



# BULLETIN

## Risk Control

ACWA JPIA, P.O. Box 619082, Roseville, CA 95661-9082 (800) 231-5742

By: R. Scott Wood, Risk Management Advisor

March 2017

## Confined Space Entry

On January 16, 2017, three workers responded to an area in Key Largo, Florida, where residents were reporting odors of sulfur. One worker entered a man-hole and collapsed; a second worker went into the facility and also collapsed; the third worker subsequently entered and collapsed. Residents called 911 and a responding fire fighter descended into the structure without a supplied air (e.g., SCBA) because he could not fit through the hole with it. A second emergency responder entered the hole with a SCBA and a second unit for the collapsed fire fighter. The unconscious responder was transported to the hospital and released several days later. The bodies of the workers were removed after the facility was properly vented, continuous air monitoring in place, and entrants using supplied air. Subsequent air monitoring results indicated the space contained elevated levels of hydrogen sulfide and methane and low levels of oxygen.

This tragedy, like all confined space entry incidents, was caused by employers and workers failing to recognize and control the hazards associated with confined spaces, conducting inadequate or incorrect emergency response, resulting in the death of the initial entrant, the would-be rescuer, or both. Confined space entry planning should include all parties involved and should serve the purpose of reviewing entry procedures, as well as covering specific hazards inherent to the spaces being entered. "Confined space" means a space that:

- (1) Is large enough and so configured that an employee can bodily enter and perform assigned work
- (2) Has limited or restricted means for entry or exit
- (3) Is not designed for continuous employee occupancy



Examples of confined spaces include, but are not limited to, tanks, reservoirs, vessels, storage bins, vaults, pipes, and pits.

Confined spaces can be deadly because of the potential for engulfment, oxygen deficiency, oxygen enrichment, flammable gases or vapors, combustible dusts, toxic substances, and other physical hazards. Other health hazards that could impact employee safety include electrical equipment, mechanical equipment, poor visibility, biohazards, claustrophobia, noise, radiation, and temperature.

According to the U.S. Bureau of Labor Statistics (BLS) Census of Fatal Occupational Injuries (CFOI) program, fatal injuries in confined spaces average 92 fatalities per year. OSHA reports that over 4.8 million confined space entries are made every year in the United States, and over 11,000 injuries could be prevented if employers and workers had simply followed the procedures outlined in health and safety regulations. Furthermore, the National Institute for Occupational Safety and Health (NIOSH) reports that more than 60 percent of confined space fatalities are "would be rescuers".

Worker training is essential to the RECOGNITION of what constitutes a confined space and the hazards that may be encountered in them. This training should stress that death to the worker is the likely outcome if proper precautions are not taken before entry is made. All confined spaces should be TESTED by a qualified person before entry to determine whether the confined space atmosphere is safe for entry. Tests should be made for oxygen level, flammability, and known or suspected toxic substances. EVALUATION of the confined space should consider the following:

- Methods for isolating the space (e.g., double block and bleed, lockout, etc.)
- Ventilation, cleaning and/or purging of the space
- Work procedures, including use of safety lines attached to the person working in the confined space and its use by a standby person if trouble develops
- Personal protective equipment required (clothing, respirator, boots, etc.)
- Special tools required
- Communications system to be used

The confined space should be continuously MONITORED to determine whether the atmosphere has changed due to the work being performed. Regardless the type of space being entered (i.e., full-permit or c(5)), an entry attendant should always be present to ensure timely reporting to the rescue team in the event of an emergency. Always ask, "Is it possible to complete the task(s) from outside the space?", "What is the rescue plan?", "Who's looking out for my safety?"

Unlike most general industry worksites, construction sites are continually evolving, with the number and characteristics of confined spaces changing as work progresses. As such, whether a confined space exists and the degree of related hazards can vary. Based on these factors, OSHA enhanced its standard for construction work in confined spaces emphasizing training, continuous worksite evaluation, and communication requirements to further protect workers' safety and health.

