Is this a Confined Space?

Definition of a Confined Space

- Must meet all three of the following:
  - Large enough and so configured that an employee can bodily enter to perform work.
  - Is not designed for continuous employee (human) occupancy.
  - Has limited or restricted means of entry or exit
    - What does this mean???

Some examples of “limited or restricted means of exit/entry”:

- A ladder to enter/exit space
- Doors that impede upright entry/exit
- Barriers/obstructions within space
- Climbing/crawling required within space
- Travel time to a point of safety (exit/entry)
- Anything else that may hinder your ability to escape or perform a “self rescue” in the event of an emergency.
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Potential Confined Space Hazards

- Physical Hazards/Engulfment/Entrapment
- Oxygen Deficiency (<19.5%)
- Oxygen Enrichment (>23.5%)
- Flammable/Combustible Atmospheres
- Toxic Atmospheres
- Any other IDLH Conditions

Physical Hazards

- Physical Hazards:
  - Temperature, Sharp objects, Moving equipment, Pressurized lines, electrocution etc…
- Engulfment:
  - Liquids, Grains, Powders, etc…
- Entrapment:
  - Converging Walls, Sloping Floors, tight spaces etc...

Oxygen Deficiency

<19.5% Oxygen in Atmosphere

NO ENTRY WITHOUT SPECIAL EQUIPMENT (SCBA, SUPPLIED AIR)

Operations that may decrease Oxygen
- Welding
- Torch Cutting
- Brazing
- Natural (rusting)
Flammable/Combustible

- Flammable materials
  - Vapors & Fumes
  - Dusts & Mists
  - Gases, etc...
- Upper and Lower Explosive Limits
  (UEL & LEL) - Rich and Lean
- Ignition Source

Toxic Atmospheres

- Toxic (substance that is poisonous to living tissue)
  - Gases, vapors, fumes, mists
  - Hydrogen Sulfide, Radon, Carbon Monoxide, etc...
- Can result from natural conditions, work performed, disturbances, improper storage of items or an outside contaminant source.

OSHA Standard 1910.146 - Permit Required Confined Spaces

- A Permit Space is a confined space that also has one or more of the following:
  - Contains or has the potential to contain a hazardous atmosphere
  - Contains a material that has the potential to engulf
  - Has an internal configuration that could trap or asphyxiate due to tapering walls/sloping floor
  - Contains any other serious health or safety hazard
To enter all “Permit Spaces”

- Additional training beyond Awareness
  - Retrieval Systems, Respiratory Protection, PPE
  - First Aid & CPR for entrants and attendants
  - Proper Purging, Inerting, Flushing and Ventilation of Spaces, etc...
- Rescue Service
- Testing/Monitoring
- Data and Equipment

ALL CONFINED SPACES ARE CONSIDERED PERMIT REQUIRED SPACES PRIOR TO PERFORMING A HAZARD EVALUATION, WHICH MUST BE COMPLETED PRIOR TO EACH ENTRY.

What Confined Spaces can we enter?

- **Non-permit space:**
  - Does not contain or have the potential to contain any atmospheric hazards
  - Does not contain any hazard capable of causing death or serious physical harm
- **Certain Permit spaces:**
  - Utilizing “Alternate Entry Procedures”
  - Confined Space Pre-Entry Checklist
Alternate Entry Procedures

- Can be used if the following are met:
  - The only hazard posed is an actual or potentially hazardous atmosphere
  - It can be demonstrated that ventilation alone will maintain the space safe for entry
  - There is monitoring and inspection data that supports the statements above
  - The monitoring and inspection data must be obtained without entry into the space.

Alternate Entry Procedures

- Entry to the space can be accessed safely (slow removal of covers)
- The entrance to the space shall be properly guarded to prevent injury to entrants or persons adjacent to the space
- The internal atmosphere shall be tested prior to entry and during work with a direct-read instrument for (oxygen, flammables and toxics)
- No hazardous atmosphere is allowed while an employee is inside the space (if meter alarms, employee must leave immediately)
- Continuous forced air ventilation from a clean air source shall be used and so directed to ventilate the immediate vicinity of the entrant
- The employer shall verify that the space is safe for entry with a written certification prior to any entry into the space
- ENTRY NOT ALLOWED UNLESS ALL CONDITIONS ARE MET

Entrant Duties

- CPR & First Aid Training
- Review Procedures
- Calibrate Meter
- Pre-Entry Checklist
  - Hazard Analysis
  - Atmospheric Evaluation
  - Atmospheric Sampling
  - Supervisor Sign-off
- Ventilation
- Sample Again
Attendant Duties

- Optional for Alternate Entry
- CPR & First Aid Training
- Remain Outside Confined Space
- Maintain Communication
- Monitor Outside Space
- Recall entrant from space if any hazard arises
- Attendant non-entry rescue
- Summon Rescue Service or call 911 (if necessary)

Regulatory Requirements

- Evaluate workplace for Permit Required Confined Spaces
- Post Warning Signs at the entrance to all spaces
- Train Affected Employees
  - Prior to initial assignment
  - When any change in duties or spaces
  - To insure employee proficiency in entry and procedures

Regulatory Requirements

- If employer decides no entry into spaces:
  - Take measures to prevent employee entry
  - Inform all outside contractors of:
    - Location of all spaces
    - Hazards of spaces
    - Precautions to take prior to entry
    - Coordinate entry with contractor
    - Debrief contractor after entry regarding hazards confronted or created during entry
Regulatory Requirements

• If employer allows entry into spaces they shall develop and implement a written “Permit Required Confined Space Program”.
  • Only trained to use “Alternate Entry Procedures”
• Review & Discuss:
  • Confined Space Meter Use and Calibration
  • Confined Space Pre-Entry Checklist
  • Questions???