

Confined Space Rescue: OSHA's Latest Requirements, Safety Best Practices, and Common Mistakes to Avoid

Presented by:

Bryan Haywood, MS

Founder & CEO

Safety Engineering Network (SAFTENG.net)

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MOST IMPORTANT!
**Over 50% of all
confined space
fatalities are
“would-be” rescuers!**
***Even Trained Rescuers
fall victim to their own
errors!***

PRCS BASICS

- THREE (3) Entry methods into a Permit-Required Confined Space (PRCS)
 - 1910.146(c)(5) - CONTROLLING HAZ ATM
 - 1910.146(c)(7) - ELIMINATION of ALL non-atm Hazards
 - 1910.146(d)-(k) - PERMITTED entry
- RESCUE REQUIREMENTS (1910.146(k)) apply to **ALL PERMITTED ENTRIES** into a PRCS
 - (d)(9) Develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue;
- 1910.146(k) Rescue requirements are **EXEMPTED** when entering via **(c)(5) OR (c)(7)**



RESCUE from PRCS's

- **ALL** entries into a PRCS REQUIRE **TWO (2)** Rescue Modes (1910.146(d)(9))
 - Entry Style - 1910.146(k)(1) - (2)
 - Non-Entry Style - 1910.146(k)(3)
- **ONLY ONE (1)** exception to these rescue requirements...

*1910.146(k)(3) To facilitate non-entry rescue, retrieval systems or methods shall be used **WHENEVER** an authorized entrant enters a **PERMIT SPACE**, **unless the retrieval equipment would increase the overall risk of entry OR would not contribute to the rescue of the entrant***

PLEASE NOTE there are NO EXEMPTIONS in 1910.146 regarding ENTRY STYLE RESCUE requirements!



RESCUE from PRCS's

- **We should note that OSHA's latest PRCS Standard for construction (1926.1201-.1213) clarifies this...**

1926.1211(c) Non-entry rescue is required unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. The employer must designate an entry rescue service whenever non-entry rescue is not selected. *Whenever non-entry rescue is selected, the entry employer must ensure that retrieval systems or methods are used whenever an authorized entrant enters a permit space, and must confirm, prior to entry, that emergency assistance would be available in the event that non-entry rescue fails.*



NON-ENTRY STYLE RESCUE

- **PREFERRED** method AND **REQUIRED** method (w/ exceptions) for **ALL** entries into PRCS's
- **EACH** entrant shall use a chest or full body harness
 - retrieval line attached at the **CENTER OF THE ENTRANT'S BACK** near shoulder level, **ABOVE** the entrant's head, OR at another point which the employer can establish presents a profile **small enough for the successful removal of the entrant**
- Other end of the retrieval line shall be attached to a **MECHANICAL DEVICE** or **FIXED POINT OUTSIDE THE PERMIT SPACE** in such a manner that rescue can begin as soon as the ATTENDANT needs to act
- **MECHANICAL DEVICE (4:1) REQUIRED** when entry is vertical type AND more than 5 feet (1.52 m) deep

Wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

**NON-ENTRY RESCUE is the RULE
with two (2) Exceptions!**



ENTRY STYLE RESCUE

- **REQUIRED** for **ALL** entries into PRCS's (NO exceptions listed in .146 or .1211)
 - 1st - **EVALUATE**
 - rescue service's ability to **RESPOND** in a **TIMELY MANNER**, considering the hazard(s)
 - rescue service's ability, in terms of **PROFICIENCY** with rescue-related **TASKS AND EQUIPMENT**, to **FUNCTION APPROPRIATELY** while rescuing entrants from the particular permit space or types of permit spaces identified
- continue



