

# Lab Coordinator Cheat Sheet

## COUPP-2L SNOLAB Phase II Installation

- Move experiment, check leaks and operation
- Install Inner Vessel
- Fill with  $\text{CF}_3\text{I}$

## COUPP-2L SNOLAB Phase II Operations

- Run unattended

For questions or emergencies, call

Mike Crisler (630) 276-8705 cell  
or Jeter Hall (801) 735-7433 cell



This is our Bubble Chamber Pressure Vessel

It will be covered in insulation and water shielding during operation. It contains the inner vessel where superheated iodotrifluoromethane will detect nuclear recoils.

This is our Hydraulic Controls Cart

This unit manages the hydraulic pressure in our bubble chamber pressure vessel. You may observe slight movements of the stepping motor, coupler, and shaft. If it attempts to make a large pressure adjustment quickly, you may hear a loud screeching noise coming from the clutch in the coupling. We try to avoid that, but it happens. When the chamber expands, you'll hear a hiss of releasing compressed air. When it compresses you'll hear a short pneumatic "thump."



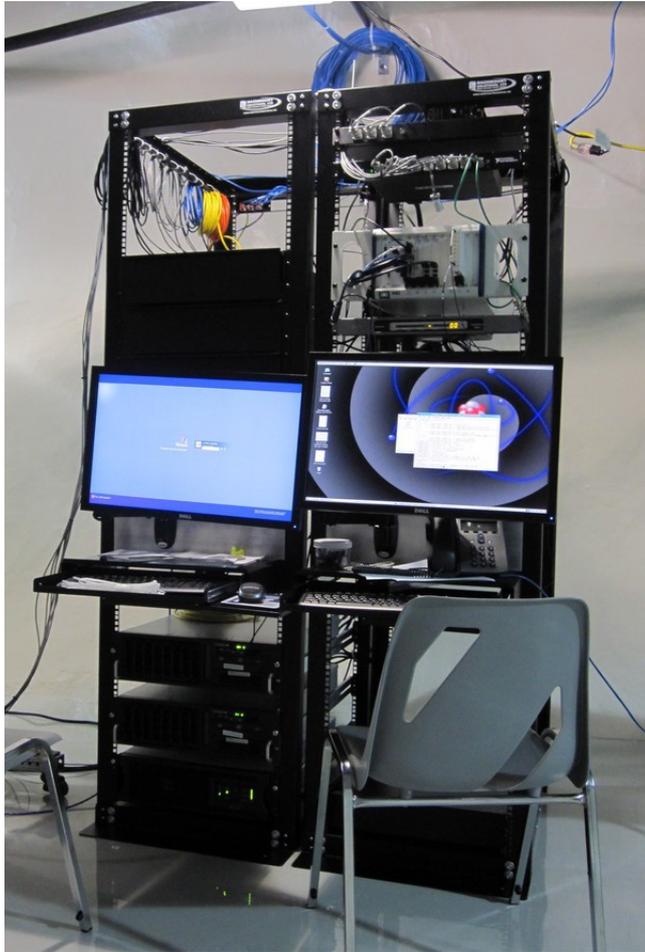


This is our NESLAB RTE-740 circulating heater/chiller

It circulates a 50/50 mixture of RO water and propylene glycol. If you hear it alarming, it is likely that the fluid in the bath is low. If you add water from the labeled jug to bring the level up to the indicator marks in the bath, then it will be happy again.

The NESLAB is the only part of our experiment not powered by the UPS. The UPS Off button will not power down the NESLAB.

Under computer control, the power button on the front of the unit may be overridden. If you need to turn off the NESLAB, unplug it or switch off it's breaker as per the Emergency Procedures.



This is our Data Acquisition Rack

The operations binder is located on the top left shelf.

The UPS is at the bottom left. There are two LINUX computers Left rack above the UPS, one National Instruments PXI chassis (right rack), and miscellaneous instrumentation readout boxes, mostly in the right hand rack.

To turn off the UPS, you either have to push the Emergency Stop button mounted next to the experiment, or crawl down and press the off button on the UPS itself.

## Leaks and Hazards

Under normal operation, COUPP will occasionally release a small volume of compressed air at the hydraulic cart. All other leaks are unwanted.

A continuous gas leak from near the hydraulic cart may be compressed nitrogen venting from the cylinder.

A gas leak from the pressure vessel, or a mixture of gas and glycol coming from the hydraulic system is a  $\text{CF}_3\text{I}$  leak. The area downwind of the leak should be evacuated for at least 5 minutes after the leak stops. Up to 500L of  $\text{CF}_3\text{I}$  gas may be released. At concentrations above 0.2% the gas may be mildly toxic. Once all the  $\text{CF}_3\text{I}$  is mixed at the air handlers, the area is safe to enter.

If you observe any clear liquid leaking out of the system, it will be contain propylene glycol. While it is non-toxic and has low volatility, propylene glycol will be absorbed through skin or by respiration. If a spill is discovered, consult the Glycol Spill Clean Up Procedure posted near the experiment, or in the COUPP Operations Binder. Stay at least 2m back from a large spill.