SAD 2023

Injector Upgrade

First two weeks (March 20 to March 31):

Survey and Alignment: as-founds phase1 and phase2 beamlines, west arc, 123 MeV dump, etc.,

Day 1 and 2, S&A gets right of way

CM warm up, pull utubes from ¼ CM

Vacuum Installation group: pull 123 MeV dump and west arc magnets, beamline

Gun Group overarching goals: gun swap, setup for bakeout, viewer/harp repair, isolate chopper from rest of phase2 beamline. Tasks in whatever order you like

* Make things safe (close valves, prevent them from opening, etc.,)
* Bring stuff to tunnel, craned in through hatch (clean room, new gun)
* Setup clean room over gun for clean disconnect, pull old gun, bring to test lab
* Install new gun, setup bakeout
* Add top hat to viewer near A2 + required mods to the harp to avoid collisions
* Add a blank off to downstream side of chopper2
* Pump down the choppers

CIS highlights for week #1...I've highlighted groups to be especially aware; please comment at Shawn's 3pm today if no-good...

* a) CIS stay out of **S&A** way Mon/Tue, **DC** (or CIS) can remove 2I gun magnets after they're gone, latest Wed 9am
* b) CIS will label/stage ~5 things in ISB on Mon/Tue for **INSTALL** to crane to tunnel on Tue/Wed
* c) CIS will make QE/laser retro checks on Mon/Tue after S&A done, need 4-laser **RF on**
* d) CIS disconnect IP's & vent VBV0I02-VBV0I07 (choppers) for repair 0I02 viewer/harp with **I&C**, Wed or Thu (**RF** lock out chopper RF by Tue)

I&C: start disconnecting phase2 beamline devices. Help make things safe re: vacuum and valves, ion pumps that need to be ON stay ON, ion pumps that need to be OFF are disconnected, valves that need to be CLOSED are closed and cannot be opened. Pulling digitels? Setup local ion pump power supplies in the tunnel where needed

Keith Cole indicated they would be removing the CAMAC cards and crate from rack B12.

DC Power: safe the magnet racks and start disconnecting magnets from phase2 beamline. Check cable labels. (note from Sarin below)

1. LOTO the injector related racks (4 in Inj. Service building, NL01 and the one in N.Access). The LOTO should be complete by ~10 a.m. that morning and entries will go into the various ATLIS. We have plenty of other systems to de-energize and LOTO that day, so we won't get back to Injector until later in the afternoon or Tuesday.
2. The next step that first week will be to de-energize the magnet stack that Install group will move out. (anticipated date for that?)
3. The plan is to stay out of the injector until S&A complete their task, and we get the okay from Carlos to disconnect the magnets close to the gun. At the same time disconnect the magnets near the Qtr cryo and the 1D stub (looks like about 16 magnets).

Magnet Measurement: remove MBO dipole magnet and take back to Magnet Measurement for mapping (work with SSG to make sure we don’t damage the hall probes)

SSG: MBO magnet, hall probes, supervise their removal

Poelker to remove magnet under SSG supervision, check fit up with new vacuum chamber, then deliver to Magnet Measurement

Remove the 1D spectrometer line so we have access to ¼ CM, bring stuff back to 1137 and assemble components on girder3

RF Group: safe the capture, the buncher, and the ¼ CM. Then…mostly work upstairs?

(Tomasz: Install all LLRF 3.0 systems as soon as removal of old LLRF hardware (IN02B13, IN02B14) is complete. Prepare IN02B15 rack for SSA amplifier – this is up to Dave Gelhaar and he may comment on this existing RF cables assessment/removal)

(David Gelhaar: Our intentions are to immediately begin removal of the RF components in 0L02 racks B12-B16.  Keith Cole indicated they would be removing the CAMAC cards and crate from rack B12.  Does this interfere with your plans?)

SRF/Vacuum Installation: setup the clean hoods on either side of quarter, close valves, disconnect ¼ CM from beamline.

SRF/Vacuum Installation can remove the downstream warm girder for parts cleaning, clean room assembly

Pull out the capture water skid