ENTRY STYLE RESCUE

- 2nd – **SELECT** a rescue team or service that:
 1. has the **CAPABILITY** to perform within a **time frame that is appropriate** for the permit space hazard(s) identified,
- AND**
2. is **EQUIPPED** and **PROFICIENT** in performing the rescue services necessary

continue



ENTRY STYLE RESCUE

- 3rd – **INFORM**
 - each rescue team/service of the **HAZARDS** they may confront
- 4th – **PROVIDE**
 - rescue team/service with **ACCESS** to **ALL** permit spaces from which rescue may be necessary so that the rescue service can develop appropriate **RESCUE PLANS** and practice rescue operations



In-House Rescue Team vs. Dialing 911

- In-House Rescue team (stand-alone team) is estimated to cost \$100,000 for a team of 12
 - 3-5 day course for rescue and high-angle
 - Medical Clearances and Fit-Testing
 - First-Aid/CPR Training w/ patient packaging training and equipment (backboards, c-collars, etc.)
 - Supplied Air Respirators system
 - Rescue PPE (Harness, Helmet, Lighting, etc.)
 - Communication Systems (Intrinsically Safe)
 - Rescue Rope(s) and Systems
 - On-going inspection program for ALL equipment
 - ANNUAL MOCK RESCUE to maintain certs



ISSUES with the “911 Rescue Plan”

9 1 1 is the most popular “rescue plan”,
UNFORTUNATELY it is almost always the **WRONG** plan!

- **MISTAKE #1**

1910.146(j)(4) Verifies that **RESCUE SERVICES ARE AVAILABLE** and that the means for summoning them are operable

1926.1210(d) Verifies that rescue services are available and that the means for summoning them are operable, **and that the employer will be notified as soon as the services become unavailable;**

If our local FD is our RESCUE service, the Entry Supervisor MUST contact the FD BEFORE EACH ENTRY PERMIT is approved!



ISSUES with the “911 Rescue Plan”

- **MISTAKE #2**

– There MUST be a system in place that will **INFORM the Entry Supervisor that the Local FD is NO LONGER AVAILBLE** so that the entry can be SUSPENDED until the FD becomes AVAILABLE again

- We become 100% dependent on the FD’s availability to complete the entry

NOTE: 1926.1211(a)(3)(iii) now requires that the Local FD MUST agree to notify the employer immediately in the event that the rescue service becomes unavailable!

See *Employer selection of local fire department as its off-site rescue service for compliance with 29 CFR 1910.146(k)(1)*. [05/23/2008]



ISSUES with the “911 Rescue Plan”

- **MISTAKE #3**

- FD Rescue team is made up with FF’s and EMS personnel who are **scattered around town and MAY EVEN have to be “CALLED IN”**

- The first arriving Engine Company will MOST LIKELY BE VERY LIMITED in their capabilities – KNOW how long it will take the FD to **ACTUALLY RESCUE ENTRANT(S) – NOT JUST ARRIVE ON-SITE!**



Questions for the “911 Plan”

1. Is your facility the ONLY facility in town relying on the FD to be their RESCUE TEAM?
2. Does the FD have a means set up for the Entry Supervisor(s) to call so they can VERIFY RESCUE SERVICES are AVAILABLE?
3. Has inclement weather been considered into response times?
4. Has times of day (e.g. rush hour) been considered into response times?
5. Is the FD willing to send their “rescue team” to the facility to be prepped and ready at the entry portal for those entries into KNOWN IDLH or POTENTIAL IDLH entries?

Since the 2009 Economic Rescission, many FD’s found their budgets slashed – hence they slashed their “services” (e.g. CS Rescue)



Confined Spaces in Construction

- OSHA's NEW Construction Standard on Confined Spaces
- Many requirements are identical – BUT NOT ALL!
- Entry MAY fall under 1926.1211 rather than 1910.146 – depends on the WORK done in the space – **NOT** the type of workplace the PRCS is in!
- OSHA took the opportunity with 1926.1211 to IMPROVE/CLARIFY their expectations!
- Here are some KEY differences regarding **RESCUE**...



