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1. Did you know?

Liquefied Petroleum Gas (LPG) includes propane, butane, and butylenes used for heating, cooking, and fuel. Through the EHS web site you can review a Safe Operating Procedure (SOP), *Liquefied Petroleum Gas (LPG) Portable Cylinders*, which provides safe practices for general use and storage of portable LPG cylinders, in addition to specifics on inside and outside storage. The information within the SOP is based on National Fire Protection Association (NFPA) requirements, as administered by the State Fire Marshal's Office.

There are different storage and/or use requirements inside a building, based on room type/use: Research Labs, Teaching Labs and other rooms occupied by the public, General Use classrooms, Dining Rooms and Commercial Food Service, Shops/Warehouses/and non-public buildings. If you are using and/or storing LPG in one of these areas, be sure to review the requirements. Inside storage and/or use may not be allowed.

For cylinders not allowed inside a building, storage outside is allowed, provided such storage meets a number of criteria as outlined within the SOP. Here are the requirements for LPG portable cylinder storage outside of a building:

- Extra cylinders that are not allowed inside a building must be stored outside in a vented and locked cage, or other approved design. Shading is preferred.
- The cage must be at least 5' from any building opening, at least 10' from weeds and other combustibles, and must be protected from possible vehicle damage, theft, or pilfering.
- Storage must be at least 20 foot from any vehicular, equipment (tractor), or other type fuel dispenser.
- A placard should be attached to the cage to indicate no smoking, flame, or matches within 25 ft. of the cage.

The SOP contains more information on general storage procedures and general use requirements.

Resources:

Liquefied Petroleum Gas (LPG) Portable Cylinders SOP http://ehs.unl.edu/sop/s-lpg_cylinder.pdf

2. Safety and Wellness Opportunity

The Chancellor's University Safety Committee is planning a combination safety and wellness fair on October 19, 2010. Faculty, staff, affiliated personnel, and interested students are invited to attend short presentations and view interactive exhibits during this day-long event. The event is designed to enhance personal safety, wellness and quality of life in the workplace and at home. The wide variety of topics will ensure there truly is 'something for everyone.' Mark your calendars to reserve October 19th, between 9 a.m. and 3:00 p.m., to visit the City Campus Union Centennial Room.

Planning is in progress and further details will be posted on the UNL Calendar, the Environmental Health and Safety web site (<http://ehs.unl.edu/committees/#cusc>) and the Chancellor's Wellness Initiative web site (<http://wellness.unl.edu/>).

Seize the opportunity to be part of this important campus event! Volunteer to help by contacting Christine Cary, Fair Coordinator, by phone (402-472-5485) or email (ccary@nebraska.edu).

3. Dewatering & the Environment

Dewatering is a term commonly used for pumping rain water from construction excavations and pits. It is also used to describe pumping water from wells in order to lower or control groundwater. Use of sumps in building basements to control water intrusion is another common example of dewatering. What all of these actions have in common is that the discharges can contain pollutants. In the case of excavations, the most common pollutant is sediment (i.e. mud). With regard to building sumps, sediment remains a concern but petroleum from old releases from underground storage tanks is another potential pollutant.

Because of the potential pollutants, the discharges are regulated under the Clean Water Act. The discharges are regulated regardless of the volume pumped and whether the discharge is directly into a storm sewer or if it is onto the ground but never reaches a storm sewer. In order to comply with the regulations, all dewatering must be done in compliance with a permit with notification made to the State of Nebraska. The permit requires sampling and analysis for pollutants, recordkeeping of the results of the analyses, volume of water pumped, as well as other characteristics such as color and odor.

Note that there are instances where discharges can be made to the sanitary sewer. For example, water from carpeting or floors in a building where there was a leaking water line could be discharged to the sanitary sewer. These discharges do not require a dewatering permit. Water from foundation drains, wells and excavations is not permitted to be discharged to the sanitary sewer since the volume of water can overload the system. If there were an instance when building flooding required discharge to the ground or storm sewer, a dewatering permit would be required.

For dewatering operations done by contractors, the contractor is responsible for obtaining the permit and compliance with it. UNL Project Managers are responsible for general oversight of compliance. What this usually entails is assuring that contractors obtain the permit and appear to be complying with it (i.e. are not pumping muddy water to the storm sewer).

If dewatering is conducted by UNL staff, contact EHS prior to discharging so that EHS can collect the required samples and obtain the information necessary for the permit.

At UNL, foundation drains are covered under one general permit. Contact EHS if new foundation drains are planned as part of new construction or renovation so that EHS can update the permit.

Contact Dan Olsen at EHS, 402-472-4928 or dolsen2@unl.edu, if you have any questions.

Resources:

Construction Activities Environmental Protection and Compliance SOP
http://ehs.unl.edu/sop/s-construction_activities_EP_&_compliance.pdf

Construction Site NEPDES Permits SOP
http://ehs.unl.edu/sop/s-construction_site%20npdes_permits.pdf

4. Forklift/PIT

Forklift/Powered Industrial Truck (PIT) operators must be trained, evaluated, and certified before independently operating a PIT. The term *Powered Industrial Truck (PIT)* refers to a motorized, power-driven vehicle used to carry, push, pull, lift, stack, or tier material. This definition generally includes vehicles that are commonly referred to as high lift trucks, counterbalanced trucks, cantilever trucks, rider trucks, forklift trucks, high lift platform trucks; low lift trucks, low lift platform trucks; *motorized* hand trucks; narrow aisle rider trucks; high lift order picker rider trucks; and counterbalanced front/side loader lift trucks.

