Title:	Confined Space Rescue		
Section:	600 Special Operations		
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Authorized By:	Fox River Fire District Chiefs		

A. PURPOSE

The purpose of this guideline is to provide direction when responding to and determining a course of action when dispatched for confined space rescue incidents.

B. SCOPE

This guideline shall apply to all confined space rescue incidents.

C. TERMS AND DEFINITIONS

1) Confined Space: is any area or vessel, which meets all-three of the following; is large enough and so configured that an employee can enter and perform work, has limited means of entry or exit, and is not designed for continuous occupancy.

2) Permit Required Confined Space: a permit required confined space is defined as confined spaces which have one or more of the following; contains or has a potential to contain a hazardous atmosphere, contains a material with potential for engulfment, is so structured that an entrant could become trapped or asphyxiated, and contains any other recognized serious safety or health hazard- i.e. moving parts, noise.

3) Recovery Mode: is defined as situations where the victim is obviously expired or after a period of time during the rescue operation where time, conditions, or other factors have reduced the chance for the victim's survival to minimal.

4) Rescue Mode: is defined as situations where the victim is believed or known to be alive. If this is unknown, personnel should operate in the rescue mode until time, conditions, or other elements make the chance for survival minimal.

D. GUIDELINE

Confined space rescue operations present a significant danger to fire department personnel. The safe and effective management of these operations requires special considerations and resources. Examples of possible confined spaces includes; tunnels, sewers, tanks, process vessels, manholes, storm drains, furnaces, silos, and industrial spaces.

1) Response
    a) Consider Technical Rescue MABAS Card to the Working Still.

2) Site Safety
    a) Ensure that unauthorized and/or untrained personnel, including fire rescue personnel, do not enter.
    b) Locate and secure site foreman/supervisor, attendant, or reliable witness and keep at the command post.
    c) Determine the last known point and number of victims.
    d) Attempt to determine the mechanism of entrapment, nature of trauma, or nature of medical emergency.
    e) Move all workers and bystanders away from the entrance to the confined space.
    f) Obtain Entry Permit and atmospheric test results, if available.

3) Scene Assessment
    a) Determine if the victim(s) are wearing protective clothing and/or respiratory protection
    b) Attempt to establish contact (voice, sight, touch) with the victim(s) while remaining outside the confined space.
    c) Determine the number and locations of access points into the space
    d) Determine the type of work being performed in the space.
    e) Begin ventilation of the confined space with exhaust fan.
    f) Determine electrical, mechanical and chemical hazards in the space.
    g) Determine if the workers performed any hazard control operations. Lock out / Tag out /Blank out.
    h) Attempt to shut down all operating equipment inside the confined space from outside of the confined space. Lock out / Tag out /Blank out.

4) Assign Personnel
    a) Safety Officer
    b) Rescue Group Supervisor
    c) Atmospheric monitoring
    d) Rigging Team
    e) Entry Rescuer(s)
    f) Back up Rescuer(s)
    g) Attendants
    h) Logistics
        i. Supplied air breathing apparatus or remote air.
        ii. Victim removal systems or equipment
    i) Rehab
    j) Ambulances

5) Safety
    a) Site control

i. Perimeter secure
ii. Potential hazardous energy LO/TO/BO

b) Air monitoring
c) PPE level

6) Ventilation
    a) Proper ventilation
    b) Proper type of ventilation
    c) Consider Effects of Ventilation
    d) Consider negative ventilation if only one entry point.
    e) Consider the effect of the ventilation exhaust on the scene

7) Selection of personnel for victim removal
    a) Minimum of 2 personnel shall make entry. Unless entry is to small
    b) Back up crew 2:1 ratio and have rescue crew on stand by
    c) PPE shall be worn all time
    d) Rescuers and Safety shall determine the type of PPE
    e) SCBA
    f) Only go as far as ½ of the bottle
    g) Use of air monitoring devices
    h) Full body harness on prior to entry (class III)

8) Communication and Lighting
    a) Flammable atmosphere, entry personnel should intrinsically safe or explosion proof communication equipment. If not available use a tag line system
    b) If rescue team is entering dark area, safety officer must determine the proper lighting

9) Orientation of Confine Space
    a) If available and prior to entry into the confined space, the rescue team with the help of responsible party should obtain blueprints or diagram of the space.
    b) Have action plan available to all teams
    c) Tags lines

10) Victim Removal Equipment
    a) Consider the proper equipment prior to entry
    b) Bring a supply of breathable air for victim if possible
    c) Pure O2 shall not be used in flammable atmosphere.
    d) Rescuers will not give their air to victim

11) Assessing Condition of Victim

a) Primary assessment and treatment right away if possible
b) A quick but thorough secondary assessment of the victim should be done if time permits.
c) C-spine if needed
d) If the victim is conscious should have breathable air on
e) Consult ACLS with patient updates

12) Patient Packaging
    a) Properly package. Sked, backboard, stokes basket or other devices
    b) Prior to removal from the space secure any loose webbing, buckles or straps.

13) Victim Removal Systems
    a) Prior to removal of the victim, entry team should have determined the appropriate method. May include vertical, horizontal haul systems constructed of ropes, pulleys and other hardware. With minimum 2:1 mechanical advantage
    b) General rule of thumb never allow a victim between the rescuer and the point of egress unless the situation dictates that one rescuer must pull the victim while the other pushes

14) Transfer to Treatment
    a) Immediately after reaching the point of egress, entry personnel shall transfer the victim to treatment personnel.
    b) If the victim is contaminated from product inside the space, they shall be decontamination and corridor shall be set and used prior to transferring the victim to EMS.

15) Termination of Rescue
    a) Insure personnel accountability
    b) If a fatality, consider leaving equipment in place and photographing the scene for investigative purpose.
    c) If personnel and equipment are contaminated during the rescue/recovery, proper decontamination procedures shall be followed prior to putting the equipment back in service.
    d) Secure the scene. Prior to turning the property back over to the operating, one final reading of atmospheres shall be taken and recorded.
    e) Conduct a written critique with the involved people. Focus on lessons learned.

2) Arrival on Scene

a) The first-in unit should position the apparatus appropriately

b) The first arriving officer should establish command, isolate the area, and complete an initial size-up including:

i) Secure any witnesses

ii) Obtain the confined space entry permit and any other available information

iii) Location, number, condition of victims, and length of time in confined space

iv) Utility and other scene hazards – i.e. hazardous materials, low oxygen levels

v) Type of work being performed in the confined space

vi) Type of PPE being used by victim(s)

vii) Determination of rescue or recovery mode

viii) Determination of additional resources needed, consider MABAS box Technical Rescue Card to the Working Still level.

3) Scene Safety

a) Establish inner and outer circle (utilize barrier tape and natural boundaries)

b) Ensure that unauthorized/untrained personnel do not enter the confined space

c) Confirm or implement lock out/tag out

4) Incident Actions

a) If victim is attached to a body harness and retrieval line, the rescuers may lift the victim from the confined space area

b) Attempt to establish contact with victim(s)

c) Establish atmospheric monitoring

d) Establish ventilation of confined space after atmospheric monitoring

e) If safe to do so and if it can be accomplished from outside the confined space, shutdown non-essential equipment that is located within the confined space

f) Establish staging area for additional arriving apparatus and personnel.

-END-