

# Confined Space Rescue Hierarchy

By Scott Goodwin, COSS

With all of the recent talk on confined space incidents and what has gone wrong during the rescues it is time to talk about the different types of rescues and the options that are available in a rescue. As a fire officer and confined space rescue technician, you should not be relying on the local fire department to be your rescue team. This is the most common mistake and is also a possible OSHA violation. Secondly, most rescuers lack confined space rescue training and most departments do not have the equipment necessary to effectively perform the rescue. Lastly, response times are too long for a victim to have a chance at survival when you rely on the local fire department to be notified, mobilize, respond and make a rescue attempt. OSHA typically views a “timely rescue” as 4 to 6 minutes. Most departments cannot meet that criterion alone. Now that we have eliminated outside rescue as your option, what is next?

Any incident inside of a confined space, by the definition, is a confined space rescue. OSHA says that once a rescue is needed that the rescue team must be evaluated under their criteria in 1910.146(k) which looks at things like response, training, equipment, annual practice etc. In order to have a rescue team established for your confined space entry, your team must be evaluated and that takes time and money. So what if your team does not meet the criteria established? You then have the option of either helping to correct what is missing, hire a standby rescue team or train your own rescue team. We all know that to have your own rescue team takes a significant amount of time and money in the investment. If you hire an outside standby rescue team, that can cost around \$1,000 per day or even more for a minimal three person team and equipment to stand around waiting for something to happen. The best option is, of course, to properly evaluate the space and control all hazards and work it according to industry best practices and not just the OSHA minimum requirements.

At CSTS Global, we believe there are three types of confined space rescues; self-rescue, assisted rescue and entry rescue. Self-rescue is obviously when the entrant has the foresight and ability to remove themselves from the hazard before it becomes a problem and would require removal. This is pro-active safety at its best. Why must we wait to leave the space when the alarm is going off on the monitor? Why do we wait until the conditions are so bad that we can no longer stay inside? Why do we have to be told or physically be removed due to our arrogance while working inside a confined space? The correct answer to all of these is that we don't have to! If the attendant is continuously monitoring the atmosphere and recording the results, the problem should be identified long before it's an issue. This allows the entrant to exit the space on their own while still under safe conditions. The problem(s) should be identified and then eliminated or at least controlled before allowing entry again. This is by far the best option of all three and should be demanded by all involved.

The second option of rescue is an assisted rescue. This should only come in to play if your conditions have diminished so quickly that the attendant and entrant had no time to prepare for it. Here we simply assist the entrant from the space using a retrieval device. It should be stressed that this option does not mean that we continue work until the entrant collapses and then we can assist them out by retrieval. What we are saying is that if the conditions in the space diminish so quickly that there is no time for self-rescue that we have a way to remove the entrant **without** having to go into the confined space! Under the confined space rescue section in OSHA, someone has to have CPR training on the team and this is why. It is likely that if you are performing an assisted rescue that the entrant has already become incapacitated and is possibly not breathing. Assisted rescue must be performed quickly so that the entrant has every possible opportunity to be revived, if needed, without further harm. A good attendant can ensure that this happens correctly. What if the entrant is entrapped or entangled or the retrieval device fails?

The final option and last resort is an entry rescue. If the above two rescues fail, there is no other option other than entering to retrieve the victim. At this point is where we get into the full commitment of an entry rescue team. Extensive training, an equipment cache that fulfills all possible options and a thorough understanding of all confined space hazards is necessary. If an entry rescue is needed, time is of the essence and minutes lost do nothing but seal the fate of the entrant. Irreversible brain damage occurs after 4 to 6 minutes without oxygen and it is proven that the average person can only hold their breath for 45 seconds. A good option at this point would be to ensure that all entrants have with them an emergency escape bottle of at least 10 minutes of breathing air. This can be donned immediately at the onset of an emergency and provide the entrant with the precious time necessary to ensure a survivable rescue. Other equipment should include a second retrieval device for the rescuer, most likely supplied air for breathing, protective clothing, an extrication device for the victim and a team of people to assist and support with the rescue.

Any way you go, your team must be prepared and ready for the response in case the first two options fail. Immediate response, on site and properly equipped and trained should be what you demand from your rescue team. All in all we are looking at a life, a human being; someone is in need and is relying on us. Sure there are times when we will have an unfortunate situation occur but this should be a minimum. Personally I am thinking that this should be less than 10% of the time and this percentage better be high. If I had to guess, I would expect that 70% should be self-rescue, 20% should be assisted rescue and 10% will be an entry rescue. Where do you want to be grouped? I am thinking on the 70% side myself! As always be safe and make your employees safe even if they don't want to.

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