CONFINED SPACE

An Inadequate Plan Won’t Cut It

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Confined Space

Confined space is space that:

• Is large enough & so configured that employee can bodily enter & perform assigned work

• Has limited or restricted means for entry or exit (i.e. tanks, vessels, silos, pits, vaults or hoppers)

• Is not designed for continuous employee occupancy
TYPES OF CONFINED SPACE...

• Non-Permitted
  – ... does **NOT** contain physical, chemical or atmospheric hazards capable of causing death or serious physical harm

• Permitted
  – ... **DOES** contain physical, chemical or atmospheric hazards capable of causing death or serious physical harm
Permit-Required
Confined Space

• Has internal configuration such that entrant could be trapped or asphyxiated by inwardly converging walls or by floor which slopes downward & tapers to smaller cross-section

• Contains any other serious safety or health hazard
29 CFR 1910.146
Permit-Required Confined Space Policy

• Scope & application
• Definitions
• General requirements (to include deviation of written plan)
• Permit-required confined spaces
• Permit system
• Entry permit

• Training
• Duties of authorized entrants
• Duties of attendants
• Duties of entry supervisors
• Rescue & emergency services
• Employee participation
Appendices

- **Appendix A** - Permit-Required Confined Space Decision Flow Chart
- **Appendix B** - Procedures for Atmospheric Testing
- **Appendix C** - Examples of Permit-Required Confined Space Programs
- **Appendix D** - Confined Space Pre-Entry Check List
- **Appendix E (If Applicable)** - Sewer System Entry
- **Appendix F** - Rescue Team or Rescue Service Evaluation Criteria
Definitions

• **Attendant**
  – Individual stationed outside one or more permit spaces who monitors authorized entrants & performs all attendant’s duties assigned in employer’s permit space program
Duties of Attendants

• Knows hazards that may be faced during entry
• Aware of possible behavioral effects of hazard exposure in authorized entrants
• Continuously maintains accurate count of authorized entrants
• Remains outside permit space during entry operations until relieved by another attendant
Duties of Attendants

• Communicates with authorized entrants
• Monitors activities inside & outside space
• Summons rescue & other emergency services
• Performs non-entry rescues as specified by employer's rescue procedure
• Performs no duties that might interfere with primary duty to monitor & protect authorized entrants
Duties of Authorized Entrants

• Know hazards that may be faced during entry, including information on mode, signs or symptoms & consequences of exposure
• Properly use equipment as required by paragraph (d)(4)
• Communicate with attendant as necessary to enable attendant to monitor entrant status & enable attendant to alert entrants of need to evacuate space as required by paragraph (i)(6)
Duties of Authorized Entrants

Alert attendant whenever:

– Entrant recognizes any warning sign or symptom of exposure to dangerous situation
– Entrant detects prohibited condition
– Exit from permit space as quickly as possible whenever:
Duties of Authorized Entrants

Exit from permit space...

– Order to evacuate is given by attendant or entry supervisor
– Entrant recognizes any warning sign or symptom of exposure to a dangerous situation
– Entrant detects prohibited condition
– Evacuation alarm activated
Definitions

Engulfment

- Surrounding & effective capture of person by liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging respiratory system
- Can exert enough force on body to cause death by strangulation, constriction or crushing
Definitions

Entry

– Action by which person passes through opening into permit-required confined space

– Entry includes ensuing work activities in space and is considered to have occurred as soon as any part of entrant’s body breaks plane of opening into space
Definitions

Entry Supervisor

- Person (such as employer, foreman or crew chief) responsible for determining if acceptable entry conditions are present at permit space where entry is planned, for authorizing entry & overseeing entry operations & for terminating entry

- Note: entry supervisor *may* serve as attendant or authorized entrant, as long as that person is trained & equipped as required for each role filled

  - Duties of entry supervisor may be passed from one individual to another during entry operations
Duties of Entry Supervisor

• Knows hazards that may be faced during entry, including information on mode, signs or symptoms & consequences of exposure

• Verifies, by checking that appropriate entries have been made on permit, all tests specified by permit have been conducted & all procedures & equipment specified by permit are in place before endorsing permit & allowing entry to begin

• Terminates entry & cancels permit as required by paragraph (e)(5)
Duties of Entry Supervisor

• Verifies that rescue services are available & means for summoning are operable
• Removes unauthorized individuals who enter or attempt to enter permit space during entry operations
• Determines, whenever responsibility for permit space entry operation is transferred & at intervals dictated by hazards & operations performed within space, that entry operations remain consistent with terms of entry permit & acceptable entry conditions are maintained
Definitions

Hazardous atmosphere
– Atmosphere that may expose employees to risk of death, incapacitation, impairment of ability to self-rescue (i.e. unaided escape from permit space), injury or acute illness from one or more following causes:
  • Flammable gas, vapor or mist in excess of 10% of Lower Flammable Limit (LFL)
Definitions

Hazardous atmosphere

– Atmospheric concentration of any substance for which dose or PEL could result in employee exposure in excess of dose or PEL

– Note: atmospheric concentration of any substance not capable of causing death, incapacitation, impairment of ability to self-rescue, injury or acute illness due to health effects is not covered
Definitions

Hazardous atmosphere

– Any other atmospheric condition that is an immediate danger to life and health.

– Note: for air contaminants which OSHA has no dose or PEL, other sources of information, such as MSDSs that comply with 29 CFR 1910.1200, published information & internal documents can provide guidance in establishing acceptable atmospheric conditions.
Definitions

Rescue service

– Personnel designated to rescue employees from permit spaces

• Note: rescue personnel may be industry emergency personnel, outside rescue service or combination of teams
Rescue & Emergency Services

• Rescue and emergency services
  – Employer who designates rescue & emergency services, pursuant to paragraph (d)(9) shall:
    • Evaluate prospective rescuer's ability to respond to rescue summons in timely manner, considering hazard(s) identified
Definitions

• Testing
  – Process by which hazards that may confront entrants are identified & evaluated
  – Testing includes specifying tests to be performed in permit space
  – Note: testing enables employers to devise & implement adequate control measures for protection of authorized entrants & determine if acceptable entry conditions are present immediately prior to & during entry
Testing Protocol

• Before employee enters space, internal atmosphere shall be tested, with calibrated direct-reading instrument, for following conditions in order given
  – Oxygen content
  – Flammable gases & vapors
  – Potential toxic air contaminants
PRCS Written Plan Outline

- Introduction - company policy
- Definitions
- Identification of confined spaces
- Notification and warning
- Hazard identification
- Equipment for entry & rescue
- Evaluation of confined spaces
- Permits
- Authorized entrants
- Authorized attendants
PRCS Written Plan Outline

• Entry supervisors
• Entry procedures
• Communications procedures
• Rescue procedures
• Closure procedures
• Coordination of work with contractors
• Program review and update (required annually)
• Training requirements and documentation
Thank You!

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