

EST 800X: Georgia Small Business Awareness Level Training: Grain Handling Facility Safety and Health

Funding Provided by: DOL-OSHA and the Georgia Tech Research Institute's OSHA Consultation Program

Consultation Staff: Damon Nix, BSIE
Paul Schlumper, CSP, PE, MSIE
Paige Rohrig, CSP, MS
Daniel Ortiz, CSP, MPH

Purpose and Goals

The purpose of the training is to provide owners and employees of small business in the state of Georgia working knowledge of hazards in grain handling operations, OSHA regulatory requirements related to grain handling, and prevention methods for addressing hazards. This awareness level training will guide employers and employees in grain handling industries to identify and mitigate hazards. Employers will also be made aware of safety program requirements, such as written programs and training.

At the conclusion of this training management will:

1. Be able to list the common hazards in the grain handling industry.
2. Understand the hazards and prevention methods related to entering grain bins.
3. Understand the hazards and prevention methods related to fugitive grain dust.
4. Understand other hazards not directly addressed by 29 CFR 1910.272 at grain handling facilities; such as machine hazards, fall hazards and hazardous energy (lockout-tagout).
5. Be able to identify the safety and health program management requirements for grain handling facilities, including written safety programs, permits and training requirements.

Course Topics:

1. Grain Handling Safety – An Introduction
2. Safe Grain Bin Entry
3. Dust Explosion Hazards in the Grain Handling Industry
4. Machine, Fall and other Hazards in the Grain Handling Industry
5. Grain Handling Program Administration

Loss Sources

Workers are exposed to engulfment/entrapment hazards that can lead to suffocation and potential amputation hazards when entering grain bins. There has been a significant increase in grain bin entry related fatalities in 2009 and 2010 compared to previous years.

Workers entering grain bins may also be exposed to hazardous atmospheres such as oxygen deprivation due to molding organic material and toxic fumes from pesticides.

Workers are also exposed to grain dust fires and explosions where housekeeping and the maintenance of grain stream processing equipment are not managed properly.

Finally, workers are exposed to a number of machine hazards and fall hazards at grain handling facilities.

Important Web Sites and References

OSHA's Grain Handling Safety Website

- <http://www.osha.gov/SLTC/grainhandling/index.html>

NIOSH's Grain Handling Health Website

- <http://www.cdc.gov/niosh/topics/agriculture/#grain>

Purdue University's Grain Lab

- <http://extension.entm.purdue.edu/grainlab/>

University of Arkansas Cooperative Extension, *Suffocation Hazards in Grain Bins* – Web Document

- http://www.uaex.edu/Other_Areas/publications/PDF/FSA-1010.pdf

Oklahoma State University Stored Products Research and Education Center

- <http://storedproducts.okstate.edu/Safety.html>

OSHA's Combustible Dust Website

- <http://www.osha.gov/dsg/combustibledust/index.html>

State of Florida Agriculture Safety Program

- <http://www.flagsafe.ufl.edu/topics-osha.html>

Oklahoma State University – *Preventing Grain Dust Explosions* – Web Document

- <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2604/CR-1737web.pdf>

References

- a. ANSI/NFPA 61, *“Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities.”*