There are three levels of responsibility within this regulation. Some responsibilities for supervisors are to insure that all employees under their direction who are designated to operate a PIT are trained, evaluated, and certified prior to operation of the equipment, to notify EHS of new equipment/attachments and notify EHS of accidents or near misses. Employee responsibilities include, but are not limited to, conducting pre-operational inspections prior to the start of each shift and observing all precautions discussed in training and the recommendations of the manufacturer of the PIT. EHS responsibilities include administration and maintenance of the UNL Forklift/PIT training program and associated procedures as well as maintenance of documentation and delivery of necessary training to employees. A more complete listing of responsibilities for supervisors, employees, and EHS may be found within the SOP, *Forklift/Powered Industrial Truck Safety*.

Following are a few general PIT operational safety precautions:

- **Seatbelts.** Newer PITs should be equipped with a seatbelt which is then to be worn by the operator.
- **ANSI (American National Standards Institute).** Efforts should be made to replace equipment that does not meet design and construction requirements of Part II, ANSI B56.1 standard.
- **Modifications.** Modifications to PITs are not allowed without express written approval from the manufacturer or authorized representative, and such documentation must be maintained for the life of the PIT.
- **Designation & Rating.** PITs must have the correct designation (D, DS, DY, E, ES, EE, EX, G, GS, LP, or LPS) for the location of operation, be rated for the intended loads, used with approved attachments, and compatible with operating surface load limits.
- **Personal Safety:** Passengers are not permitted on or in the forklift or load. Operators must not put any part of their body between the uprights of the mast, or beyond the contour of the forklift.
- **Right-of-Way.** Pedestrians ALWAYS have the right-of-way.

The *Forklift/Powered Industrial Truck Safety* also contains sections with information to review:

- Before Operating at PIT
- Picking Up a Load with a PIT
- Moving a Load with a PIT
- Parking a PIT
- Lifting People with a PIT
- Attachment A – Operator’s Daily Checklist
- Attachment B – Safe Fueling/Charging
- Attachment C – Load Rating Reduction

Please note: While the *Forklift/Powered Industrial Truck Safety* SOP is a valuable reference, it does NOT fulfill the requirement for, or substitute for participation in, the formal PIT training program administered by EHS for the UNL Forklift/PIT program.

For questions or further information n contact EHS by phone (402-472-4925) or email (ehs@unl.edu).

Resources:

Forklift/Powered Industrial Truck Safety SOP <http://ehs.unl.edu/sop/s-forklift.pdf>

5. Heat Stress

Working in the heat stresses the body and can lead to illness or even death in severe cases. However, heat illnesses are preventable. The SOP, *Heat Stress*, provides guidance on recognizing the signs and symptoms of and avoiding heat stress and illnesses.

There are two main categories of risk factor the worker should evaluate when contemplating outdoor work:

- **Weather Conditions.** The risk of heat stress is relative to temperature, humidity, sunlight, and wind speed. High temperature, high humidity, direct sunlight and low wind speed make the worst combination. If possible, schedule heavy work for the cooler parts of the day.
- **Personal Factors and Physical Demands.** The risk of heat stress increases with physical demands. For example, a worker who is walking is at higher risk than a worker who is riding in a vehicle. A worker who is lifting and carrying heavy items is at the greatest risk. Older workers, obese workers, and persons taking certain types of medication, such as antihistamines, are at a greater risk for heat illness.

It may not always be possible to work only in cooler parts of the day. Mitigation, or reducing risk, can be accomplished by:

- **Acclimation.** Acclimation means “become accustomed to.”If possible build up tolerance to heat by short exposures followed by longer periods of work in a hot environment.
- **Appropriate clothing.** Light, loose clothing and a hat are the clothing of choice.
- **Hydration.** Drink 8-16 ounces of water *before* working in the heat. Consume 4-8 ounces of water or electrolytes drink every 15-20 minutes while working in the heat. AVOID alcohol, coffee, tea, or soda, which further dehydrate the body.
- **Adequate Rest Periods.** Work at a steady pace. Take breaks when your body signals you need one, preferably in shaded or cool areas.
- **Education.** Heat stress can manifest as a number of conditions, all to be taken seriously and some requiring medical assistance to avoid permanent aftereffects. Workers should be able to recognize the signs and symptoms of these conditions so they can take proper action if they or their co-workers are affected.

More in-depth information on the above five mitigation suggestions, including signs/symptoms and treatment information on six possible results of heat stress may be found within the EHS SOP, *Heat Stress*.

Resources:

Heat Stress SOP <http://ehs.unl.edu/sop/s-heatstress.pdf>

National Institute for Health & Safety (NIOSH) Safety & Health Topics: Heat Stress
<http://www.osha.gov/Publications/osh3154.pdf>

OSHA (Occupational Health and Safety) Quick (Reference) Card

<http://www.osha.gov/Publications/osh3154.pdf>

Remember...SAFETY IS AN ATTITUDE!

