

# CONVENTIONAL SILO FIRE

**Be sure to:** *Established Command - Assign a Safety Officer - Establish communications - Formulate a plan and a backup plan - Plan an exit or escape plan*

## DEFINITIONS

Typically farm silos are used to store high moisture forages (silage); or high or low moisture grains. Silo fires are more typical in silos that have forages stored in them, but any silo structure can have a fire. There are two basic types of upright (vertical) silos on farms: oxygen limiting and conventional. **IT IS MOST CRITICAL TO UNDERSTAND THE DIFFERENCE BEFORE ATTEMPTING TO MANAGE A FIRE IN A FARM SILO!**

### Conventional Silo:

There are two main characteristics of conventional silos: an unloading chute that runs the vertical length of the exterior of the silo, and an open top or domed roof. Conventional silos will typically unload from a top unloader.

### Non farm silos:

Can be used to store grain material, or other products such as sawdust, wood chips or any other product can be involved in a fire. Many of the same strategies can be used as an initial approach to these structures. **Seek technical assistance with these structures.**

## GENERAL HAZARDS AND CONCERNS

- Understand that a fire in a silo is often not an imminent threat. Take your time to do a proper size up and seek technical help.
- Doing anything to add air to a fire in an oxygen limiting or oxygen deficient structure can cause an explosion.

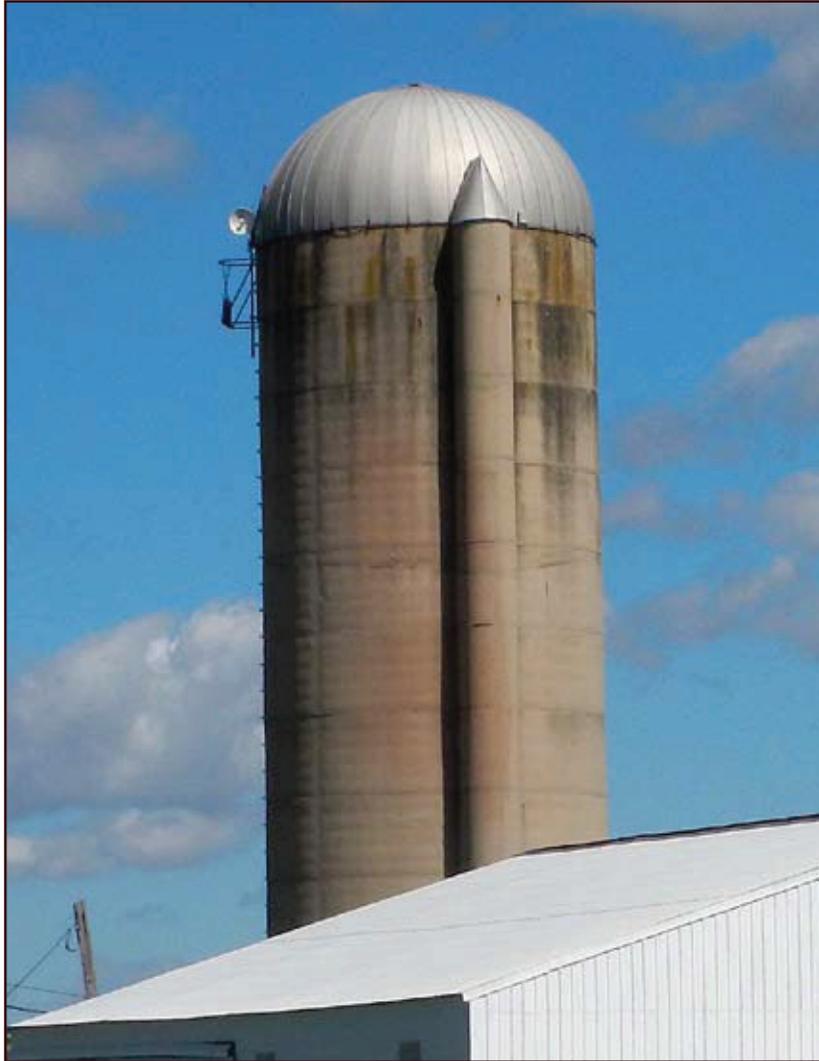
### SEEK TECHNICAL ASSISTANCE BEFORE ACTING

## SUGGESTED OPERATIONAL STEPS

Many fires in **conventional** silos start in the unloading chute and are often the result of an electrical short. If burned material is noticed at the bottom of the chute:

- Lockout / Tagout the electric to the silo unloader. Raise and secure the unloader.
- Wash out the silo chute to remove fuel material from inside the chute. An aerial device will allow access to the top of the chute if available.
- Inspect the unloading doors to determine if fire has burned through a door into the silo. This should be performed by someone that knows what normal doors should look and feel like.
- A fire in a conventional silo is typically located around the silo perimeter, the unloading doors, and the first few feet of silage. Fires burning for an extended time can create hollowed-out cavities. There is typically little value and high-risk to entering the silo. The concept of extinguishing a fire in a conventional silo is geared toward identifying the general location of the fire and then concentrating on that area, rather than flooding the silo with water.
- If flames, heavy smoke or hot spots are visibly observed, a straight tip nozzle can be used to concentrate on that particular area. Use minimal amounts of water.

- The silo will need to be unloaded. The more water that is used, the less likely that the unloader will be able to unload the wet material.
- A thermal imaging camera has been shown to be effective at locating hot spots in silos.
- Once a hot spot is found, a simple probe made out of ½” galvanized pipe with a pointed end can be made to penetrate the side of the silo (use an air chisel to open a small hole) and inject a small amount of water into that spot.
- CAUTION: Steam explosions are possible when injecting water into a fire cavity.



Typical Conventional silo.

## TECHNICAL ASSISTANCE

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