

In this issue of the Environmental Health and Safety (EHS) Listserv – March 20, 2019

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1. Grain Bin Safety

Working around grain bins presents unique and serious hazards of which farm workers must be constantly vigilant. Recently a Nebraska man died in a grain bin accident when he climbed into a grain bin to clear a jammed auger.

Following are some major hazards and mitigation strategies:

- **Hazardous atmosphere (oxygen deficiency, toxic gases, allergens).** Store only adequately dried grain to reduce spoilage. Keep insect/animal infestations to a minimum. Regularly clean bin. Observe all restricted entry requirements.
- **Fire/Explosion.** Accumulations of grain dusts can create flammable/explosive atmospheres, so make sure ventilation systems are in good working order. Ensure grain dust accumulations are kept to a minimum with regular cleaning, especially near ignition sources. Ensure electrical connections meet code requirements.
- **Falls.** Working at heights in and around a grain bin poses a fall hazard. When performing tasks at elevated heights, a worker may need fall protection.
- **Electrocution.** This hazard is often overlooked. An auger may come into contact with overhead wires while being moved. Poles to dislodge crusted grain can contact overhead lines unless care is taken.
- **Entanglement.** Unguarded augers, PTOs, and other moving parts present an entanglement hazard, as does the sweep auger inside the bin. Ensure all equipment is properly guarded, avoid loose-fitting clothes, and do not operate the sweep auger while inside the bin.
- **Engulfment/Entrapment.** While loading/unloading operations present an obvious engulfment/entrapment hazard, stored grain is also dangerous. Air pockets can shift and cause stored grain to flow like a liquid. Do not enter grain bins during active loading/unloading. Entry in

the presence of grain should be conducted only when there is no alternative and then only observing the following:

- Grain is less than waist deep and applicable lockout/tagout procedures have been implemented to prevent grain addition, removal, or other movement.
- The atmosphere in the bin is not hazardous, adequate ventilation has been established, and no work to be conducted in the bin has the potential to create a hazardous atmosphere.
- A co-worker is present outside of the bin, verbal communication is maintained, and the co-worker has a readily available means of summoning emergency help.

Entry when larger amounts of grain are present requires special annual training for entrant and attendant. Restraint systems with secured lifelines and anchor points need to be used. Consult with EHS to develop appropriate entry procedures that conform to UNL's Confined Space Entry and Lockout/Tagout Programs.

Resources

- Szalewski, Susan. "Nebraska City Man Dies in Grain Bin Accident." *Omaha.com*, Omaha World-Herald, 10 Feb. 2019, www.omaha.com/news/nebraska/nebraska-city-man-dies-in-grain-bin-accident/article_265b80e7-4c5c-5443-995c-9e7e2b5e2451.html.
- EHS **Grain Bin Safety** SOP https://ehs.unl.edu/sop/s-grain_bin_safety.pdf
- Grain Entrapment Prevention information www.grainentrapmentprevention.com
- NFU (National Farmers Union) Farm Safety series https://www.youtube.com/playlist?list=PL0B_GIRKHw4tDAY8-Pn_w-8_7g8okjCA-

2. Be a Storm Water Steward

Pollutants are discharged to streams, creeks, rivers and other water bodies as rainwater and snow melt flows over land and impervious surfaces and enters storm sewer conveyance systems. Pollutants are varied, including sediment, pet waste, trash/debris, excess fertilizers, deicing materials, and others. Discharges from UNL's City and East Campuses enter Antelope Creek, Salt Creek, and Dead Man's Run. A Run Off Control Plan has been developed to minimize adverse impacts to receiving waters from UNL operations. This plan is available at https://ehs.unl.edu/Runoff_Control_Plan_2019-01.pdf. Key management practices in this plan include:

- Encouraging pet owners to pick-up after their pets. Receiving waters have impaired water quality for E. coli; animal wastes contribute to E. coli loading.
- Encouraging good maintenance practices for automobiles and other equipment to prevent fluid leaks.
- Encouraging use of litter containers and regular litter pickup.
- Encouraging the reporting of potential illicit discharges to EHS through the Stormwater Reporter Tool (<https://ehs.unl.edu/stormwater-pollution-reporting-form>)
- Discouraging activities that leave soils in a disturbed state where they can easily be transported to nearby storm sewer inlets by wind, snow melt, or rain water.
- Encouraging proper storage of chemicals and disposal via EHS.

Help us to protect water quality by becoming an active storm water steward! Familiarize yourself with UNL's Runoff Control Plan. Get involved and encourage others to be good stewards of our environment! EHS welcomes ideas from the campus community on how we can further strengthen our Runoff Control Plan, or any other element of UNL's Storm Water Management Plan.

NOTE: The 2018 Stormwater Annual Report is online at https://ehs.unl.edu/SW_Annual_Report_2018.pdf for your review. Comments (<https://ehs.unl.edu/stormwater-management>) are welcome.

