1.0 Policy

Systems shall be utilized to ensure the safety of employees who are required to enter confined spaces.

2.0 Purpose

To set forth procedures for safe ingress and egress from confined spaces.

3.0 Scope

Applies to all Sunbelt Controls work sites where work areas involve confined spaces.

4.0 Definitions

Attendant in this case, he/she is an individual stationed outside approved confined spaces and monitors the authorized entrants and also performs all attendants' assigned duties.

Authorized Entrant is an individual who is trained, authorized and designated to enter a confined space.

Blanking or Blinding is absolute closure of a pipe, line, or duct by the fastening of a solid plate (*for example* a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding more than the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space is a space that is large enough and so configured that an individual can bodily enter and perform assigned work but also has limited or restricted means for entry or exit (for example tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry) and is not designed for continuous occupancy. Confined space has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere
- 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
- Contains any other recognized serious safety or health hazard

Confined Space Permit is a written or printed document that allows persons to enter into a permitted confined space.

Double Block and Bleed is the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency is any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permitted confined space that could endanger entrants.

Engulfment describes the surrounding and effective capture of an individual by a liquid or finely divided solid substance (become moveable) that can be aspirated sufficiently enough to cause death (filling or plugging the respiratory system) or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry is the action by which a person passes through an opening into a permit required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Supervisor is the individual responsible for determining if acceptable entry conditions are present at a permitted confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section. An entry supervisor may also be acting as an Attendant.

Hazardous Atmosphere describes an atmosphere that may expose persons to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness.

Line Breaking is the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Non-Permit Confined Space is a confined space that does not contain or with respect to atmospheric hazards, have the potential to contain, any hazard capable of causing death or serious physical harm.

Permit-Required Confined Space Program (permit space program) is the employer's overall program for controlling, where appropriate and protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit System is the written procedure for preparing and issuing permits for entry as well as returning the permit space to service following termination of entry.

Prohibited Condition describes any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Oxygen Deficient Atmosphere is an atmosphere containing less than 19.5% oxygen by volume.

Oxygen Enriched Atmosphere is an atmosphere containing more than 23.5% oxygen by volume.

Rescue Service is personnel who is trained, authorized and designated to rescue employees from permit spaces should an emergency occur.

Retrieval System is the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Testing describes the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

5.0 Requirements

5.1 General

Employees shall be informed of permit required confined spaces for the work site as they are identified.

Only trained and authorized personnel may be permitted to enter a permit required confined space. Each affected employee must be trained prior to initial assignment, change in assignment duties, or if a new hazard is created.

Proficiency of required training shall be documented. The certification shall include employee name, trainer signature/initials and the training date(s). Certification must be made available to employees & their authorized representative

Danger signs or other equivalent means shall be used to warn of existing confined spaces that are accessible by employees and others. The wording shall be "DANGER – PERMIT REQUIRED CONFINED SPACE – DO NOT ENTER" or equivalent language.

All required safety equipment shall be at the confined space work area, in working order, and with all necessary instruments calibrated.

5.2 Initial Evaluation of Confined Spaces

All confined spaces shall be considered as permit required confined spaces until a competent person conducts an initial evaluation of the work site to identify permit required confined spaces. This evaluation shall be recorded on Confined Space Pre-Job Assessment (reference Appendix 12-A) Confined spaces shall be classified as follows:

- Non Hazardous
- Hazardous due to work task
- Hazardous due to internal condition

If the work site contains permit required confined spaces, danger signs stating "DANGER – CONFINED SPACE – ENTER BY PERMIT ONLY" shall be posted to inform employees of the existence and location of the spaces. Bilingual signs shall be posted as necessary.

5.3 Reclassification of Permit Required Spaces

Permit required confined spaces may be reclassified as non-permit spaces under these following circumstances:

- The space has no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space
- If testing and inspection during entry demonstrates that the hazards within the space have been eliminated and remain eliminated

- If the permit required confined space is to be reclassified as a non permit space, the basis for determining that all hazards have been eliminated shall be documented on Permit-Required Confined Space Reclassification Form (reference Appendix 12-B)
- If a hazard returns, personnel shall evacuate the space and the space shall be reevaluated

5.4 Confined Space Entry Form

The responsible supervisor shall ensure that a Confined Space Entry Permit form (reference Appendix 12-C) is completed prior to the entry of any permit required confined space. Completion of this form involves the following activities:

