PERMIT-REQUIRED CONFINED SPACE PROGRAM

NOTE: This Recommended Industry Safety Practice (RISP) is intended solely as an introduction and guide to an OSHA mandated Permit Required Confined Space Program. Individual companies must evaluate the specifics of their own facilities and incorporate the elements of this RISP as necessary to ensure the safest possible confined space entry conditions. This RISP should not be interpreted as a comprehensive guide to all confined spaces, and should not be considered a substitute for site-specific procedures and training.

The first consideration for all employers is: 1910.146(c)(1) The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces.

The OSHA Decision-tree Flowchart can serve as a useful tool to help your company determine which best methods and practices work for you. As always, there may be additional state or even local considerations.

The employer shall evaluate the workplace to determine if any spaces are permit-required confined spaces. 1910.146(c)(1)

Definitions:

"Confined space" means a space that:
(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
(2) 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
(3) Is not designed for continuous employee occupancy.

"Non-permit confined space" means 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 (permit space)" means a confined space that has one or more of the following characteristics:
(1) Contains or has a potential to contain a hazardous atmosphere;
(2) Contains a material that has the potential for engulfing an entrant;
(3) 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
(4) Contains any other recognized serious safety or health hazard.

"Permit-required confined space program (permit space program)" means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

IDENTIFICATION OF CONFINED SPACES
Examples of Potential Confined Spaces:

The following list is designated to aide in identifying confined spaces which may be found in a recycling facility. Confined spaces should not be limited to this list and should be considered permit required until proven otherwise.

- Automobile crushers
- Bag house
- Baler/hopper pits
- Barges (for scrapping or loading)
- Compactors
- Conveyor pits
- Cyclones
- Free standing shears
- Manholes
- Oil/water septic systems
- Scale pits
- Sewers
- Shredder mills
- Silos
- Storm water collection pits
- Tanks/tank cars
- Trucks

Potential Hazards:

Note that operations performed in spaces classified as non-permit required confined spaces (e.g., welding, cutting, use of solvents or gasoline engines) can introduce hazards that would cause the space to be requalified as a permit-required confined space.

- Atmospheric – oxygen, flammable/explosive, toxic
- Engulfment
- Entrapment
- Fall hazard
- Fire
- Changing atmosphere – oxygen, flammable, toxic
- Falling material from conveyors
- Dust/Combustible Dust
- Aerosolized particles
- Electric shock
- Moving hydraulic parts
- Noise
- Pinch points
- Slippery walking/working surfaces
- Jagged edges on finished product
- Mobile equipment traffic
FLOW CHART – DECISION-TREE

Appendix A to §1910.146 -- Permit-Required Confined Space Decision Flow Chart

APPENDIX A TO §1910.146—PERMIT-REQUIRED CONFINED SPACE DECISION FLOW CHART

Does the workplace contain Confined Spaces as defined by §1910.146 (b)?

YES

Consult applicable OSHA standards.

NO

Does the workplace contain Permit-required Confined Spaces as defined by §1910.146(b)?

YES

Inform employees as required by §1910.146 (c)(2).

Will permit spaces be entered?

YES

Prevent employee entry as required by §1910.146 (c)(3). Do task from outside of space.

NO

Will contractors enter?

YES

Task will be done by contractors’ employees. Inform contractor as required by §1910.146 (c)(8)(i), (ii) and (iii). Contractor obtains information required by §1910.146 (c)(9)(i), (ii) and (iii) from host.

NO

Both contractors and host employees will enter the space.

YES

Coordinate entry operations as required by §1910.146 (c)(8)(iv) and (d)(11). Prevent unauthorized entry.

NO

Prevent unauthorized entry. STOP

Will host employees enter to perform entry tasks?

YES

NO

Does space have known or potential hazards?

YES

Not a permit-required confined space. 1910.146 does not apply. Consult other OSHA standards.

NO

Can the hazards be eliminated?

YES

Employer may choose to reclassify space to non-permit required confined space using §1910.146 (c)(7).

NO

Can the space be maintained in a condition safe to enter by continuous forced air ventilation only?

YES

Space may be entered under §1910.146 (c)(5).

NO

Prepare for entry via permit procedures.

Verify acceptable entry conditions (Test results recorded, space isolated if needed, rescuers/means to summon available, entrants properly equipped, etc.)

YES

NO

Permit issued by authorizing signature.

Acceptable entry conditions maintained throughout entry.

YES

NO

Entry tasks completed. Permit returned and canceled.

Audit permit program and permit based on evaluation of entry by entrants, attendants, testers and preparers, etc.

Emergency exists (Prohibited condition). Entrants evacuated entry aborts. (Call rescuers if needed). Permit is void. Reevaluate program to correct/prevent prohibited condition. Occurrence of emergency (usually) is proof of deficient program. No re-entry until program (and permit) is amended. (May require new program.)

CONTINUE

1 Spaces may have to be evacuated and re-evaluated if hazards arise during entry
**Protective Equipment:**

- 4 gas meter (and means or method to test for any other potential atmospheric hazard, ie methane)
- Hard hats as needed
- Safety glasses as needed
- Steel toe/steel Shank work boots
- Gloves as needed
- Hearing protection as needed
- Gloves as needed
- Respirator as needed
- Communication equipment
- Lighting (may need to be non-explosive)
- Air Blowers if needed (forced ventilation -(may need to be non-explosive))
- Retrieval and Rescue equipment including anchorage, body wear (harness) & connector; retrieval systems, personnel hoists, SCBA, and other specialized equipment.

