

# OKOLONA FIRE PROTECTION DISTRICT STANDARD OPERATING PROCEDURE

## CONFINED SPACE RESCUE

**Page Number:** Page 1 of 4    **Effective Date:** 8/10/2023    **Reviewed with No Changes:**    **Supersedes Editions:** ALL    **Category:** Operational

**Purpose:** *This procedure addresses the major functions/tasks/considerations that are necessary at confined space rescue incidents.*

### **Procedure:**

A confined space is a space that has limited or restricted means of entry or exit, is large enough for a human to enter and perform work and is not designed for continuous human occupancy. Examples of confined spaces are underground vaults, tanks, storage bins, pits and diked areas, vessels, sewers, and silos.

Additionally confined spaces may have the potential for a hazardous atmosphere, contain material that has the potential for engulfing the entrant, have internal configurations 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 or contains any other recognized serious safety or health hazards.

### **INITIAL ACTIONS PRIOR TO BEGINNING RESCUE:**

1. The Command shall gather as much information as possible on what happened and when, number of victim(s), level of consciousness, injuries, location, position and if known, last time of contact with victim(s). Review previously completed confined space permit issued by the company operator or owner.
2. Ensure the following scene positions are filled with trained personnel prior to beginning the rescue: Command (Rescue Supervisor), Safety, Attendant, Entry Team, Back Up Team, Air Monitoring Group, Ventilation Group, Lock-Out/Tag Out Officer (if applicable), Supplied Air Group (if applicable).
2. Initiate and complete of fire department/rescue team confined space entry permit prior to rescue personnel entering the space.
3. Begin atmosphere assessment and recording using appropriate air monitors. The Safety Officer (or Monitoring Officer) should ensure all levels of the space are measured in accordance to different vapor densities to the extent possible.
4. An assessment of the number of victim(s), level of consciousness, injuries, location, and position should be done.
5. Evaluate available and needed resources (personnel and equipment) considering duration of incident and applicable weather forecast. Additional resources shall be requested as needed in accordance with communications procedure.

### **SPECIFIC SAFETY CONSIDERATIONS:**

6. Establish a perimeter based on atmospheric conditions, wind direction and structure stability.

*Standard Operating Procedures are meant only to be guidelines. Actual conditions may warrant alternative actions.*

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# OKOLONA FIRE PROTECTION DISTRICT STANDARD OPERATING PROCEDURE

## CONFINED SPACE RESCUE

**Page Number:** Page 2 of 4    **Effective Date:** 8/10/2023    **Reviewed with No Changes:**    **Supersedes Editions:** ALL    **Category:** Operational

7. Stop all unnecessary traffic in the area, park all running vehicles downwind.
8. Implement forced air ventilation/exhaust measures unless otherwise directed by command.
9. Atmospheric monitoring shall be done continuously. Command shall be notified whenever atmospheric conditions become hazardous and command shall take appropriate measures to ensure responder safety. Air monitor readings shall be recorded on the Air Monitoring Form at least every fifteen (15) minutes, more often when required by Command.
10. Respiratory protection shall be worn in accordance with 29 CFR 1910.134, 29 CFR 1910.146, and chemical specific SDS sheets when atmospheric monitors are displaying atmospheric levels outside the safe parameters of OSHA Time Weighted Average (TWA) and NIOSH Permissible Exposure Limit (PEL).
11. Implement Lock Out/Tag Out Procedure. Ensure the space is deemed safe from all mechanical, electrical, pneumatic, hydraulic, engulfment, vapor hazards.
12. Continuously monitor structure stability and safe rescuer egress. Begin shoring or other stabilization methods when appropriate.
13. Rescuer Personal Protective Equipment shall include respiratory protection, helmet, rescue gloves, medical gloves, full body harness, safety footwear, kneepads, elbow pads, flashlights and communications equipment. Other PPE may be necessary when appropriate.
14. All electrical equipment, including lighting and communications equipment must be intrinsically safe.
15. The Two-In (“Entry Team”), Two-Out (“Back-up Rescue Team”) practice is required.

### **SPACE ENTRY CONSIDERATIONS:**

16. Establish a perimeter based on atmospheric conditions, wind direction and structure stability.
17. Prior to entry into the confined space, the entry and back-up rescue teams shall be briefed of the space they are entering, including configuration (if known), anticipated hazardous, rescue plan, evacuation signal and back-up plan prior to entry. Other responders at the scene shall also be briefed with this information as soon as practical.
18. Rescuer taglines may or may not be appropriate in the confined space depending upon specific conditions present.
19. Pure oxygen shall not be used in a confined space having a potentially flammable atmosphere.
20. No rescuer shall remove his or her respiratory protection and give it to the victim. Rescuers should include breathing equipment for the victim(s) as part of the equipment taken into the confined space.

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# OKOLONA FIRE PROTECTION DISTRICT STANDARD OPERATING PROCEDURE

## CONFINED SPACE RESCUE

**Page Number:** Page 3 of 4    **Effective Date:** 8/10/2023    **Reviewed with No Changes:**    **Supersedes Editions:** ALL    **Category:** Operational

21. Consideration should be given to rescue/extrication and medical equipment taken into the confined space by rescuers.
22. If the confined space is involved in fire, a safety handline shall be deployed to the entrance of the confined space for egress protection. The handline shall be the same diameter or larger of the attack/entry team handline.

### **VICTIM CARE:**

23. Upon reaching the victim, entry personnel should do an immediate primary assessment.
24. A quick but thorough secondary assessment of the victim shall follow primary assessment. Treat serious injuries prior to removal if time permits.
25. If indicated, complete cervical spine precautions should be taken. NOTE: Because of the difficulty removing the victim from the space, optimum C-spine precautions may not be possible.
26. If the victim is conscious, he/she should be encouraged to wear the appropriate breathing apparatus.
27. After treating any immediate life-threatening injuries, the victim(s) should be “packaged” for removal using the appropriate equipment (backboard, Stokes basket, KED, LSP half-back, etc.). Care shall be taken to secure any loose straps, webbing or buckles that may hinder extrication.
28. Prior to removal, the entry team should determine the appropriate method of extrication. This may include a vertical or horizontal haul system constructed of ropes, pulleys, and other hardware.
29. A deceased victim shall not be moved unless it is necessary to rescue a live victim.

### **INVESTIGATIVE CONSIDERATIONS:**

30. The scene shall be preserved to the extent possible for safety considerations for investigative purposes.
31. The Kentucky Labor Cabinet Occupational Safety and Health Administration office shall be informed, and a representative requested if there has been a death or serious injury.

### **INCIDENT CONCLUSION:**

32. If entry personnel and/or equipment have been contaminated during the rescue/recovery, proper decontamination procedures shall be followed.
33. All fire department created documentation (confined space permit, air monitoring logs) shall be completed to be later filed with the incident records.

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Page Number: Effective Date: Reviewed with No Changes: Supersedes Editions: Category:  
Page 4 of 4 8/10/2023 ALL Operational

34. A “closing conference” shall be conducted, whenever possible, with the property owner representative to ensure appropriate follow-up action will occur. This action may include restoring the confined space back to its intended purpose, securing the space, closing the space or other appropriate action.
35. The Incident Commander should consider a post incident critique involving all responders following all companies returning to service. The Incident Commander may defer this critique to a later time for extensive incidents.