3. PulsePoint® Apps & AEDs

A man in Lincoln is alive thanks to quick action of a former city worker using PulsePoint® alert. A public works employee was working near the airport recently when he got an alert through the PulsePoint® app that someone nearby was in cardiac arrest. His quick response led to a favorable outcome. The PulsePoint's® Respond application empowers everyday citizens to provide life-saving assistance to victims of sudden cardiac arrest. Application users may indicate they are trained in cardiopulmonary resuscitation (CPR) and are willing to assist in case of an emergency. Early, effective CPR marks the best predictor of survival for people who go into cardiac arrest outside a hospital.

Cardiac arrest is the third leading cause of death in the United States. Automatic External Defibrillators (AEDs) are small, portable devices that can be used to treat heart attack victims. AEDs serve a vital role in early intervention in cases of cardiac arrest. Knowing where the nearest AED is during a medical emergency is a matter of life or death. Now there's a free Android or iPhone app called PulsePoint® to provide the location of the nearest AED.

PulsePoint® AED exists to crowdsource lifesaving AED location information. Anyone can add AED locations to the app. If someone sees an AED, this app allows them to check if it shows up on the map. If not, it's easy to add a location to the registry. Once information submitted is verified by local authorities the new AED location is added to the map.

Because of AED simple design and ease of operation, they can safely be used by members of the general public. Automatic External Defibrillators (AEDs) are increasingly prevalent on the UNL campus. At UNL AEDs are available in some, but not all buildings. Individual departments are responsible for purchasing, installing, and maintaining AEDs. If a department elects to purchase AEDs they must ensure that an ongoing maintenance program is established, implemented and funded.

After equipment is purchased and installed, contact local emergency response agencies and register the location of the unit with them. For equipment installed within Lincoln city limits, equipment may be registered online at <https://aedregistry.pulsepoint.org/>.

If the cardiac emergency is in a public place, the location-aware PulsePoint® application will alert trained citizens in the vicinity of the need for bystander CPR simultaneously with the dispatch of advanced medical care. This application also directs these citizen rescuers to the exact location of the closest publically accessible AED. Alternatively, if you see a cardiac emergency, after calling 911 you can look up the nearest AED.

More than 17,000 people have subscribed to Lincoln Fire and Rescue's feed on the free mobile PulsePoint® app which was adopted locally in 2015. It sends an alert to app subscribers who say they are CPR-trained and within a quarter-mile of the medical emergency.

Resources

- **Automatic External Defibrillators** SOP <https://ehs.unl.edu/sop/s-AED.pdf>
- PulsePoint® AED information <https://www.pulsepoint.org/pulsepoint-aed/>
- PulsePoint® Download (both AED and Respond apps available) <https://www.pulsepoint.org/download/>
- Bayley Bischof. "PulsePoint Notification Leads Retired Officer to Save a Life." *PulsePoint Notification Leads Retired Officer to Save a Life*, KLKN-TV, 14 Feb. 2019, 11:04 AM CST, www.klkntv.com/story/39965965/pulsepoint-notification-leads-retired-officer-to-save-a-life.
- Johnson, Riley. "Lincoln Pulsepoint User First to Start CPR on Person in Cardiac Arrest." *JournalStar.com*, Lincoln Journal Star, 14 Feb. 2019,

https://journalstar.com/news/local/crime-and-courts/lincoln-pulsepoint-user-first-to-start-cpr-on-person-in/article_a949a46c-7877-5dc8-9532-16f9bcef63dd.html.

4. AED Maintenance & Disposal Considerations

Batteries are one of the most important parts of an Automatic External Defibrillators (AED) system. To make sure an AED will work perfectly in an emergency situation, periodically check batteries as directed by the manufacturer to make sure they are in good working condition and replace the batteries when needed. AED batteries contain heavy metals such as mercury, lead, cadmium, and nickel which must be properly disposed. Complete and submit a Hazardous Materials Collection Tag for disposal through Environmental Health and Safety.

Upon occasion, there may be a reason to dispose the entire AED unit. When discarding the entire unit, contact EHS for pickup and disposal of the device by completing/submitting a Hazardous Materials Collection Tag.

For questions on this topic or other disposal concerns, contact Tony Lloyd, 402-472-4942 or alloyd4@unl.edu.

Resources

- **Automatic External Defibrillators** Safe Operating Procedure (SOP) <https://ehs.unl.edu/sop/s-AED.pdf>
- **Battery Disposal** SOP <https://ehs.unl.edu/sop/s-batterydisposal.pdf>
- **Hazardous/Radioactive Material Collection Procedures** SOP https://ehs.unl.edu/sop/s-chem_collection_procedures.pdf

5. Safety Shorts – Ladder Safety Month

This series features links to short safety resource(s) each month. Provided this month are resources related to ladder safety in observance of National Ladder Safety Month.

