SANE Short Term Run Plan – Sat. 2/28 day/eve – Sun. 3/1 owl

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

Sat. 2/28 day/eve to Sun. 3/1 owl. 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.

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* as explained in hclog entry **174258** spiral: 1.16 V; circles 1 & 2: 1.10 V
- **fast raster 1 x 1 mm**
  beam at **x = -2.66, y = 0.06 mm on BPM 3H00A;**
  x = -3.35, y = 0.62 mm on BPM 3H00B (*weighted averages of runs in hclog entry* 174505)

DATA:

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

- Put the 10 mm hole in the beam. Take 100k events at 70 nA. Check the raster ADC plot and calibrate the raster size as discussed in hclog entry 177554

- Put the C target in the beam and take data at 120 nA. Watch the BigCal rate and the target nose He level: When the nose is empty (rate will drop by ~ 20%) take two ½ hour long runs on C. Thake a third ½ h run with HMS cosmics (¾) trigger to check the efficiency

- Next do a Moller measurement

  - Put the empty target (cross-hairs) in the beam

    - Before asking for beam **turn OFF the slow raster** using the module labeled SR SWITCH in rack 3HC014 (middle left side) in the electronics room. Tell MCC that the SR is off, they need to know for their FSD limits.

    - Keep the beam current **below 200 nA**

HMS: set central momentum to 3.5852 GeV, 22.3°, protons, while Moller is ongoing

- after the Moller **remember to turn the SR back ON!** Tell MCC the SR is back on.

- Use the calibration with the 10 mm hole to set the raster to 20 mm diameter. Take a short cross-hairs run at 90 nA(< 100 k) to check that the cup side walls aren't visible at the edges of the raster

- Take data with the TOP target with **POSITIVE** polarization. This is new ammonia material, first time in beam. Watch the polarization rate of increase. Wait up to 30 min. from the start of polarizing:

- (Most likely scenario) 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**.

- If it 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, *anneal*.

- If the polarization rises quickly but it does not get significantly above 70%, and it starts dropping as soon as beam is turned on, take data at **85 nA.** When the polarization is around 62% take data at **95 nA**. Anneal when the polarization drops below 60%.

ANNEAL

1. Target experts will conduct the anneal.

2. Put C target in beam to help boiling off He in the nose. Ask for 150 nA. Take a 20 min run *AFTER the nose is empty. Watch the HMS or BigCal rates: the nose will be empty when the rates stop changing after dropping, start the run then.*

3. Target experts will finish the anneal.