Confined Space Entry Sample Program

Prepared for:
Date:

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I. FORWARD

This Permit-Required Confined Space (PRCS) Program is provided to protect authorized employees who must enter confined spaces and may be exposed to hazardous atmospheres engulfment in materials conditions which may trap or asphyxiate due to converging or sloping walls or contains any other safety or health hazard.

Many workplaces contain confined spaces, not designed for human occupancy, which due to their configuration hinder employee activities including entry, work, and exit. Asphyxiation is the leading cause of death in confined spaces. Also, there have been cases when employees entering confined spaces were harmed, ground-up by augers, crushed, or battered by moving parts inside vessels, mixers, etc. The nature of confined spaces can cause toxic vapors to become highly toxic and harmful and, in some cases, immediately dangerous to life and health (IDLH) unless adequate precautions are taken.

This program assists to provide the measures necessary

1. to prevent unauthorized entry into permit-required confined spaces,
2. identify and evaluate permit space hazards and
3. implement the means, procedures, and practices necessary for safe entry operations.

Each workplace is unique so the approach to adhere to program requirements may vary. Always remember that 29 CFR 1910 General Industry compliance standards are the minimum requirements to follow.

II. SCOPE AND APPLICATION

This Permit-Required Confined Space (PRCS) Program covers all employees who enter permit confined spaces and contains the practices and procedures for their safe entry. *Please refer to 29 CFR 1910.146 for all complete detail of the standard: https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.146.*

III. COORDINATION

The PRCS coordinator is _____, who is responsible for maintaining a current copy of the program and making it available to all employees. Specific questions about the program and interpretations should be directed to the PRCS Program coordinator.

IV. DEFINITIONS

A. Acceptable entry conditions mean the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter and work within the space.

B. Attendant means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

C. Authorized entrant means an employee who is authorized by the employer to enter a permit space.

D. Blanking or blinding means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate.

E. 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.

F. Double block and bleed mean 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.

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

H. Engulfment means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction or crushing.

I. Entry means 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.

J. Entry permit (permit) means the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

K. Entry supervisor means the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

L. **Note:** An entry supervisor also may serve as an attendant or as an authorized entrant if that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during an entry operation.

M. Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment or ability to self-rescue (that is, escape unaided from a permit space) injury, or acute illness from one or more of the following causes:
   1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL)
   2. Airborne combustible dust at a concentration that meets or exceeds it LFL
      a. **Note:** This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.

   3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent

   4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this part and which could result in employee's exposure in excess of its dose or permissible exposure limit
      a. **Note:** An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment or ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

   5. Any other atmospheric condition that is immediately dangerous to life or health
      a. **Note:** For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communications Standard, 29 CFR 1910.1200(g), published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

N. Hot work permit means the employer's written authorization to perform operations (for example, riveting, welding, cutting, burning and heating) capable of providing a source of ignition.

O. Immediately dangerous to life or health (IDLH) means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

P. **Note:** Some materials, such as hydrogen fluoride gas and cadmium vapor, for example – may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Q. Inerting means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.
   a. **Note:** This procedure produces an IDLH oxygen-deficient atmosphere.

R. Isolation means the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding misaligning or removing

sections of lines, pipes or ducts a double block and bleed system lockout or tagout of all sources of energy or blocking or disconnecting all mechanical linkages.

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

T. 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.

U. Oxygen-deficient atmosphere an atmosphere containing less than 19.5 percent oxygen by volume.

V. Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

W. 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.

X. 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.

Y. Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

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

AA. Rescue service means the personnel designated to rescue employees from permit spaces.

BB. Retrieval system means 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.

CC. Testing means the process by which the hazards that may confront entrants or a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.
   a. **Note:** Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to and during entry.

V. GENERAL REQUIREMENTS

This PRCS program covers the safety requirements, including a permit system, for employees to enter confined spaces, designated as permit-required confined spaces (permit spaces) which:

- pose special dangers for entrants
- have configurations hampering efforts
- require protection for entrants from serious hazards including atmospheres which are or may be:
    - toxic,
    - explosive, or
    - asphyxiating and
- have other hazards.

Permit-Required Confined Spaces (PRCS)

The workplace has been evaluated to identify the permit-required confined spaces.