- **PPE Requirements**
- **Assessing hazards**
- **Atmospheric testing**
- **Identification of qualified entrants**
- **Identification of attendant(s)**
- **Identification of entry supervisor**
- **Establishment of Rescue method and Rescue Service**
- **De-energizing systems**
- **Cleaning of confined spaces**
- **Types of equipment required**
- **Hazards that may be generated through work activities**
- **Communication methods**
- **Entrants are qualified**

Confined Space Permits are valid for the work period or work shift and become void and shall be reissued when:

- There is an unplanned interruption in the work process
- The surrounding conditions change that introduce a new hazard
- Personnel leave the space to perform other work
- The work space is left unattended
- The work period (normal time a person or crew is scheduled to work during that day) ends
- When new crew assumes the work assignments of the existing work crew

Permits are not void during any single work period when crewmembers are added to the existing crew or when crewmembers are replaced on a planned rotational basis and all the provisions of the permit are met including training and instructions.

Permits become void when the scope of work exceeds the definition of work defined on the permit, and when work is required to be completed that is not covered by the permit.

Confined Space Permits shall be posted at the confined space work area until the work is completed. At the conclusion of work, the permit shall be returned to the issuer (i.e. Entry Supervisor, client, etc.).

Completed confined space permits shall be kept for a minimum of twelve (12) months and until a review of the confined space permit program is completed.

5.5 Atmospheric Testing

Atmospheric conditions of a confined space shall be tested with calibrated equipment prior to entry of personnel and as identified by the Initial Evaluation of Confined Spaces (as previously noted in sub-section 5.2 of this section [12]). Atmospheric testing shall be completed as indicated below and recorded on the Entry Permit:

- Oxygen content shall be tested. The acceptable range is 19.5 to 23.55 percent
- Test for combustible gas and vapors. Acceptable range is 0 to 10 percent of the Lower Flammable Limit (or Lower Explosive Limit). Record readings on the Entry Permit
- Check for toxic gases and airborne combustibles (e.g. dusts) as identified by the initial determination of confined spaces (as previously noted in sub-section 5.2 of this section [12]). Safe operating levels can be determined from the Permissible Exposure Level (PEL) as listed in OSHA 29 CFR 1910.1000, applicable Material Safety Data Sheets (MSDSs) or as provided by the client
- Employees or their representatives are entitled to request additional monitoring at any time.

See testing equipment requirements under the Industrial Hygiene section twenty-five [25] sub-section 5.3.

5.6 Pre Entry (occurring prior to entry)

All persons who enter confined spaces, Attendant(s), and Entry Supervisor shall receive the following minimum instructions concerning the confined space:

- Know the PPE requirements
- How to recognize symptoms of the specific potential hazards of the confined space
- The consequences of exposure to potential hazards
- When to evacuate the confined space
- Adhering to instruction of the Attendant
- Evacuating when alarms sound
- How communications will be maintained
- What to do if an exposure occurs or there is a release of a substance
- Shutting off tools during an emergency

All sources of energy or contaminants shall be controlled, such as:

- Electrical energy
- Pressurized systems such as pipelines and vessels are isolated through double blocking, blinding, bleeding, and depressurization
- Extreme heat and extreme cold conditions

All pre-entry atmospheric testing shall be completed (reference sub-section 5.5).

The method of ventilating the confined space shall be established (reference sub-section 5.7).

The approved tools shall be identified and staged at or near the entry point of the confined space. Tools, electrical tools and lighting systems shall be approved for use in confined spaces as identified by the Initial Evaluation of confined spaces (reference 5.2).

Depending upon the Hazard Assessment, lighting and electrical equipment may be either low voltage (50V or less), or conventional 120V portable lamps and tools if powered by approved ground-fault circuit interrupter devices and the work is not an electrically hazardous location. Pneumatic equipment may be used instead of electrical equipment.

Required rescue equipment shall be staged at the confined space.

The safe methods to enter, exit, and escape for all personnel (including rescue personnel during retrieval) working in a permit-required confined space shall be developed during the job planning phase, specified on, and included, as needed, on the entry permit. Barriers will be placed if necessary to protect entrants, from external hazards including but not limited to pedestrians and vehicles.

Personnel have been issued required personal protective equipment (PPE). Special PPE may be required for special circumstances.

