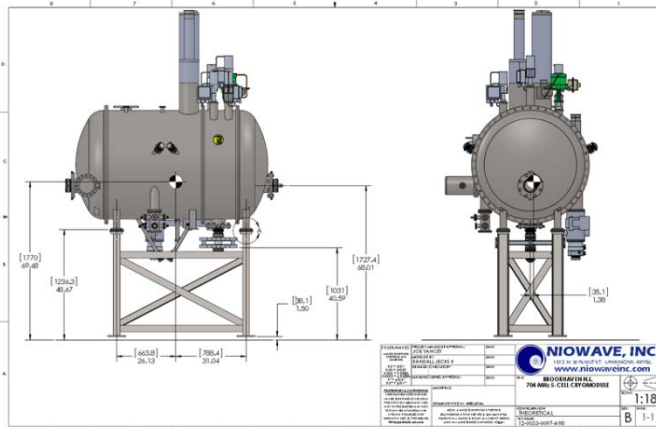
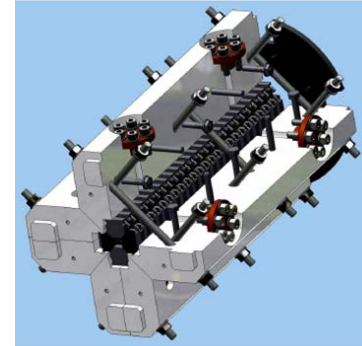
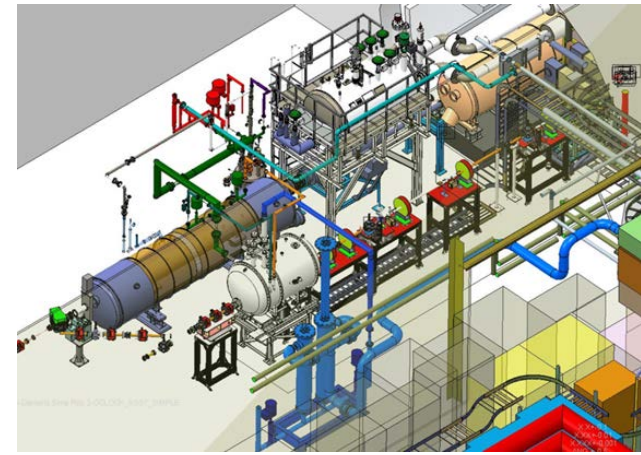
CeC Phase II Installation

CeC Phase II goals are (in order):

- Complete CeC beamline – gun to 8kW dump.
- Install 704 MHz 5 cell SRF cavity.
- Complete cryogenic system for the above.
- Install BNIP undulator magnets.
- Install magnets, beam diagnostics, beam dump, and vacuum chambers.

Issues:

- 704 MHz 5 cell SRF cavity delivery date 11/31/14.
- Cryogenic component delivery date 11/31/14.
- Three undulators magnets must be shipped from BNIP.
- Magnets, beam dump, vacuum chamber in fabrication.



RHIC Pre-Fire Beam Mask

Present plan use old stochastic cooling chambers

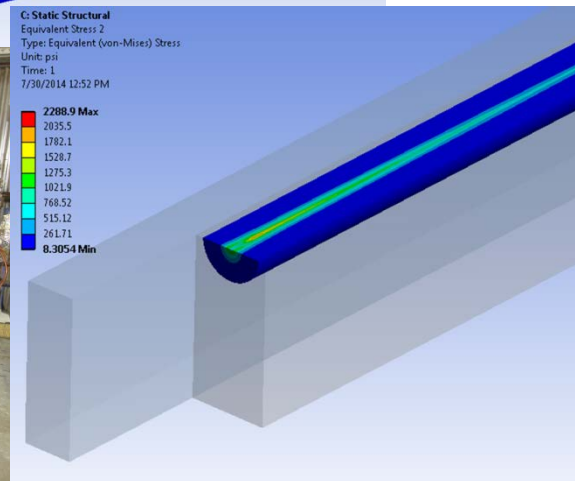
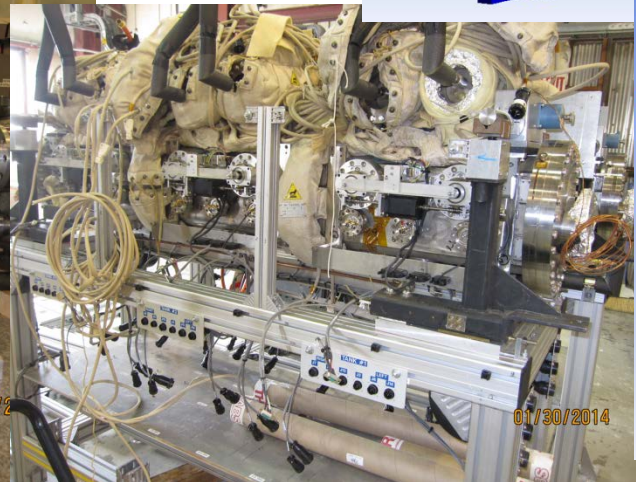
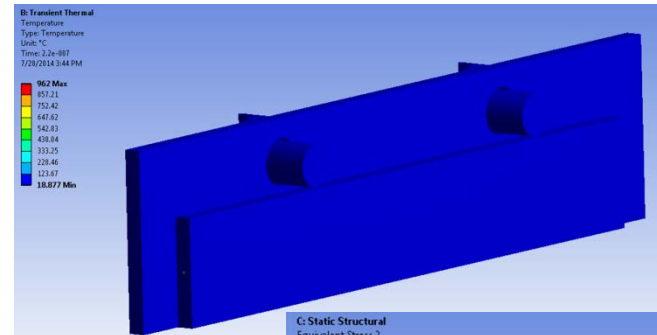
Thermal analysis complete

Need two types: one for gold (CC), one for protons (SST)

Drive system Aperture limitations being considered

Need new aperture transitions (5" to 3")

Need mounting plates and mask plates.



RHIC and AGS Polarimeter Modifications

?

Competing Priorities

1. ERL Gun and 5 cell commissioning
2. ERL Gun rebuild: new solenoid, new SC lead cooling, and cathode design
3. ERL Ta cathode assembly fabrication and installation
4. BLIP Target thermal stress calculations and documentation (Cullen)
5. LEReC project start: schedule and cost estimate, long lead item procurements
6. eRHIC – support for FFAG magnet development
7. eRHIC – FFAG beamline and SRF cavity design
8. RCMS magnet girder fabrication
9. Instrumentation Division engineering support
10. SPHENIX design support – SC solenoid test
11. New ATF
12. Gatling gun

