Bath Township Fire Department			Standard Operating Guideline	
Section Operations	**Referral No.** O-16	**Subject:** Oxygen-Limiting Silo Incidents	**Date Issued** 3/06	**Date Revised** 03/08

Purpose:

- To provide guidelines for safe response to Oxygen-Limiting Silos
- To define the response plan to Oxygen Limiting Silo incidents.

Scope:

- This standard operating guideline shall apply to all personnel.

Responsibilities:

- Officer
  - Ensure that personnel respond properly.
  - Provide direction based on the Incident Management System
- Personnel
  - All personnel have the responsibility of following the direction of Incident Command.
  - All personnel have the responsibility of wearing proper safety equipment and to operate in a safe manner.
  - All personnel will function within their level of training.

Guidelines:

- **Safety is always our first priority**
- **A "Full Response" shall be initiated for all Oxygen-Limiting Silo Incidents.**
- When dispatched to an Oxygen-Limiting Silo incident, all personnel will respond to the fire station.
- When personnel arrive, they will:
  - Obtain any information that the dispatcher received from the caller
  - Refer to a map of the facility to ensure firefighter safety.
  - Respond L-1301
  - Respond E-1304
  - Respond a Medic Unit
  - Establish a staging area for other responding companies not involved in initial operations.
    - IC will make the determination of additional equipment needed at the scene.
  - Upon arrival, transmit a brief size-up of the scene (Brief Initial Report) and establish command. (Refer to Incident Command guideline)
  - Stage additional apparatus outside of the collapse zone of the Silo.
    - 1.5 times the height of the silo

- During firefighting operations, foam or water shall not be directed onto the fire through the top hatches, since this may allow oxygen to enter the silo and cause the suspension of explosive dust.
- When not being filled or emptied, oxygen-limiting silo hatches should be kept closed.
  - If an oxygen-limiting silo is properly sealed, there is very little likelihood of a fire occurring by spontaneous heating, since the amount of oxygen trapped in the silo is usually insufficient to support a fire.
- Placards should be placed on the oxygen-limiting silo warning firefighters that the silo is in fact an oxygen-limiting silo, and should include information concerning the proper extinguishing techniques.
- If the roof hatches of oxygen-limiting silos are open, no attempt should be made to close them if there is smoke or steam coming from the opening, or if the silo is vibrating.
- The roof hatches should be safe to close if the silo is quiet and there has been no smoke or steam coming from the hatches for several hours.
  - Do not secure the hatch. This will permit the relief of any subsequent pressure that may build up.
- Large quantities of carbon dioxide or liquid nitrogen should be injected into the silo to extinguish the fire.
  - Some silos have valves specifically designated for this.
  - If it is necessary to drill a small hole in the side of the silo for insertion of the gas tube, care should be taken to not allow additional oxygen to be pulled into the silo.
  - All precautions normally associated with either nitrogen or carbon dioxide should be taken when handling these gases.
- Respond in the pre-planned manner to a "safe distance" from the incident
- **Never approach the silo without knowing the contents involved.**

Guide to application: 20' diameter by 60' tall silo will require 20 standard CO2 cylinders **or** 40 standard liquid nitrogen cylinders.

NOTE: Shawnee Township Fire Department has information on requesting large quantities of Carbon Dioxide and Liquid Nitrogen.