

SANE Short Term Run Plan – Fri. 3/13 eve to Sat. 3/14 owl/day/eve

RUN PLAN (SAVE previous run plans in the Run Plans binder)

Fri. 3/13 eve to Sat. 3/14 owl/day/eve. Opportunistic accesses: when switching targets, during anneals (check with the target experts) or to delay or move up anneal times to avoid annealing between midnight and 6:00 AM. Keep < 30 min. long if possible.

HMS: it has been set HMS to new kinematics.

BEAM (for production runs):

Current : **85 to 105 nA**

- check that the **SR is ON** and configured for *20 mm diameter, 4.7 GeV beam.*
Wavetek generators Preset 5: spiral = 1.16 V; circles 1 & 2 = 1.10 V
- **fast raster 1 x 1 mm**
beam at **x = 0.0** (+/- 0.1), **y = 1. mm on BPM 3H00A;**
x = -1.0 (+/-0.1), **y = 1. mm on BPM 3H00B**

DATA:

HMS: check that it is set at 3.2 GeV, 20.2°, electrons.

Make sure all detectors are ON, LED's off and retracted, prescale factors and trigger type correct, etc. before starting

1. **TURN OFF SLOW RASTER.** Take two 1h long runs *with the nose empty.*
2. Tell MCC that you are going to **TURN SLOW RASTER BACK ON.** Turn the NIM crate switch on first, then turn on the outputs of the three Wavetek generators and ramp them up to their settings: spiral 1.16 V, circles 1.10 V. Then recall Preset 5 on all three to ensure that the settings are correct.
3. Put the 10 mm hole in the beam. Ask for 70 nA.
 - Check that the beam is still centered in the vertical direction with the settings given above by looking at the slow raster y vs x ADC plot (MCC could not restore the original BPM Y settings A=- 0.6, B=0.7). The new settings, on a nearly flat vertical orbit, should give a position at the target within 0.6 mm of the previous ones. If the hole does not look centered move the target to adjust the encoder to center the hole.
 - *Compare with hole raster plot of hclog entry 178807* (this plot is upside down, and reversed left with right).
 - The BPM X settings should be OK. If the hole looks off center on the ADC plot, ask MCC to steer the beam left or right, as needed, but don't steer the beam in X more than 1.5 mm in either direction.

- Ask MCC to turn the beam OFF and move to the the Bottom target. Ask for 70 nA and check centering of the beam on the target by looking at the slow raster y vs x ADC plot. Watch for the target cup rims showing as bright areas on the raster ADC plot.
- Take data with BOTTOM target **POSITIVE** polarization.
- If the polarization rises *above 60% in ≤ 30 min*, ask for **90 nA**, take ~ 1 h long runs. If the polarization continues to increase with beam, ask for **100 nA**, but reduce the current back to **90 nA** once the *maximum* polarization is attained. When the polarization is around 62% take data at **105 nA**. Continue with 1 h runs until the polarization is at ~ 0.75 of its maximum value or 60%, **whichever is higher**. Move to the BOTTOM target.
- If the polarization takes *more than 30 min to get to 50%*, it can/will improve with beam. Ask for **105 nA** and start taking data.
 - If the polarization increases with beam continue at 105 nA for up to one hour after the polarization starts dropping, then *take data at 90 nA* until the polarization drops below 60%.
 - If the polarization does not increase after 2 h of beam, move to the BOTTOM target.
- If the polarization rises quickly but it does not get significantly above 70%, and it starts dropping as soon as beam is turned on, it may have been underannealed. Take data at **85 nA**. When the polarization is down to around 62% take data at **95 nA**. Move to the BOTTOM target when the polarization drops below 60%.
- Take data with TOP target **NEGATIVE** polarization.
- Follow the guidelines for the BOTTOM target . Anneal when the polarization is at the low limits indicated on the guidelines.

ANNEAL

1. Target experts will conduct the anneal.
2. Put C target in beam to help boiling off He in the nose. Ask for 120 nA. Take data while the nose is emptying (C+He). *Turn the beam off when the nose is empty, to start anneal.*
3. Target experts will finish the anneal.
4. When there is LHe back in the nose, ask for 120 nA and take a $\frac{1}{2}$ h long run with the C target with He (C+He). Take another C+He $\frac{1}{2}$ h run with HMS cosmics trigger (3/ 4) to check the HMS efficiency. Restore the HMS normal trigger after the run.