Confined Spaces in Construction

- Here are some KEY differences regarding RESCUE:
 1. 1926.1211(a)(3)(iii) [*rescue team*] Agrees **to notify the employer immediately in the event that the rescue service becomes UNAVAILABLE**



Confined Spaces in Construction

- Here are some KEY differences regarding RESCUE:
 - 1926.1211(c) Non-entry rescue is **REQUIRED** unless the retrieval equipment would increase the overall risk of entry **OR** would not contribute to the rescue of the entrant. The employer **MUST designate** an entry rescue service whenever non-entry rescue is not selected.
 - Whenever non-entry rescue is selected, the entry employer **must ensure that retrieval systems or methods are used** whenever an authorized entrant enters a permit space, **AND must confirm, PRIOR** to entry, that emergency assistance would be available in the event that **non-entry rescue fails**.



Confined Spaces in Construction

- Here are some KEY differences regarding RESCUE:
 - 1926.1211(c)(3) **Equipment that is unsuitable for retrieval must not be used**, including, but not limited to, retrieval lines that have a reasonable probability of becoming entangled with the retrieval lines used by other authorized entrants, or **retrieval lines that will not work due to the internal configuration** of the permit space.



Thoughts on Tripods and Winches

- MAJOR LIMITATIONS that often go UNREGONIZED
 - Designed for **SINGLE ENTRANTS** in **VERTICAL ENTRIES**
 - USELESS on Horizontal entries
 - USELESS when MORE than one (1) entrant
 - SERIOUS strength limitations during RESCUE scenarios
 - FAST to deploy (e.g. In place at time of entry) BUT SLOW to perform (anyone who has cranked on a 4:1 winch can tell you)
 - Many tank roofs **NOT** designed to have hundreds/thousands of pounds of force applied at three (3) small locations



RECLASSIFICATION of PRCS to NON-PRCS

- 1910.146(c)(7) and 1926.1203(g) allows **RE-CLASSIFICATION** of a PRCS that has **NO KNOWN OR** even a **POTENTIAL** to have a Hazardous Atmosphere to a Non-PRCS
- RECLASSIFICATION requires the **ELIMINATION** of **ALL non-atmospheric HAZARDS** which made the space a PRCS
- SPACE ISOLATION via **DB&B**, **Blinding/Blanking**, or **Disconnect-Misalignment**
- Work taking place within the RECLASSIFIED SPACE can **NOT** generate a hazardous atmosphere
- Reclassification MUST be CERTIFIED and POSTED like a permit
- RESCUE requirements (k) are NO LONGER applicable...
 - (d) – (k), except for (g) no longer apply to the entry



Alternative Entry

- Do we want to even mention it!
- VERY FEW SPACES even qualify
- With HAZ ATM being the #1 killer inside PRCS...
- To use (c)(5) NO OTHER ACTIONS other than ventiation is needed (i.e. NO LOTO needed)
- (c)(5) came from 1910.268 – Telecommunications and 1910.269 - Electric Power Generation, Transmission, and Distribution



QUESTIONS?



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Bryan Haywood, MS

Bryan Haywood, founder and CEO of SAFTENG.net, has over 25 years of experience in the chemical process safety and emergency response fields. He began his career as a fire fighter/EMT while attending Murray State University, where he obtained his BS in Occupational Safety and Health. Bryan received his Master's in Safety Engineering in 1996.

During his career, Bryan developed, implemented, and managed safety management systems for five Fortune 500 companies that were required to comply with OSHA's Process Safety Management Standard and EPA's Risk Management Plan Rule. Four of these management systems achieved OSHA VPP status and, as a consultant, he played a key role at an additional nine sites obtaining VPP designation. Bryan focuses his safety efforts in the Chemical Process Safety arena, where he has extensive experience developing and implementing overall PSM/RMP management systems, Facilitating Process Hazards Analyses (PHA), Safe Work Practices (Hot Work, Permit-Required Confined Spaces, and many other areas.