Alternate Procedures for Entering Permit Confined Spaces

Alternate procedures are used for entry into permit spaces under the following conditions:

1. The only hazard posed is an actual or potential hazardous atmosphere
2. It has been demonstrated that continuous forced air ventilation alone is sufficient to maintain safety for entry
3. Monitoring and inspection data has been developed that supports only an atmospheric hazard and continuous forced air ventilation alone maintains safety
4. If an initial entry is necessary, an entry permit is used
5. Entry into the permit space complies with the following:
    a. Any conditions making it unsafe to remove an entrance cover is eliminated before the cover is removed
    b. When entrance covers are removed, the openings are promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that protects each employee working in the space from foreign objects entering the space
    c. Before an employee enters the space, the internal atmosphere is tested, with a calibrated direct-reading instrument, for the following conditions in the order listed:
        i. Oxygen content,
        ii. Flammable gases and vapors, and
        iii. Potential toxic air contaminants
    d. There is no hazardous atmosphere within the space whenever any employee is inside the space.
    e. Continuous forced air ventilation is used as follows:
        i. No employee enters the space until the forced air ventilation has eliminated any hazardous atmosphere
        ii. The forced air ventilation is directed to ventilate the immediate areas where an employee is or will be present within the space and continues until all employees leave the space
        iii. A clean source of forced air supply is used for ventilation which does not increase the hazards in the space.
    f. The atmosphere within the space is periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
    g. If a hazardous atmosphere is detected during entry:
        i. Each employee leaves the space immediately
        ii. The space is evaluated to determine how the hazardous atmosphere developed and
        iii. Measures are implemented to protect employees from the hazardous atmospheres before any subsequent entry.

iv. The space is verified for safe entry and that the necessary protective measures described above have been taken through a written certification.

Changes in Space Use or Configuration

When there are changes in the use and configuration of a non-permit confined space that might increase the hazards to entrants, the space is reevaluated and, if necessary, reclassified as a permit-required confined space.

Confined Space Reclassification

A permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

6. If the space poses no actual or potential atmospheric hazards and the hazards are eliminated without entry, and if the non-atmospheric hazards remain eliminated.

7. Entry into the space to eliminate the hazards is under an authorized permit and testing and inspection during the entry demonstrate the hazards were eliminated without requiring continuous forced air ventilation.

8. A certification is documented showing the hazards were eliminated.

9. If hazards arise within a permit space that has been declassified to a non-permit space, each employee must exit the space and the space is reevaluated to determine if it must be reclassified as a permit space.

Contractors

In some cases, contractors and other non-employees may enter permit spaces to perform work. When contractors and others enter permit spaces the following procedures are followed:

1. They (contractors) are informed that the workplace contains permit spaces and that they must follow a permit space entry program per OSHA standard 29 CFR 1910.146 and use an authorized permit for entry.

2. Apprise the contractor of the elements, including the hazards identified and the experience with the space making it a permit space

3. Apprise the contractor of the precautions or procedures implemented for protection of employees in or near permit spaces and

4. Debrief the contractor at the conclusion of the entry regarding the permit space program followed and regarding any hazards confronted or created in the space(s) during entry operations.

5. All contractors performing permit space entry are required to:
    a. Obtain and use the available information provided
    b. Coordinate entry operations with others working in or near permit spaces and
    c. Inform the host employer during debriefing or entry of the permit space program that will be followed, and any hazards confronted or created in the space(s).

VI. PERMIT-REQUIRED CONFINED SPACE PROGRAM

General

This permit-required confined space program is designed to prevent unauthorized entry into permit confined spaces, identify and evaluate hazards and establish procedures and practices for safe entry including testing and monitoring conditions.

The program requires for an attendant stationed outside permit space during entry procedures to summon rescuers and prevent unauthorized personnel from attempting rescue and a system for preparing, issuing, using and canceling entry permits. It also includes procedures for entry operations and canceling entry permits and review of the permit program at least annually and additionally as necessary.

The following measures have been implemented as necessary to prevent unauthorized employee entry into permit spaces:

1. All affected employees have been informed through initial safety training about the characteristics and presence of permit spaces.

2. Some permit spaces are also posted with danger signs to supplement the safety training. However, the posting of danger signs is not all inclusive and each employee must know what a permit space is, the usual hazards involved, and what precautions are required to ensure safe entry so they can help ensure their own protection.

