MiniBooNE Oil Attenuation Testing Procedure

Emptying Oil from Sample Tube

- ▷ Place sample tube on workbench, securing mineral oil bubbler in beaker clamp.
- ▷ Loosen black compression union and separate, leaving the larger portion attached to the short teflon stem which is attached to the bubbler. Don't lose the washer!
- ▷ Empty oil from bubbler into waste drum, and set bubbler aside.
- ▷ Remove compression cap from other end of sample tube, making sure to lift that end up as you remove the cap (so oil doesn't spill out).
- ▷ Empty contents of sample tube back into appropriately marked gallon jug if one is available, otherwise empty into waste drum.

Rinsing and Filling Sample Tube

Rinsing

- ▷ Place emptied sample tube on workbench with bubbler not attached.
- ▷ Attach funnel and black tubing to white teflon stem on the other end of the sample tube using the compression union (which should be hand-tightened).
- ▷ Funnel a small amount (200-300 mL) of the oil you will be using into the sample tube.
- ▷ Unhook the black tubing from the white teflon stem, swish (yes, that's the technical term) the oil around and back and forth in the sample tube a few times.
- ▷ Empty contents into waste drum.
- ▷ Repeat process once.

Filling

- ▷ Place emptied sample tube on workbench, re-attaching mineral oil bubbler if necessary, and securing in beaker clamp.
- ▷ At other end of sample tube, attach funnel and black tubing to white teflon stem using the compression union. This does **not** need to be tightened with a wrench – hand tightening is fine.
- ▷ Funnel oil into the sample tube until it starts to spill into the bubbler. Make sure there are no air bubbles remaining in the sample tube.
- ▷ Remove funnel and black tubing, and re-attach compression cap to white teflon stem.

- ▷ Place sample tube into coffin and put bubbler into plastic bracket affixed to the inside of the coffin. Use the metal spacer to position the sample tube at the correct distance from the end of the coffin near the monochromator. The white teflon fill stem should be vertical to ensure rotational consistency.
- ▷ Close coffin and allow sample tube to rest at least 12 hours before beginning attenuation tests.

Attenuation Tests

- ▷ Make sure coffin is securely closed. Turn on deuterium lamp and both Power Designs HV power supplies (AC on, then HV). Leave these on for at least 45 minutes to allow power supplies to warm up, and lamp to stabilize.
- ▷ Turn on power to pulser, NIM crate, and CAMAC crate. You may need to press "Stop" on the gate generator if the visual scaler begins counting when you turn on the power.
- ▷ Make sure the monochromator is at the wavelength at which you wish your scan to begin. If not, use `move ⟨initial wavelength⟩ ⟨desired wavelength⟩` to make the monochromator step to the desired wavelength.
- ▷ Update the file `/coffin2/run.log` to include the run you are about to start.
- ▷ Begin a run using the program `scan ⟨run number⟩ [⟨initial wavelength (default=3000)⟩ ⟨final wavelength (default=5000)⟩ ⟨step size (default=10)⟩]`.
- ▷ When the scan is finished, the monochromator will automatically move back to 3000 Angstroms, ready for the next run.