SANE Short Term Run Plan – Thurs. 2/26 eve – Fri. 2/27 owl/day

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

Thurs. 2/26 eve to Fri. 2/27 day. 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:

HMS: set central momentum to 2.2 GeV, 16°, electrons.

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

- Ask for 65 nA. Check target and beam centering with cross hairs target. Take a short run (<10 min) and look at the slow raster ADC plot. The cross hairs should look reasonably centered (within 1 mm) in the vertical and horizontal, and the rim of the cup should not be visible at the edges of the raster.
- If there is a significant (>1.5 mm = 0.060 encoder units) mismatch in the vertical direction between the encoder setting and the cross hairs plot, or the rim of the target cup is clearly visible at the top or bottom of the raster plot, adjust the target position by a small amount ($\leq$1.5mm).
- If the cross hairs look off center in the horizontal, or the rim is visible on the left or right, ask MCC to move the beam by –0.5 or +0.5 mm on BPM 3H00B. *Do NOT move the beam more than +/-0.5 mm from the settings shown above.* Moving the beam to a more negative *x* position is the more likely option.

- Take data with the BOTTOM target with **POSITIVE** polarization. The ammonia is Watch the polarization rate of increase. Wait up to 30 min. from the start of polarizing:
- 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, switch to TOP target.

- 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 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**. Switch to TOP target when the polarization drops below 60%.

- Take data with the TOP target with **POSITIVE** polarization, **95 nA,** until polarization is at ~ 0.75 of its maximum value. Follow the guidelines on beam current for the BOTTOM target

ANNEAL

1. Target experts will conduct the anneal.

2. Put C target in beam to help boiling off He in the nose. Take a ½ h 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. Put the empty target (cross-hairs) in the beam for Moller

4. After the anneal we will do a Moller measurement

  - 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**

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

5. Once the Moller is complete and there is LHe in the nose, take a ½ h run with the EMPTY target with He and another ½ h long run with the C target with He.