1. The following means, procedures, and practices necessary for safe permit space entry operations have been implemented:
   a. Acceptable Entry Conditions – All permit space entrants protected from atmospheric hazards including oxygen deficiency (less than 19.5%) or increased oxygen concentration (greater than 23.5%), toxic materials (above the exposure limit), flammable gases and vapors, asphyxiating, and engulfment, configuration or any other recognized hazards.
   b. Isolating the Permit Space – All hazardous energy sources associated with permit spaces which may expose entrants to potential injury are isolated, locked out and/or tagged out prior to entry.
   c. Purging, Inerting, Flushing or Ventilating Permit Spaces – All permit entry spaces are thoroughly purged, inerted, flushed and/or ventilated as necessary to ensure the elimination and/or control of all hazards which may cause entrants injury and/or illness.
   a. External Hazards – Pedestrian, vehicle, or other barriers are provided as necessary to protect entrants from external hazards.
   b. Verifying Acceptable Conditions – Conditions in permit spaces are tested and monitored throughout entry as necessary to ensure that they are acceptable for the duration of the authorized entry.

<u>Equipment</u>

The following equipment is provided at no cost to employees, maintained and used properly to ensure the safety of employees entering permit spaces:

- Testing and monitoring equipment
  - Description:
- Ventilating equipment
  - Description:
- Communications equipment
  - Description:
- Personal protective equipment
  - Description:
- Lighting equipment
  - Description:
- Barriers and shields
  - Description:
- Ingress and egress equipment
  - Description:
- Rescue and emergency equipment

- Description:
- Other equipment
  - Description:

Evaluating Permit Space Conditions

Permit space conditions are evaluated (tested/monitored) when entry operations are conducted as follows:

The entry conditions in the permit space are tested to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), in such case, pre-entry testing is performed to the extent feasible before entry and entry conditions are continuously monitored in work areas.

The tests and monitoring are conducted in permit spaces as necessary to determine if acceptable entry conditions are being maintained during entry operations.

When conducting tests for atmospheric hazards, oxygen tests are conducted first, then combustible gases and vapors and then for toxic gases and vapors. The tests are conducted to ensure that test instruments function properly since an oxygen deficient atmosphere may adversely affect the test results.

Attendants

1. **General –** At least one attendant is required outside the permit space into which entry is authorized for the duration of the entry operation.

2. **Duties –** All attendants are required:
   a. To know the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of the exposure
   b. To be aware of possible behavioral effects of hazard exposure in entrants
   c. To continuously maintain an accurate count of entrants in the permit space and ensures a means to accurately identify authorized entrants
   d. To remain outside the permit space during entry operations until relieved by another attendant (once properly relieved, they may participate in other permit space activities including rescue if they are properly trained and equipped)
   e. To communicate with entrants as necessary to monitor entrant status and alert entrants of the need to evacuate
   f. To monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the entrants to immediately evacuate if: the attendant detects a prohibited condition, detects entrant behavioral effects of hazard exposure, detects a situation outside the space that could endanger the entrants or if the attendant cannot effectively and safely perform all the attendant duties
   g. To summon rescue and other emergency services as soon as the attendant determines that entrants need assistance to escape the permit space hazards
   h. To take the following action when unauthorized persons approach or enter a permit space while entry is underway:
      i. Warn the unauthorized persons that they must stay away from the permit space,
      ii. Advise the unauthorized persons that they must exit immediately if they have entered the space, and
      iii. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space
      iv. To perform non-entry rescues as specified by that rescue procedure and entry supervisor and
      v. Not to perform duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

Entrants

1. **General –** All entrants must be authorized by the entry supervisor to enter permit spaces, have received the required training, use the proper equipment, and observes the entry procedures and permit.

2. **Duties –** The following entrant duties are required:
   a. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
   b. Properly use the equipment required for safe entry
   c. Communicate with the attendant as necessary to enable the attendant to monitor the status of the entrants and to enable the attendant to alert the entrants of the need to evacuate the space if necessary
   d. Alert the attendant whenever: the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or any prohibited condition is detected and
   e. Exit the permit space as quickly as possible whenever: the attendant or entry supervisor gives an order to evacuate the permit space, the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, the entrant detects a prohibited condition or an evacuation alarm activated.

Entry Supervisors

1. **General –** Entry supervisors are responsible for the overall permit space entry and must coordinate all entry procedures, tests, permits, equipment and other relevant activities.

