

SCOTTS VALLEY FIRE PROTECTION DISTRICT		
STANDARD OPERATING PROCEDURES	ARTICLE: II	SOP: 2405
	SECTION: 2400 RESPONSE PROCEDURES	
	SUBJECT: CONFINED SPACE EMERGENCIES	

Purpose: To provide an outline of operations, procedures, responsibilities and a minimum safety requirement to be followed while entering, exiting, and working in confined spaces at normal atmospheric pressure.

Scope: It will be the responsibility of each member of the district to exercise appropriate command and control protocol in the implementation of this procedure.

Classifications:

National Institute for the Occupational Safety and Health (NIOSH) has three (3) classifications for confined spaces, based on life threatening characteristics.

- **Class A:** An environment which is immediately dangerous to life or health (entry by permit only; shall have a posted sign).
- **Class B:** An environment that has the potential for causing injury and illness if preventative measures are not used, but is not immediately dangerous to life or health.
- **Class C:** An environment that has potential hazards which would not require any special modifications of the work procedures.

Definitions:

Confined Space:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit; and
- Is not designed for continuous occupancy.

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Permit Required Confined Space:

- Contains or has the potential for engulfing an entrant;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
- Contains any other recognized serious safety or health hazards.

Lockout/Tagout:

The placement of a lock/tag on the energy isolating device in accordance with an established procedure, indicating that the device shall not be opened until the removal of the lock/tag.

Hazardous Atmospheres:

Any atmosphere which may cause immediate or delayed death, injury, or disease and exposures are toxic, poisonous, corrosive, flammable or has the ability to be physically incapacitating or dangerous.

Hazardous atmospheres include:

- levels of flammability of 10% of the LEL;
- oxygen atmospheres with levels below 19.5% or enriched atmospheres above 23.5%, or airborne combustible dust greater than its LEL.

Qualified Person(s):

One who is capable of identifying hazards in the work area, or working conditions that are hazardous or dangerous to personnel, and is authorized to take corrective measures to eliminate them; one who is trained and familiar with accepted confined space standards and requirements.

Attendant:

An individual stationed outside the confined space who is trained as required to monitor conditions; i.e., entrance/exit of authorized entrants, monitoring of atmospheric conditions, communicating with authorized entrants, etc. (fire district employee).

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Authorized Entrant(s):

An individual trained to a level of an attendant, with the addition of understanding the hazardous faced, proper use of personal protective equipment, use of patient/victim extrication equipment and procedures, communication systems, etc. (fire district employee).

Entry Supervisor:

An individual trained to the level of an authorized entrant. Entry supervisors may often be the ranking officer trained in confined space on scene. He/she may have additional training on signs and symptoms indicative of exposure to potential hazards and will confirm that the operations are consistent with applicable standards (fire district employee).

Safety Considerations:

A major cause of confined space injuries and/or fatalities is the failure to recognize the incident as ***CONFINED SPACE INCIDENT***. Do not underestimate the seriousness of confined space incidents. Hazards shall be identified for each confined space incident. This shall include, but not be limited to, the following:

- The past and current uses of the confined space which may affect the atmosphere
- The physical characteristics, configurations and location of the confined space
- Biological hazards
- Mechanical hazards
- Engulfment hazards
- Existing or the potential hazards of flammable or toxic environments

Procedure:

1. Response
 - A. Confined space emergencies will most likely be reported and dispatched as a medical emergency or rescue situation. In these instances, the normal response of a single engine company of jurisdiction is appropriate.

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- B. If dispatch information indicates or, if upon arrival, the first engine company makes the determination that the incident involves a confirmed confined space with the possibility of entry for the purpose of rescue stabilization or extrication, the following shall be requested as a minimum response:
- Two engine companies
 - Off-duty HazMat team
 - Battalion chief

Note: If the response does not provide adequate numbers of certified personnel or resources, a special call should be processed to provide such personnel and resources.

2. Actions


- A. Size Up
- Determination of confined space rescue incident
 - Identify hazard potential
 - Assign and initiate the start of an entry permit
 - Activate the ICS to the degree necessary to control the emergency
 - Develop a plan and alternatives
 - Assign a safety officer
- B. Stabilize the Immediate Area
- Set up an operations perimeter
 - Confirm lockout/tagout conditions
- C. Eliminate Ignition Sources
- D. Provide Lighting, Ventilation

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3. Entry Procedures

- A. *Determine a Contingency Plan* - The operation should follow a clear and concise course of action with a back up plan in place. Plan components shall include:
- Hazard identification
 - Communication plan
 - PPE needed
 - Backup personnel and attendants
- B. *Entry and Exit Points* - Shall be identified and shall be posted with an attendant.
- C. *Identify Required Equipment* - Enter, retrieve, and exit the space in the safest manner. All personnel entering and descending more than five (5) feet below the entrance point shall be attached to a retrieval system with fall restraint.
- D. *Hazard Evaluation* - Identify all potential hazards to the safety officer or entry officer as soon as possible.
- E. *Lockout/Tagout* - All energy sources which are potentially hazardous to the entrant shall be secured and confirmed secured prior to entry.
- F. *Protective Clothing* - Full turnouts should be worn throughout the incident if conditions warrant. When full protective clothing is not practical, the decision of appropriate clothing shall be made by the entry supervisor.
- G. *Respirator Protection* - SCBA or SAR must be worn by all personnel who enter the confined space. A standby team will be fully suited and ready to go in at all times. One standby member for each member in the confined space is required.
Note: Administration of oxygen is not recommended in a confined space due to the possibility of creating an enriched atmosphere.

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- H. *Travel Distance in a Confined Space* - Entrants shall not exceed a travel distance that would preclude the ability of a five (5) minute reserve of rescue escape bottle to provide adequate reserve air to exit the confined space.
- I. *Monitoring the Atmosphere* - Prior to entry, the internal atmosphere shall be tested at all levels for the following conditions:
- Oxygen content
 - Flammable gases and vapors
 - Potential toxic air contaminants
- J. *Ventilation* - The confined space should be ventilated prior to the entrance of the authorized entrant.
- K. *Communication* - Communication in the form of voice or eye contact is preferred. Radios may not be intrinsically safe and rope signal systems are not always effective.
- L. *Decontamination* - If decontamination is determined to be necessary, a decon operation must be established.
- M. *Victim Removal and Care* - Only life threatening injuries should be treated and this treatment should be weighed against remaining in the confined space.

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