The American Ladder Institute (ALI), the only approved developer of safety standards for the U.S. ladder industry, promotes March as National Ladder Safety Month. Every year over 100 people die in ladder-related accidents, and thousands suffer disabling injuries. This important month was designed to raise awareness of ladder safety and to decrease the number of ladder-related injuries and fatalities. This year's theme is: ***“Every step matters: From step stools to extension ladders, make sure you're putting the right foot forward.”***

ALI provides a free online Ladder Safety Video Library:
<https://www.americanladderinstitute.org/page/LSTVideos>

If you missed the October 2018 EHS Safety Colloquium **Ladder and Step Stool Safety** you can review the video online:
<https://ehs.unl.edu/training/Colloquium>

NOTE: Resources are provided for informational purposes only. Publication does not in any way endorse a particular company or product or affect current UNL policies and procedures.

6. Chancellor's University Safety Committee Open Forum

The Chancellor's University Safety Committee (CUSC) will host the fall **Open Forum** meeting at Nebraska East Union 3:00 – 4:00 p.m. on Tuesday, October 26, 2019. The campus community is invited to share concerns or just observe the workings of the CUSC.

The CUSC is a UNL committee established to assist the Chancellor by making recommendations of methods to reduce safety hazards at UNL. The campus community may contact the CUSC Chair at any time with safety concerns or questions and attend bi-monthly meetings.

The CUSC charter, as well as links to the list of members, upcoming agenda, meeting dates/locations, previous meeting minutes, current year's goal and more, are available online.

Resources

- Chancellor's University Safety Committee
<http://ehs.unl.edu/chancellors-university-safety-committee-cusc#cusc>

7. Near Miss...or Near Hit?

EHS and the Chancellor's University Safety Committee encourages reporting of near-miss/close call incidents and potentially unsafe conditions (e.g., unsafe acts, equipment defect, etc.) in the workplace so that contributing factors can be identified and abated before they result in personal injury/illness or property damage.

A near miss is an incident where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury or illness easily could have occurred. It can be thought of as a "close call." Looking at the situation from another viewpoint...it can be thought of as a "near hit!"

Identifying such a situation represents a "Good Catch" that just might save you or a co-worker from injury! By reporting these circumstances, you are contributing to a safer and healthier campus environment. Information reported is shared throughout the University for educational/awareness purposes; specific identifying information (e.g., names, departments, etc.) is redacted. We appreciate your participation and assure you that there is no risk of repercussions for reporting a situation or hazard.

To support this effort, a "*Near Miss/Close Call Incident Reporting Form*," <https://ehs.unl.edu/near-missclose-call-incident-reporting-form> is available through the EHS website. EHS has developed business-card size handouts containing the URL to report for ease of sharing this information others in your work area. Please consider requesting a number of these Near Miss/Close Call reporting informational cards. To request any quantity of these business-card size handouts contact EHS at 402-472-4925 or ehs@unl.edu.

Resources

- *Near Miss/Close Call Incident Reporting Form*
<https://ehs.unl.edu/near-missclose-call-incident-reporting-form>

8. How Are We Doing?

Environmental Health and Safety is committed to excellent customer service and offers a *Customer Satisfaction Survey* as an easy method for the campus community to provide feedback on our services and staff. By taking a few moments to complete the survey (<http://ehs.unl.edu/survey>), you will be helping us to identify areas where we might need to focus our attention.

In order to effectively evaluate potential areas for improvement, please provide specific information or examples and your name and contact information. The Director, Brenda Osthus, follows up on all submissions. We greatly appreciate your participation.

Please feel free to contact Brenda Osthus, EHS Director, at 402-472-4927 or bosthus1@unl.edu if you would rather communicate outside the parameters of this survey.

9. Revised Safe Operating Procedures

- *Avoiding the Production of Biological Aerosols*
<https://ehs.unl.edu/sop/s-bio-aerosol.PDF>
Added clarifying language in several sections of the document. No procedural revisions were made.

- **Chemical Disinfection for Biohazardous Materials**
<https://ehs.unl.edu/sop/s-bio-disinfectants.pdf>
Wording change to a caution statement about use of corrosives for Prion disinfection.

- **Laboratory Hood/Cabinet Identification and Use**
https://ehs.unl.edu/sop/s-lab_hood_use.pdf
Mostly minor wording changes for clarity.

- **Lentiviral Vectors** https://ehs.unl.edu/sop/s-lentiviral_vectors.pdf
Updated with current references and additional background information about lentiviral vectors. The table describing risk levels of viral vector experiments was revised with additional examples of transgenes. Additional guidance about lentiviral vector work in animals was added.

- **Transport of Biohazardous Materials at UNL (Including Research & Clinical Specimens/Materials)** https://ehs.unl.edu/sop/s-bio-transport_biohaz_materials.pdf
Added additional procedures for transport of materials. Added requirements for absorbent material in secondary container and lab and agent information to be included in transport container.

Remember...SAFETY IS AN ATTITUDE!

Environmental Health and Safety

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