2. **Duties –** The following entry supervisor duties are required:
   a. Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms and consequences of the exposure.
   b. Verifies, by checking that the appropriate entries have been made on the permit, all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
   c. Terminate the entry and cancel the permit when the entry is complete or there is a need for terminating the permit.
   d. Verify that rescue services are available and that the means for summoning them are operable.
   e. Remove unauthorized persons who enter or attempt to enter the space during entry operations.
   f. Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with the permit terms and that acceptable entry conditions are maintained.

Testers and Monitors

1. **General –** The accuracy of testing and monitoring equipment may be significantly affected under certain conditions of humidity, pressure, or temperature or by the presence of interfering chemicals. However, if the equipment is properly selected, calibrated and maintained and operated by well-trained employees, the confined space testing and monitoring needs can be effectively met. All persons performing tests and monitoring for permit space entry have been properly trained in the use of and limitations of the following testing and monitoring equipment.

   List the equipment and describe the proper use.

List Equipment	Description of Proper Use:

2. **Procedures for Atmospheric Testing –** Atmospheric testing is required for two distinct purposes: evaluation of the hazards of the permit space and verification that acceptable entry conditions for entry into that space exist.

   a. Evaluation Testing: The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data, and development of the entry procedure, is performed by, or reviewed by, a technically qualified professional (e.g., OSHA consultation service, or certified industrial hygienist, registered safety engineer, certified safety professional, etc.) based on evaluation of all serious hazards.

   b. Verification Testing: The atmosphere of a permit space which may contain a hazardous atmosphere is tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration) are recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.

   c. Duration of Testing: Measurement of values for each atmospheric parameter is made for at least the minimum response time of the test instrument specified by the manufacturer.

   d. Testing Stratified Atmospheres: When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope is be tested approximately 4 feet (1.22m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress is slowed to accommodate the sampling speed and detector response.

<u>Permit System</u>

1. **General** – The entry permit is a vital part of the permit space entry program which documents that the required measures have been taken to ensure entrant safety. All pertinent safety requirements must be recorded on the permit including the isolation, ventilation, tests and monitoring, personal protective equipment and other equipment necessary for entrant safety.

2. **Requirements** – The following requirement must be recorded (documented) on the entry permit.
   a. Permit space to be entered, purpose of the entry, and the date and authorized duration of the entry permit
   b. Names of authorized entrants (or other suitable tracking system)
   c. Current attendant's names
   d. Entry supervisor's name (signature), including original authorizing supervisor
   e. Hazards of the space
   f. Measures used to isolate the space and to eliminate or control the space hazards, before entry
   g. Acceptable entry conditions
   h. Results of initial and periodic tests accompanied by the names, or initials, of the testers and time of the tests
   i. Available rescue and emergency services and how to summon them

j. Communication procedures used by entrants and attendants to maintain contact during entry
k. Equipment, such as personal protective equipment, alarm systems and rescue equipment, to be provided
l. Any other pertinent information necessary to ensure entrant safety and
m. Additional permits, such as hot work, that have been issued to authorize work in the space.

3. Contractors – All contractor entry into permit spaces must comply with all sections of this procedure.

Training

1. **General** – All entry supervisors, attendants and entrants are properly trained initially, and refresher training provided when duties and space hazards change or whenever an evaluation determines inadequacies in the employee's knowledge. The training provides employees with the necessary understanding, skills, and knowledge to safely enter, work in and exit permit spaces. All training is documented with the employee's names, signature or initials of the trainer and training date.

2. **Requirements** – Specific training requirements include, but are not limited to:
   a. Each affected employee is trained
   b. Training is provided:
      i. Before employee is first assigned permit space entry duties
      ii. Whenever there is a change in permit space operations that present a new hazard unknown by the employee
      iii. Whenever there is reason to believe either there are deviations from the entry procedures or inadequacies in the employee's knowledge or use of the procedures
      iv. The training establishes employee proficiency in the required duties and introduces new or revised procedures, a necessary
      v. The training is certified and contains each employee's name, signatures or initials of the trainers, and training dates.
   c. The training certification is available for inspection by employees and their authorized representatives by contacting .

<u>Rescue and Emergency Services</u>

1. **General –** Rescue and emergency services are provided (on-site and/or off-site). Description(s) of the service(s) is provided below. (Employer should select the specific rescue and emergency service(s) they will use.)

