

## *Excavation/Trench and Confined Space Safety*

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Recently, NeRWA hosted two days of unique training at our office in Wahoo: “Competent Person for Excavation and Trenching” and “Confined Space Training.” Midwest Fire Training Associates of Burlington, KS provided the training. Midwest has conducted this training for us for several years now. This was the first time I was able to attend...I had no idea what I had been missing!

Day one of the training was “Competent Person for Excavation and Trench” and day two was “Confined Space Entry Training.” The instructors were Cheryl Treptow, who is also the owner of Midwest Fire Training Associates, and Kevin Jones, who is a Battalion Chief of the Chanute, Kansas, Fire Department.

### *Day One: Competent Person for Excavation and Trenching*

Over 100 people die in trench cave-ins each year and well over one thousand more are injured. There have been two such deaths in Nebraska this year. Most incidents occur in a 5 to 15 foot deep trench. As operators, most, if not all, of you have worked in a few trenches. Did you consider yourself to be in a dangerous situation? If you were not using shoring to protect yourself from a cave in, you probably were. A cubic yard of dirt can weigh from 2,700 to 3,915 pounds, depending on soil type (100 – 145 pounds per cubic foot). As the instructors from Midwest explained, during a cave in, that is like having the weight of a Ford Ranger pickup on your chest. Breathing would be impossible.

A trench is any excavation that is 1) longer and deeper than it is wide and 2) is less than 15 feet wide. In class, we learned about the duties of the Competent Person: someone who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them. In other words, the Competent Person is the Safety Person for the excavation or trenching operation. To do this job, the Competent Person should be knowledgeable about OSHA standards, soil classifications, how to test for soil type and stability, how to recognize trench hazards, different types of shoring, and trench ventilation, among other things. Midwest Fire Training did a great job of covering all of this information during class. But, there are some things you just won't learn in the classroom, and setting up shoring in a trench is one of them. So, for a good portion of the class, we went outside and utilized Midwest's training trailer (picture below) for some real life experience with shoring equipment. The class of 12 students and two instructors were all able to stand comfortably on the platform around the trench, along with several types of shoring equipment that we would put into place in the trench under the supervision of our instructors. There is no substitute for this hands on training. It was a great learning experience.



*Midwest Fire Training Associates has constructed a mobile training trailer, a “ trench on wheels” that allows for excellent hands on training. The picture is somewhat deceiving: the trench is 16 feet long, 4 feet wide, and 6.5 feet deep. Class participants were given hands on training to properly position, install and remove hydraulic and pneumatic shoring in this trench.*

### *Day Two: Confined Space Safety*

There are nearly 800 confined space deaths each year. Over 60% of these deaths are would be rescuers. In other words, one worker collapses in a confined space due to some hazard, such as an oxygen depleted or toxic atmosphere, when another worker, who is safe outside of the confined space, does what we all would be compelled to do: go in after the person who went down. The would-be rescuer succumbs to the same hazard as first person who entered. In this situation, the best thing one can do is call for help.

A confined space 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. Building on that information, a permitted confined space meets the above definition and has one or more of the following: 1) contains or has the potential to contain a hazardous atmosphere; 2) contains a material that has the potential for engulfing the entrant; 3) has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section; 4) contains any other recognized serious safety or health hazard.

In the classroom portion of the training, we learned about many topics including:

- OSHA standards
- Entry permits
- Personal protective equipment
- Toxic, combustible and oxygen deficient atmospheres and the proper order for testing the atmosphere in a confined space;
- How to properly use confined space ventilation
- Rescue equipment



*Midwest Fire Training Associates provides instruction as class participants use a tripod and mechanical lift/retrieval system to lower themselves into a confined space with the help of a safety attendant.*

Trenches and confined spaces are perhaps two of the most significant hazards that operators will face in the course of their work. There is no such thing as too much training when it comes to personal safety. I have high hopes that NeRWA and Midwest Fire Training Associates will be able to take this training to other parts of Nebraska next year. If we are successful in arranging this, we will be sure to let you know through our magazine and specialized mailings. If you have never had this training, it is a must. If you have had this training in the past, you should consider a refresher. You will be surprised how much you have forgotten. What do you have to lose? Or maybe I should ask, what does your family have to lose?