**SAMPLE ENTRY PERMIT FORM – SEE ATTACHMENT 1**

**ADDITIONAL CONSIDERATIONS**

If employees are to enter permit required confined spaces, additional considerations include:

1. **CLASSIFICATION OF EMPLOYEES:**
   - Authorized entrants, Attendants, and Entry supervisors.

2. **TRAINING REQUIREMENTS:**
   - Provide training so that all employees have the necessary understanding, skills, and knowledge to perform the job safely. This includes training for: Authorized entrants, Attendants, and Entry supervisors. Training certification must include the employee’s name, the signature or initials of the trainer, and the dates of training.

   **REFRESHER TRAINING** - Provide refresher training whenever an employee’s duties change, hazards in the confined space change, or an evaluation of the confined space entry program identifies inadequacies in the employee’s knowledge. Refresher training must also be certified.

3. **RESCUE and EMERGENCY SERVICES:**

   “OSHA (See 1910.146 Non-Mandatory Appendix F -- Rescue Team or Rescue Service Evaluation Criteria ) believes that compliance with all the provisions of §1910.146 will enable employers to conduct permit space operations without recourse to rescue services in nearly all cases. However, experience indicates that circumstances will arise where entrants will need to be rescued from permit spaces. It is therefore important for employers to select rescue services or teams, either on-site or off-site, that are equipped
and capable of minimizing harm to both entrants and rescuers if the need arises.”

Sample policy for internal rescue plan:

Our company utilizes its own employees to perform rescue services in the event of a permit space emergency. This group of employees has been trained, at a minimum, to:

- Perform the assigned rescue duties;
- Correctly use personal protective equipment (PPE) required for the job;
- Establish proficiency as an authorized entrant, as provided by 1910.146(g) and (h); and
- Perform basic first-aid and cardiopulmonary resuscitation (CPR).

Our company also ensures that at least one member of the rescue team holds a current certification in first-aid and CPR, and that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces will, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

______________________ conducts our rescue and emergency training.
The following designated persons currently make up our emergency rescue team _________________.

**Contractors**

When contractors enter a confined space, your company must ensure that the contractor utilizes an effective confines space entry program. Furthermore, your company must inform the contractor of the known hazards of the space, and likewise require them to inform your company of any new hazards that are discovered during the course of their operations.
ATTACHMENT 1

Confined Space Entry Permit – VALID FOR 8 HOURS ONLY

Date and Time Issued: _______________ Date and Time Expires: ________
Job site/Space I.D.: ________________ Job Supervisor: ________________
Equipment to be worked on: __________ Work to be performed: _________

Stand-by personnel: __________________ __________________ __________________

1. Atmospheric Checks:  Time ________
   Oxygen ________% 
   Explosive ________% L.F.L.
   Toxic ________PPM

2. Tester’s signature: _____________________________

3. Source isolation (No Entry):   N/A   Yes   No
   Pumps or lines blinded,    ( ) ( ) ( ) 
   disconnected, or blocked  ( ) ( ) ( )

4. Ventilation Modification:      N/A   Yes   No
   Mechanical               ( ) ( ) ( ) 
   Natural Ventilation only ( ) ( ) ( )

5. Atmospheric check after isolation and Ventilation:
   Oxygen ________%               (IDLH at <19.5% or >23%)
   Explosive ________% L.F.L      (maximum of 10%)
   Toxic ________PPM
   Time ____________
   Testers signature: _____________________________
6. Communication procedures: ____________________________________________
_____________________________________________________________________

7. Rescue procedures: _______________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

8. Entry, standby, and back up persons:               Yes       No
Successfully completed required training?               ( )       ( )
Is it current?                                  ( )       ( )

9. Equipment:                                N/A       Yes       No
Direct reading gas monitor -
tested                                               ( )       ( )       ( )
Safety harnesses and lifelines
for entry and standby persons                     ( )       ( )       ( )
Hoisting equipment                                  ( )       ( )       ( )
Powered communications                             ( )       ( )       ( )
SCBA's for entry and standby
persons                                                 ( )       ( )       ( )
Protective Clothing
N/A Yes No                                         ( )       ( )       ( )
All electric equipment listed
Class I, Division I, Group D
and Non-sparking tools                             ( )       ( )       ( )

10. Periodic atmospheric tests:
Oxygen       ____%    Time ____    Oxygen       ____%    Time ____
Oxygen       ____%    Time ____    Oxygen       ____%    Time ____
Explosive    ____%    Time ____    Explosive    ____%    Time ____
Explosive    ____%    Time ____    Explosive    ____%    Time ____
Toxic        ____%    Time ____    Toxic        ____%    Time ____
Toxic _____%  Time _____  Toxic _____%  Time _____

We have reviewed the work authorized by this permit and the information contained here-in. Written instructions and safety procedures have been received and are understood.

Entry cannot be approved if any squares are marked in the "No" column.

This permit is not valid unless all appropriate items are completed.

Signatures

Permit Prepared By: ________________________________

Approved By: ________________________________

Reviewed By: ________________________________

This permit to be kept at job site. Return job site copy to Safety Office following job completion.