2. **On-Site Rescue Services (if used by employer) –** Each member of the rescue service has been provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces. This equipment includes, but is not limited to:
    a. Personal Protective Equipment (PPE)
        i. Respiratory Protection – Self-Contained-Breathing Apparatus (SCBA) (describe)
        ii. Hard Hats (describe)
        iii. Eye Protection (describe)
        iv. Gloves (describe)
        v. Body Protection (describe)
        vi. Foot Protection (describe)
        vii. Other PPE (describe)
    b. Rescue Equipment (describe)
    c. Each rescue service member has been trained to perform the assigned duties as well as the authorized entrant training
    d. Each rescue service member practices making permit space rescues at least once every 12 months, by means of simulated rescue operations. These operations include removing dummies mannequins, or actual persons from actual or representative spaces with similar opening size, configuration, and accessibility which simulate the types of spaces involved in rescues and
    e. Each rescue service member has been trained in basic first aid and in cardiopulmonary resuscitation (CPR). At least one rescue service member holding current certification in first aid and CPR is available for rescue as needed.

3. **Off-Site Rescue Services (if used by employer) –** The following off-site rescue and emergency services have been contacted and approved to provide rescue and emergency services for permit confined spaces.

    a. Describe the service by name, location, contact person, how to contact and site coordinator.

Name	Location	Contact Person	Contact Info	Site Coordinator

    b. The following has been provided the off-site rescue service:
        i. Information concerning the hazard they may confront when called to perform rescues and
        ii. Access to all permit spaces from which rescue may be necessary so they can develop appropriate rescue plans and practice rescue operations.

4. **Non-Entry Rescue –** Retrieval systems and methods have been developed for entrants to use when entering permit spaces, when the equipment dose not increase the overall risk of entry and would not contribute to the rescue of the entrant. The systems are:

Describe retrieval systems and methods:

a. Each authorized entrant uses a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head.
b. Wristlets are only used in lieu of the chest or full body harness when it has been demonstrated that use of the chest or full body harness is infeasible or creates a greater hazard and wristlet use is the safest and most effective alternative. These spaces are as follows: (list any such spaces)
c. Retrieval lines are attached to a mechanical device or a fixed point outside the space so rescue can begin immediately after the rescuer becomes award that rescue is necessary.
d. Mechanical devices are available to retrieve entrants from vertical type permit spaces more than 5 feet deep.
e. Safety Data Sheets (SDS) or similar written information is kept at the worksite when entrants are exposed to substances requiring such information so it can be made available to the medical facility treating exposed entrants.

VII. PERMITS AND EXHIBITS

- Confined Space Entry Training Record
- Exhibit 1 – Confined Space Entry Permit – 2-sided form
- Exhibit 2 – Confined Space Entry Checklist
- Exhibit 3 – Area Preparation
- Exhibit 4 – Temporary Reclassification Certification Form for Reclassifying Permit-Required to Non-Permit Entry

VIII. CONFINED SPACE ENTRY TRAINING RECORD

Employee Name	Date

The employee named above has received Confined Space Entry Training. The training included:

- Definitions
- Types of hazards
- Basic rules of confined space entry
- How hazards occur

Employee Signature	
Supervisor Signature	Date

EXHIBIT 1 – CONFINED SPACE ENTRY PERMIT

(Front Side)

NOTE: This Permit is to be used ONLY on the date and shift of issue.

Description & Location of Confined Space: _____

Date: _____ Purpose of Entry: _____

Estimated time required for entry: _____

Entry Supervisor: _____

Entrant(s): _____ Attendant(s): _____

1. Service lines have been blanked off, confined space has been cleaned and appropriate controls have been locked and tagged out (list on next page).

_____ _____
(Department Supervisor) (Maintenance Manager)

1. Pre-job planning and training of person entering tank/confined space has been carried out to assure person entering tank/confined space and attendant(s) can safely carry out their function.