All persons who enter confined spaces shall be logged using the Confined Space Attendant Log (reference Appendix 12-D).

5.7 Ventilation of Confined Spaces

Powered ventilation shall occur before entry into permit-required confined space(s) and continue until after the employees have left the space. Layout of ventilation equipment will be made in such a manner that the air is being sent throughout the entire confined space. Forced air ventilation shall come from a clean source and may not increase hazards.

Air hoses with diffusers may not be used to provide forced ventilation.

Air sampling shall be conducted prior to personnel entry to assure the safety of the space and periodic air sampling shall be continued thereafter in the space when forced ventilation is used.

Forced ventilation may be used to:

- To remove contaminants created by work activities such as welding
- As a method of maintaining controlling the ambient temperature of a confined space when the rise in temperature is caused by atmospheric conditions.

Ventilation shall occur only by forcing air into a confined space. If it is necessary to exhaust hazardous gases, such as those produced when welding, the air being forced into the confined space shall be increased by at least the amount that is being exhausted out of the space.

5.8 Performance of Work

The confined space attendant shall remain at the entry point of the confined space while personnel are inside any permit required confined space.

The confined space attendant shall ensure that only authorized personnel enter the confined space.

Confined space attendants shall not perform any other work activities except that they may also serve as the attending supervisor. The attendant can only monitor one confined space entry at a time.

If an emergency or other unplanned event takes place during the course of work the Confined Space Work Permit is void.

The Attendant and Entry Supervisor have the authority to discontinue work activities at any time.

Compressed gas cylinders may not be taken into any confined space.

The hoses of gas cutting and welding tools shall be inspected for leaks prior to taking them into any confined space.

Scaffolds constructed inside confined spaces shall conform to the provisions of the Scaffold policy section twenty-eight [28] of this manual.

All persons who enter confined spaces shall comply with the provisions of this standard and the confined space permit. This includes:

- Supervisors: *Only 1 "Entry Supervisor" is allowed per confined space. This supervisor shall coordinate activities for all personnel in the confined space regardless of company.*
- Inspectors
- Surveyors
- Observers
- Scaffold Builders
- Engineers
- Vendors
- Contractors, subcontractors, and other employers

Sources of ignition (e.g., flame. arc, or spark) shall not be permitted in any confined space until tests have ensured that the percentage of combustible/flammable gas or vapor is not more than zero (0) % of the Lower Explosive Limit (LEL).

5.9 Emergencies

Emergency procedures and roles must be established prior to entry. If rescue is to be provided by sources outside of Sunbelt Controls, these personnel must inspect, practice in the work area and decline if they so choose. Under IDLH(immediately dangerous to life or health) conditions, rescue team must be onsite during such periods. These personnel must also sign onto the agreed confined space plan.

To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a confined space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant.

The entry supervisor, prior to the initial entry of personnel into a confined space, shall ensure the rescue equipment and retrieval system is functioning properly.

Retrieval systems shall meet the following requirements to the greatest extent possible:

- Each authorized entrant shall use a full body harness with a retrieval lifeline attached at the center of the entrant's back near shoulder level, or above the entrant's head or safety coveralls with built-in harness, with a retrieval lifeline attached at the near shoulder level of the entrant's back, or above the entrant's head
- Wristlets may be used in lieu of the full body harness if the entry supervisor can demonstrate that the use of a full body harness is not feasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative
- The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical type confined spaces more than 5 feet deep
- The safety harness shall be of the type that permits easy rescue of personnel from the confined space during emergency conditions and may be either the harness type that suspends a person in an upright position or the wrist type rescue harness. (A hoisting device or other effective means for lifting personnel from confined spaces is preferred)
- Lifelines shall have a minimum breaking strength of 5,400 pounds

5.10 Completion of Work

When the work is completed in a confined space the following, as a minimum shall be completed:

- All tools, equipment and materials shall be removed
- The space shall be inspected to ensure no personnel are inadvertently left in the confined space according to the Energy Control section fourteen [14] of this manual
- The area surrounding the confined space shall be clean of materials, equipment, scraps, and debris
- The supervisor responsible for the confined space work shall inspect the work location to ensure cleanup of materials, tools, and other items is complete
- (Lockout) locks are removed only when work is completed
- A review of activities conducted and any previously unforeseen events shall be reviewed and results incorporated into future confined space entries.

6.0 References

OSHA 29 CFR 1910.146