4. CF_3I Handling Procedure

This procedure covers filling or removing CF_3I from the COUPP 4-kg inner vessel at SNOLab. Risks associated with overexposure to CF_3I gas include skin rashes, eye irritation, irregular cardiac rythem if inhaled, and possibly depression of the nervous system. Vapour concentrations over 0.2% in air may cause acute effects. CF_3I handling is intended to be a closed system operation. A dangerous CF_3I can be prevented by careful leak checking.

The operational goal of CF_3I handling is to fill the inner vessel with a radioclean active medium, or to remove CF_3I during system decommissioning.

For all CF_3I handling, prior to handling,

1) Consult the appropriate CF_3I handling procedure and review the Emergency Procedure. Inform the Lab Coordinator that CF_3I handling is taking place, and the estimated times over which CF_3I handling will be performed.

2) Ensure that any non-isolatable plumbing, or other volume to be vented, has a volume less than 55mL. The CF_3I transfer line has a volume of 39mL.

3) Ensure that any external ports to the CF_3I system are closed. Check for leaks in the plumbing by pumping it down then checking for a rate of rise. Once you are assured that a leak of 25torr/min would have been spotted, CF_3I filling may proceed.

During CF_3I handling,

4) If liquid CF_3I is spilled, or more than 300mL of CF_3I at atmospheric pressure escape, do not touch or approach it. Close valves if safe and evacuate upwind while the CF_3I to evaporates and disperses. 5 minutes after the CF_3I has finished evaporating, the area should be safe to reenter. File an IIR.

After handling CF_3I,

5) Isolate the warm containers of CF_3I first. Wait 5 minutes, or until the line pressure has minimized, then isolate the cold container.

6) Vent the plumbing to air. Stand away from the stream of ejected gas.

7) Continue cleaning up the work area.