Topics

1. RF Separator status and pass change (Mike Spata, PD)
    1. Begin time: no earlier than 1630
    2. Injector setup: move D to A slit, change A to 249.5 MHz, change Wien to zero as polarized beam has come off the schedule entirely. Yan thinks this might reduce injector orbit drift.
    3. Move A to fifth pass. Dennis has prepared AT matching templates https://logbooks.jlab.org/entry/3948199
    4. Move C to fourth pass and change frequency to 500 MHz. Yan thinks this might reduce interception. Dennis has 8T templates, same elog. Ops should start with design 8T and Hall C optics and decide whether to match or simply put beam into the line and adjust a couple quads by hand.
2. RF fault rate and possible energy change. See text below.

Fault rates vs linac energy. For energies above 980, difference is what NL will lose to reach that fault rate. SL is at 7/shift.

980 (now) 33/shift
985 42/shift aka another 5 MeV/c loss
990 57/shift aka 10 MeV/c loss vs now
995 77/shift aka 15 MeV/c loss vs now

For the past seven days, RF trips were 6/hr and non-RF 5.9/hr. During that time there were 13.1 hours lost to 1008 RF trips per DTM. The other 5.5 hours were lost to other trips. 2000 trips total. If I assume one minute of data lost per trip, 33.33 hours. Looking at ABU for C over the same period, 99.2 of 168 hours.

Mike Spata suggested over the weekend looking at setting up the machine at ~785 MeV/linac. I used 787 MeV/linac below; 786.5 MeV needed to more exactly match Hall C fourth pass energy.

I'll guess that RF trips would decline to ~1.1 hours/week aka 12 hours benefit at 787 MeV/linac. I'm not sure the other 5.5 hours would change. At one minute per trip, 15 hours benefit. There are 45 physics days left in this run, call it 6.5 weeks. Depending on whether one uses 12 or 15 hours/week, 78 or 97 hours gained. Canonical setup time per Yves is 3-5 days, which makes it a wash at the last week's RF trip rate. If the NL rate doubles due to continued losses then the sooner the better.

~~One option to continue at 980 MeV/linac is a test I've wanted to run for a long time: Do the indium seals on the warm ceramic windows really need CWWT protection? Cavities 1L10-8, 1L15-1 and 1L15-5 had IR cameras installed on waveguide sweeps but are still GSET zero due to CWWT trips. Should the trip voltage be set to zero or something close to that? A failed indium seal on warm ceramic window would force linac energy change. 1L10 and 1L15 are being removed for rework during the SAD.~~ ***I can also turn cavities and neutron radiation back up. Check phase effects***

~~Energies with set up to provide Hall C ~7938 MeV at fifth pass.~~ Hall A at 9.9 GeV beginning 1/26/22.
~~88.8/787/787~~
~~pass 1 1663~~
~~pass 2 3236~~
~~pass 3 4809~~
~~pass 4 6379~~
~~pass 5 7944 vs 7938 desired, so 786.5 preferred over 787.~~