Confined Spaces

Special caution must be taken when working in a closed, unventilated area. By using the proper personal protective equipment and taking precautions, you help assure that the working environment is hazard-free.

However, under no circumstances enter a sewer, manhole, underground chamber, conduit or any other confined space without first taking the proper safety precautions. Think before you enter a confined space. People have died because they didn’t.

Follow these procedures:

- Don’t enter a confined space if you can perform the job from the outside.
- Open doors or remove covers and air out the area as long as possible before entering.
- Blank-out inlet and outlet lines whenever possible; lock all valves in the closed position and turn all switches off to be sure that the area is closed off as much as possible.
- Blow air, steam or both into the space to be entered or exhaust the air in the confined space in some way.
- Test for combustible gas, oxygen-deficient atmospheres (carbon dioxide), carbon monoxide and other suspected gases, including methane, hydrogen sulfide and nitrogen.
- Always put on a harness and lifeline (with standby personnel attached to the persons inside). Continue to test the air while entering the confined space. If oxygen in the air is less than 19 percent, anyone who breathes it without a respirator could become unconscious.
- All electrical equipment must be explosion-proof.
- If the atmosphere is dangerous, wear an approved air line or self-contained breathing apparatus.
- Whenever the confined space is re-entered, check conditions again. Keep records of the test results and all persons who entered the area.

Most of what we have discussed so far relates to respirators; however, some conditions require complete body protection because some gases or vapors, such as hydrogen cyanide, can be absorbed through the skin.

Never forget that a chamber that is safe one day may be deadly the next time you enter it. This is because when there is a rapidly falling barometer, indicating decreasing atmospheric pressure; oxygen could be replaced in the chamber by another agent, such as carbon dioxide.

Before entering a sewer or confined pit, ask yourself these questions. Your life could depend on it.

- Has organic matter used up all of the oxygen?
- Has fermentation produced suffocating carbon dioxide?
- Has decomposition created an explosive mixture?
- Has a chemical reaction created dangerous hydrogen sulfide, carbon monoxide or other toxic substances?

Following these basic guidelines will keep you safe when you work in or around confined spaces.