



Asphyxiation Near-Miss and Lessons Learned

Situation: EHS was notified of a potential leak from a liquid nitrogen tank located in a lab that was not accessible by building staff, EHS, or UNM PD. EHS and UNM PD responded to the scene and found the lab had no emergency contacts posted and therefore no party was reached for access. EHS and UNM PD decided to enter the lab without the owner as they were unknown. The respondents discussed the potential hazard of low oxygen levels in the lab due to leaking liquid nitrogen and the potential for oxygen displacement. To mitigate this hazard, the respondents agreed to leave the door open for a few minutes before going in. UNM PD was unable to directly access the lab with master keys, so the lab in question was accessed through an adjacent lab. UNM PD unlocked the door and left it open for five minutes to allow air into the room. UNM PD and EHS entered the room and found a liquid nitrogen tank that appeared to be in good condition. The tank was located within a large closet that was separated from the main lab by a sliding glass door. Although neither the UNM PD nor EHS personnel present experienced any symptoms of low oxygen levels, entering the space without knowing the oxygen concentration is considered a Near Miss.

The Good

- The respondents properly identified the possible asphyxiation hazard and took steps to mitigate it.
- The respondents reached out to the building manager and contacted to find the lab owner.

Suggestions for Improvement

- The lab did not have an emergency contact and the building manager did not know who the lab owner was. This led to a situation in which access to the lab was restricted. Emergency lab contacts should be posted outside all labs to enhance emergency response.
- The respondents did not have access to a gas meter which would have conclusively ruled out a low oxygen environment. Possible improvements include using a portable oxygen meter to rule out asphyxiation hazard or using a fan or other method to mechanically ventilate the space prior to entry.
- Despite having large quantities of liquid nitrogen that has the potential to displace oxygen, the lab was not equipped with an oxygen sensor. Labs with large quantities of liquid or compressed gases should have oxygen sensors and an emergency response plan for a low oxygen emergency.