This document describes the general procedure for filling large stainless steel liquid nitrogen (LN\textsubscript{2}) dewars from the large external LN\textsubscript{2} tank located in the gas cylinder farm of the CAMD facility.

1. Always Wear Insulated Gloves and Protective Glasses or Goggles
2. Make sure all valves on the large LN\textsubscript{2} dewar are closed.
3. If the LN\textsubscript{2} dewar liquid line is attached to something, you must disconnect it before being able to move the dewar for filling. \textbf{Note}: For the large dewar supplying the cleanroom, disconnect the line running into the cleanroom, using the wrench supplied for this purpose. \textit{Please note that removal of the LN\textsubscript{2} dewar supplying the cleanroom is a task that requires two persons due to safety concerns in the small area available to maneuver the liquid nitrogen dewar.}
4. Roll the dewar to the external LN\textsubscript{2} tank and bring the brass adapter (if necessary) to connect the LN\textsubscript{2} hose to the tank.
5. Connect the metallic gray-colored hose of the external LN\textsubscript{2} tank to the "liquid line" of the dewar.
6. Open the "vent" valve on the portable dewar.
7. After opening the "vent" valve, then and only then open the "liquid line" valve.
8. Open the valve on the external LN\textsubscript{2} tank by raising the valve next to the external LN\textsubscript{2} source all the way up to fill the dewar. Nitrogen vapor should spew from the opened dewar "vent" valve as the dewar fills.
9. When the gauge on the dewar shows full (the marker reaches the top) and LN\textsubscript{2} drops begin to spew out of the "vent" valve, the portable dewar is full.
10. Filling normally takes about 30 minutes. \textbf{Dewars are not to be left unattended} during the fill procedure.
11. Follow the sequence of valve closure
   a. Close the valve of the external LN\textsubscript{2} tank first (i.e. large tank).
   b. Close the portable dewar "liquid line" valve second.
   c. Close the portable dewar "vent" valve last.
12. Vent the hose by opening the "vent" valve adjacent to the external LN\textsubscript{2} tank valve.

13. After venting is completed, disconnect the metallic gray-colored hose from the portable dewar.

14. Return the filled portable LN\textsubscript{2} dewar to the experimental hall.

15. If necessary, connect the liquid line of the portable dewar to the area to be filled with liquid nitrogen, (example: liquid LN\textsubscript{2} line to the penetration in the cleanroom which supplies the cleanroom evaporator).

Authorization: By the signatures affixed below, this policy is authorized by the CAMD Director, the CAMD Facility Manager and by the CAMD Safety Director.

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