_____ _____
(Department Supervisor) (Maintenance Manager)

2. Necessary auxiliary equipment is available and in good condition. Check all that apply:
☐ Life line ☐ Ladder ☐ SCBA ☐ GFI ☐ Radio ☐ Respirators ☐ Lights ☐ Other _____
☐ PPE (list) _____

3. Communication between attendant and entrant:
☐ Visual/verbal ☐ Radio _____
(Department Supervisor)

3. Adequate air changes are provided to maintain a safe atmosphere.
Ventilation requirements: ☐ Natural ☐ Supplemental mechanical

_____ _____
(Department Supervisor) (Safety Representative)

EXHIBIT 1 – CONFINED SPACE ENTRY PERMIT (CONTINUED)

4. The atmosphere of the confined space has been tested for oxygen, flammability and/or toxicity.
   Continuous monitoring required? ☐ Yes ☐ No
   Atmosphere to be retested? ☐ Yes ☐ No
   Respirators required? ☐ Yes ☐ No

Entry Approved by _____ until _____
Entry Supervisor*

Permit Canceled by_____ at _____
Entry Supervisor*

* The Entry Supervisor is normally the supervisor of the entrant.

IN EVENT OF EMERGENCY, CALL _____ **TO SUMMON HELP**

The following service lines have been:

Service line	Blanked or Disconnected	Locked & Tagged

The following hazardous energy sources have been locked & tagged:

_____
_____
_____

The following atmospheric tests have been conducted: (NOTE: When testing for flammability, always check oxygen level first. Test for toxic materials should be done last.)

Hazard	Permissible level	Concentration	Time	Approved by:

Atmosphere to be retested at: _____ _____ _____ _____ _____ _____

Hot work permit required? ☐ Yes ☐ No

EXHIBIT 2 – CONFINED SPACE ENTRY CHECKLIST

1. Tank cleaned, washed and purged: ☐ Yes ☐ Not Necessary
2. Wash water tested for neutrality: ☐ Yes ☐ Not Necessary
3. All fuses or safety switches pulled, locked out and tagged: ☐ Yes ☐ Not Necessary
4. All lines broken or blinded or both: ☐ Yes ☐ Not Necessary
5. Test for oxygen content: (Must be between 19.5-23.5%) ☐ Yes Reading: _____%
6. Atmosphere tested for flammable concentration: (Must be less than 10% LEL) ☐ Yes ☐ Not Necessary Reading: _____%LEL
7. Test for toxic atmosphere: ☐ Yes ☐ Not Necessary Reading: _____%LEL
8. Surrounding area checked for flammability and toxic gases: ☐ Yes ☐ Not Necessary
9. Attendant assigned and properly instructed: ☐ Yes
10. Fresh air supply provided: ☐ Yes ☐ Not Necessary
11. Rescue lifeline and harness provided and worn: ☐ Yes ☐ Not Necessary
12. Rescue equipment on the job and checked out: (extra rope, breathing apparatus, etc.) ☐ Yes ☐ Not Necessary
13. Protective equipment and clothing required and worn: ☐ Yes ☐ Not Necessary

Remarks:

_____

_____

_____

_____

_____

EXHIBIT 3 – AREA PREPARATION

Isolation

1. Pipes, hoses and ducts should be disconnected, and valves closed and locked.
2. Drive shafts or belts should be disconnected.
3. Power switches should be locked off.
4. The keys for any locks used should be kept only by those working in the confined area.

Each person working in the confined area should place their own locks and retain all keys.

Cleaning

1. Cleaning should be performed form outside the confined area as much as possible. Traps or cleanout doors of adequate size should be planned on new confined areas for this purpose.
2. If the cleaning must be done from the inside, workers should use proper NIOSH/MSHA approved respiratory equipment and participate in the plant Respiratory Protection Program
3. The confined area should be purged with air or steam to remove vapors and gases. Several air changes are usually necessary for this purpose. (Note: the production of static charges by steam may ignite flammable vapors. Proper bonding and grounding of steam hose and fittings should be used.)
4. The confined area may be purged with detergent or water, which should be thoroughly drained before entry.
5. Disposal of hazardous materials must be in accordance with local, state and federal regulations.
6. The construction of the confined area and the special properties of materials stored in it should be carefully considered. For example, corners or pockets of the confined area may capture and hold quantities of a material. For some materials, vapors may be absorbed on the walls and will be released later by heating from welding or cutting. Lead, for example, from gasoline may be deposited on confined area surfaces, and absorbed by the skin or breathed when it is vaporized by welding or cutting.

Ventilation

Ventilation is essential in confined area operations. Respiratory devices should never be used as a substitute for proper ventilation.

