



C_004: High-Pressure Liquid-Nitrogen Fill Station Operator Training, Certification, and Access Procedures

LLE maintains a high-pressure liquid-nitrogen (LN₂) filling station (80- to 120-psi delivery pressure) at the west end of LLE (Room 103), for filling of *pressurized* LN₂ storage and delivery containers. Use of the High-Pressure LN₂ Filling Station is limited to those individuals who have been trained and certified to properly operate the unit.

Operation of low-pressure, LN₂ tanks, including the 160-L tank adjacent to the high-pressure fill station, is covered in LLE's M_002 Compressed Gas Safety Training.

(A) Training and Certification of Fill Station Operators

The training and certification process is a “hands-on” process conducted by one of the LLE Chemical Hygiene Officers. A “certified” fill station operator is a person who has:

1. Successfully completed the LLE Mechanical Safety (M_001), Compressed Gas Safety (M_002), and Chemical Safety (C_001) training courses;
2. Received initial training from a Chemical Hygiene Officer in the safe operation of the fill station;
3. Conducted a minimum of two filling operations under the close supervision of either a Chemical Hygiene Officer or a previously certified fill station operator; and
4. Demonstrated proficiency in both operating the fill station and a working understanding of safety rules by conducting a filling operation unaided while being observed by a Chemical Hygiene Officer.

After successfully completing the certification and training process described above, the fill station operator trainee is added to the Certified High-Pressure LN₂ Fill Station Operator database, which is maintained by the LLE Safety Office. A current list of certified fill station operators is kept at the East Lobby Reception desk.

(B) Fill Station Access



A locking unit (*see photo, left*) is installed on the fill station controls to ensure that the fill station is only used by properly trained and certified personnel. The key is maintained by East Desk Reception and is available to those who have successfully completed this training and appear on the High-Pressure Liquid-Nitrogen Fill Station Certified Operator list.

Any individuals not on this list must contact a Chemical Hygiene Officer or a designated alternate to arrange for training and certification before operating the fill station.

NOTE: The key will NOT be released to any second parties—for example, telling receptionist “my supervisor sent me down to get the key for him/her” is NOT acceptable and such requests will not be honored.

1. High-Pressure LN₂ Filling Station access (0830–1700, weekdays)

- (a) The operator requests the key from the East Desk Receptionist, signs and dates the High-Pressure Liquid-Nitrogen Fill Station Key Log, and marks the “Key out” box.
- (b) The operator unlocks the filling station and proceeds with the filling operation.
- (c) After completion of the filling operation, the operator locks the filling station, immediately returns the key to the East Desk Receptionist, and marks the “Key returned” box on the log book (*see example below*).
- (d) In the event of an emergency or malfunctioning of the unit, the operator must evacuate the area and immediately contact the Chief Safety Officer, the Facility Manager, or a Chemical Hygiene Office

High-Pressure Liquid-Nitrogen Fill Station Key Log

Certified operators must sign the log when obtaining and returning the key for the High-Pressure LN₂ Filling Station to the Receptionist.

The Fill Station key is only to be released to individuals on the Certified Users List.

KEYS MUST BE RETURNED IMMEDIATELY AFTER USE, NO LATER THAN 1700 hours ON THE DAY THEY ARE SIGNED OUT. NO EXCEPTIONS.

Name	Date	Key out	Key returned
K. L. Marshall	9/2/2010	X	X

2. High-Pressure LN₂ Filling Station access (after-hours and weekends)

Access to the High-Pressure LN₂ Filling Station outside of normal working hours by certified operators is not permitted *except under certain specific mission-critical situations*. Certified operators with a critical need to operate the station after-hours must:

- Obtain **written** permission from both the Chief Safety Officer and a Chemical Hygiene Officer, specifying the nature and impact of the situation requiring after-hours operation of the station.
- A safety monitor, or “buddy” **MUST** be present during all fill operations. The person acting as the buddy must be named in the written request, and that person must verify that he or she will commit to being available during the fill process.
- Obtain a key from a Chemical Hygiene Officer. The Chemical Hygiene Officer will require the individual to sign and date a log sheet, indicating the date and time the key was checked out.
- Return the key in person to the Chemical Hygiene Officer at the first opportunity on the next regular working day. The Chemical Hygiene Officer will mark off on the log sheet that the key has been returned.