

SESSION 3 (1 hour)
GRAIN HANDLING – DUST EXPLOSION HAZARDS

Lesson Plan: Student Guide
Grain Handling – Dust Explosion Hazards

Overview

Unfortunately, explosions and deflagration fires occur on a periodic basis at grain handling facilities. While the hazards associated with combustible dust fires and explosions have been well documented, many facilities are still unprepared for preventing these catastrophic events. This lesson will address the hazards associated with combustible dust fire and explosion hazards along with the OSHA requirements. Additionally, prevention techniques will be addressed.

Lesson Objectives

Upon completion of this topic students should be able to:

1. Understand some of the basic hazards and prevention techniques associated with combustible dust fires and explosions at grain handling facilities.
2. Be familiarized with the OSHA requirements pertaining to dust explosions in grain handling facilities.

Training Resources

1. PowerPoint Presentation with instructor notes (Color)

Activities and Classroom Procedures

1. Review course objectives
2. PowerPoint slides with class discussion

Lesson Roadmap

1. Overview of Combustible Dust Hazards and Prevention
 - a. Slides to be used : 1-23
 - b. Objectives Covered : 1
 - c. Exercise/Demos : None
 - d. Training Aids : None
2. Relevant NFPA Standards
 - a. Slides to be used : 24-25, 44

- b. Objectives Covered : 1
 - c. Exercise/Demos : None
 - d. Training Aids : None
- 3. Overview of Relevant Sections of 29 CFR 1910.272
 - a. Slides to be used : 26-43
 - b. Objectives Covered : 2
 - c. Exercise/Demos : None
 - d. Training Aids : None
- 4. Questions and Answers
 - a. Slides to be used : 44
 - b. Objectives Covered : 1,2
 - c. Exercise/Demos: None.
 - d. Training Aids: None.

Evaluation and Assessment

- a. Interactive conversations

Resources/Web Sites

- Grain Handling – OSHA Web Page - <http://www.osha.gov/SLTC/grainhandling/index.html>
- Combustible Dust – OSHA Web Page - <http://www.osha.gov/dsg/combustibledust/index.html>
- Florida Agricultural Safety Program – Web Page - <http://www.flagsafe.ufl.edu/topics-osha.html>
- Preventing Grain Dust Explosions – Oklahoma State University Fact Sheet - <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2604/CR-1737web.pdf>