1. The air used should be from an air or steam powered source or an electric blower or fan. The air intake for these devices should be located where no contaminants may enter the air stream.
2. Air may be either exhausted or blown into the confined area. Fresh air is often blown into the breathing zone of the worker in the confined area.

Testing

The atmosphere of the confined area must be tested for absence of flammable or toxic gases and for presence of sufficient oxygen before entry and during work, continuously, if possible. There are instruments available for many common materials. Contact the Safety Manager for assistance.

1. Instruments for testing should be calibrated and checked before each use. The lower limit of sensitivity should be well below harmful levels of concentration. Documentation of calibration must be maintained.
2. If concentrations rise or the concentration of oxygen drops while workers are in the confined area, work should be stopped, and the workers removed until the cause is found and eliminated.

Protective Equipment

Protective equipment includes, but is not limited to:

1. Boots, gloves, aprons, face shields and coveralls, made of a material resistant to the hazardous materials, heat and other physical hazards.
2. Hard hats, safety glasses with side shields, safety shoes and safety belts, etc.

3. Respiratory protective equipment should be used only when adequate ventilation is not possible and should always be available in case of emergency.
   a. Only NIOSH/MSHA approved respiratory protection should be used
   b. A cartridge respirator can be used only for short periods of exposure to low concentration of contaminants. Cartridge respirators should never be used in concentrations of contaminants above 0.1 percent or in an oxygen deficient atmosphere.
   c. Gas mask respirators may also be used for short periods of time in low concentrations of contaminants. Its restriction is generally set at 0.5 percent of contaminants in am oxygen deficient atmosphere.
   d. A written, formal respiratory protection program should be established.

Rescue & Emergency

One of the most common occurrences in confined area accidents is the "chain-reaction" tragedy. One person in a confined area collapses. Another enters to rescue the first (sometimes with a cartridge respirator, which does not protect against a lack of oxygen). The second collapses and another attempts the rescue. The chain has gone as far as five or six deaths in some cases. If a rescue procedure is established and employees are shown what to do in an emergency, this can be avoided. The following steps may apply in many situations.

1. Limit the number of personnel entering the confined area to an absolute minimum.
2. An attendant should be stationed at a point where s/he can see all activity in the confined area at all times.
3. There should be a method of communication by which the observer can alert others outside the confined area if an emergency arises.
4. Those entering the confined area should wear safety harnesses and lifelines unless it encumbers those involved. A block and tackle or winch may be necessary to pull an unconscious person out of the confined area.
5. First aid equipment, including an oxygen bottle or resuscitator, should be available. Anyone expected to use this equipment must be thoroughly trained.
6. The attendant and/or someone outside the confined space who is readily available should have first aid training.
7. Employees should be briefed on the rescue procedures to be followed to minimize confusion in an emergency.

EXHIBIT 4 – TEMPORARY RECLASSIFICATION CERTIFICATION FORM FOR RECLASSIFYING PERMIT-REQUIRED TO NON-PERMIT ENTRY

This certification form is to be completed for authority to allow entry in a permit-required confined space that is being temporarily reclassified as a non-permit confined space. It may only be issued under the conditions set forth in the written entry procedures specific to the space identified on this form. **WORK THAT MIGHT PRODUCE HAZARDS OF UNACCEPTABLE LIMITS MAY NOT BE PERFORMED WITHIN THIS SPACE. ENTRY UNDER THIS CERTIFICATION IS AUTHORIZED ONLY WHEN ALL HAZARDS HAVE BEEN ELIMINATED. CONTROL OF ATMOSPHERIC HAZARDS THROUGH VENTILATION DOES NOT CONSTITUTE ELIMINATION OF THE HAZARDS.**

This certification shall be made available to each employee entering the space.

Specific location and space: _____

Date entry is authorized: _____

Time effective: From: _____ To: _____

Describe each step taken as prescribed by the written entry procedures as the basis for determining that all hazards have been eliminated (i.e., lockout/tagout of feed valves or power switches atmosphere depressurized removal of contaminants temperature adjustment etc.):

_____

_____

_____

I certify that all recognized hazards have been eliminated in this permit-required confined space to allow for temporary reclassification to a non-permit required confined space. Safeguards and work practices are in place to ensure safe entry operations.

Signature: _____ Title: _____

Date verified: _____ Time veri