1. Coordinated activities are required when there are multiple employers at the worksite to ensure hazards are not introduced into a confined space by workers performing tasks outside the space. An example would be a gen-

erator running near the entrance of a confined space causing a buildup of carbon monoxide within the space.

2. A competent person is required to evaluate the work site and identify confined spaces, including permit spaces. A "competent person" must conduct the initial jobsite evaluation.
3. Continuous atmospheric monitoring is required whenever possible.
4. Continuous monitoring of engulfment hazards. For example, when workers are performing work in a storm sewer, a storm upstream from the workers could cause flash flooding.
5. Employers must coordinate emergency services before workers enter the confined space. Employers relying on local emergency services for emergency services, must arrange for responders to give the employer advance notice if they will be unable to respond for a period of time (e.g., because they are responding to another emergency, attending department-wide training, etc.).

Additional information is available at the following links:

[https://www.dir.ca.gov/dosh/Confined\\_Space\\_Emphasis\\_Program.html](https://www.dir.ca.gov/dosh/Confined_Space_Emphasis_Program.html)

[http://www.dir.ca.gov/dosh/dosh\\_publications/confspa.pdf](http://www.dir.ca.gov/dosh/dosh_publications/confspa.pdf)

<http://www.acwajpia.com/RiskControlManual.aspx>



# Ergo Corner

## Digging Techniques

Digging and trenching is physically demanding work, made even more dangerous when proper techniques are not employed. Potential hazards include:

- Muscle strain from attempting to lift too much material at one time.
- Overexertion and muscle pain caused by digging for extended periods of time.
- Awkward positions while digging, such as twisting the back or knee.

Ergonomic solutions that can help reduce the risk of injury from manually digging include:

- Move your feet and turn your entire body when digging or moving dirt, instead of twisting at the torso.
- Use tools with long handles to prevent excessive bending of the torso.
- Select the correct shovel for the job.
  - Round-bladed shovels should be used for sand and dry earth.
  - Square-bladed shovels should be used for coarse material.
  - Use shovels with a rolled step for digging in hard earth.
  - Use smaller trenching shovels to minimize the weight of materials lifted.
  - Break jobs into smaller tasks no longer than 15 minutes in length, alternating with non-digging tasks.
  - Alternate between shoveling on the left and right side of the body.
  - Reduce throwing distance by placing wheelbarrows close to the digging area. Ideally, throw distance should be between three and four feet.
  - Always use proper personal protective equipment.

When possible, use a mechanical device such as a trencher or a backhoe to assist with digging.

### A TYPICAL Way



Twisting the body while lifting a shovel may injure the joints and muscles in your shoulders, elbows, wrists, and back. It may keep you from ever working again.

### A SAFER Way



Here are ways to minimize twisting while shoveling:

- When lifting, put your weight on your front foot.
- Before throwing, shift your weight to your rear foot.
- When throwing, turn your front foot in the direction of the throw.



# What's Wrong With This Picture?

Look at the photo below and identify what is wrong in the picture.  
You may want to review this picture during your next safety meeting.



Answer:

Everything!



We are collecting nominations for the **H.R. LaBounty Safety Awards Program**. We encourage you to submit nominations to highlight your employees' safety-related ideas. Complete the Nomination Form online at <http://www.acwajpia.com/SafetyAwards.aspx>.

Don't forget to send digital photos. The deadline to submit a nomination is **March 20, 2017**.

## Risk Management Staff

Carol Barake, Risk Management Program Manager  
Robin Flint, Senior Risk Management Advisor  
Keith Forbes, Senior Risk Management Advisor  
Peter Kuchinsky II, Lead Risk Management Advisor  
Terry Lofing, Administrative Assistant II  
Lee Patton, Senior Risk Management Advisor  
Chuck Wagenseller, Cost Estimator/RM Advisor  
R. Scott Wood, Senior Risk Management Advisor