

# TOOLBOX TALKS

## Grain Dust Explosions

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### TOPIC: Grain Dust Explosions

Explosions can be serious hazards for grain handling facilities. These guidelines may greatly reduce the chances of an explosion occurring.

#### Contributing Factors

- Explosions require fuel, oxygen, heat and confinement.
- Grain handling facilities may contain multiple confined spaces.
- Grain handling equipment can generate heat.
- Dust created from handling the grain can provide necessary fuel.
- Oxygen is always present in the atmosphere.

#### Types of Explosions

- Primary explosions are caused by a heat source or spark.
- Secondary explosions are a series of smaller explosions caused by the blast wave from the primary explosion. They can cause more damage than the primary explosion.

#### Preventative Measures

- Limit the amount of dust that is allowed to build up.
- Use explosion proof vacuums or wet cleaning methods in place of brooms or compressed air, which can stir up dust.
- Inspect and maintain grain-handling equipment to prevent heat build up from things like hot bearings or slipping belts.
- Always use hot work permits and be careful when performing welding and cutting operations, or when using power tools.
- Reduce the chance for sparks by using intrinsically safe tools, along with explosion proof lighting, plugs, and outlets.
- Try to design grain-handling facilities with explosion relief venting or open designs that can dissipate energy from the explosion.
- Make sure employees are aware of the hazards associated with explosions, and know what to do in the event of an explosion.
- Develop an emergency response plan with local authorities and your on-site safety coordinator.

Discussion Date: \_\_\_\_\_

Employee Participants:

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