CONFINED SPACE PROGRAM

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CONFINED SPACE PROGRAM
TABLE OF CONTENTS

INTRODUCTION

REGULATORY AUTHORITY FOR IMPLEMENTATION OF PERMIT-REQUIRED CONFINED SPACE PROGRAM

The Occupational Safety and Health Act under 29 CFR 1910.146 establish requirements for practices and procedures to protect employees from the hazards of entry into permit-required confined spaces. In response to the regulatory mandate, Steingass Mechanical Contracting, Inc. has developed and will maintain the Confined Space Program to provide the proper and safe procedures for all applicable employees.

The hazards encountered and associated with entering and working in confined spaces are capable of causing bodily injury, illness or death to the employee. Accidents occur among employees because of failure to recognize that a confined space is a potential hazard. It should therefore be considered that the most unfavorable situation exists in every case and that the danger of explosion, poisoning asphyxiation, engulfment, electric shock, falls and heat stress will be present at the onset of entry.

PURPOSE

The purpose of this program is to establish the procedures to be used as required by Occupational Safety and Health Act under 29 CFR 1910.146.

A. Identify all permit-required confined spaces and evaluate the hazards prior to entry;

B. Implement the measures necessary to prevent unauthorized entry into permit spaces;

C. Develop and implement the means, procedures and practices necessary for safe permit space entry operations.

In addition, it is intended that Steingass Mechanical Contracting, Inc. will be in full compliance with OSHA Confined Space Standard and due to the serious nature of this policy, Steingass Mechanical Contracting, Inc. intends to continually monitor this policy for its workability and/or inadequacies or deficiencies.

In the event of an accident or near miss resulting from a confined space entry, Steingass Mechanical Contracting, Inc. will follow the guidelines outlined in Steingass Mechanical Contracting, Inc.'s Incident Investigation Policy. ***In addition this documentation will be maintained for a least one year and will be used as part of the annual review.***

RESPONSIBILITY

(Management Commitment)

Steingass Mechanical Contracting, Inc. will instruct all appropriate employees in the safety significance of the Confined Space Program and/or procedures. In addition, Steingass Mechanical Contracting, Inc. considers these requirements to be of critical importance in helping to ensure that the applicable provisions of the Confined Space Program are known, understood, and strictly adhered to by all employees. Strict enforcement of this Program are known, understood, and strictly adhered to by all employees. Any variations from these set procedures will be considered a work rule violation and because of the serious nature of this Program, disciplinary action will be taken in accordance with the disciplinary guidelines described in **Steingass Mechanical Contracting, Inc.'s Safety Rules and Enforcement Policy.**

CONFINED SPACE IDENTIFICATION

A. Each job site foreman or superintendent will evaluate the workplace to determine if any spaces in which work is being performed are permit-required confined spaces by using the "Confined Space Hazard Evaluation" form provided in ***Appendix A.***

B. A space classified as a permit-required confined space may be reclassified as a non-permit confined space.

1. Examples of non-permit confined spaces include vented vaults, motor control cabinets, and dropped ceilings. Although they are confined spaces, these spaces have either natural or permanent mechanical ventilation to prevent the accumulation of hazardous atmosphere, and they do not present engulfment or other serious hazards.

2. If the permit spaces pose no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

3. If it is necessary to enter the permit space the eliminate hazards, such entry will be performed under the requirements of the permit system. If testing and inspecting during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

4. The entrant or entry supervisor will document the basis for determining that all hazards in a permit space have been eliminated by completing the "Pre-Entry Checklist for Confined Spaces," and posting it at the space to be entered ***(see Appendix C.).***

5. If an atmospheric or other hazard is introduced into the non-permit confined space (i.e., cleaning chemicals, cutting and welding, etc.), the space will be reclassified as a permit-required confined space. Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazard.

6. If hazards arise within a permit space that has been reclassified to a non-permit space, each employee in the space will exit the space. The entrant or entry supervisor will then reevaluate the space and determine whether it must be reclassified as a permit space.

PERMIT SYSTEM

A. General Requirements

1. Entry into a "Permit-Required Confined Space" will be authorized by the designated "Entry Supervisor," who will complete and sign the Confined Space Entry Permit ***(see Appendix D).***

2. Each job site, where work in a confined space is performed, will maintain a list of all authorized entrants, attendants and entry supervisors, who have been trained in their respective duties.

3. At least one attendant will be provided outside the permit space into which entry is authorized for the duration of entry operations;

   NOTE: Attendants may be assigned to monitor more than one permit space provided the duties can be effectively performed for each permit space that is monitored. Likewise, attendants may be stationed at any location outside the permit space to be monitored as long as the duties can be effectively performed for each permit space that is monitored.

4. If multiple spaces are to be monitored by a single attendant, the means and procedures to enable the attendant to respond to an emergency affecting one or more of the permit spaces being monitored without distraction from the attendant's responsibilities will be included on the permit.

5. The completed permit will be made available at the time of entry to all authorized entrants, by posting it at the entry or by any other equally effective means, so that the entrants and/or their representatives have an opportunity to participate in the reviewing and signing.

6. Under no circumstances are employees, who are not trained in proper rescue procedures and proper use of rescue equipment, to attempt a rescue within a confined space.
   a. Each job site will rely on the local community safety forces to perform permit space rescue.
   b. If the location at which Steingass Mechanical Contracting, Inc. is performing work, their rescue unit will be utilized to perform permit space rescue.
7. Provisions, procedures, and protocols shall be in place to protect employees from external hazards by the use of signs, signals, tents and/or barriers. Including but not limited to pedestrian, vehicle, weather, etc.

8. Any confined space may be re-evaluated, and/or additional monitoring may be requested by employees or their representative at any time or by an entrant, attendee or supervisor's request by reason that any change as occurred.

B. Specific Safety Procedures and Practices

1. Non-Entry Rescue Retrieval Systems

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

a. Each authorized entrant will use 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. Wristlets may be used in lieu of the chest or full body harness if the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

b. The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.

2. Isolation and Lockout / Tagout

a. All energy sources which are potentially hazardous to employees entering confined spaces must be isolated and secured, relieve, disconnected and locked out according to Steingass Mechanical Contracting, Inc.'s Lockout/Tagout Procedures prior to anyone entering the confined space.

b. All pipes, lines or ducts that are or have been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure or temperature capable of causing injury will be isolated from the confined space by disconnecting, breaking, blanking, blinding, or double block and bleed methods.

3. Atmospheric Testing

a. Entry into a confined space will be prohibited until pre-entry testing of the atmosphere has been completed from the outside to determine if a hazardous atmosphere exists within the confined space.

b. It is important to understand that some gases or vapors are heavier than air and will settle to the bottom of a confined space. Also, some gases are lighter than air and will be found around the top of the confined space. Therefore, it is necessary to test all areas (top, middle, bottom) of a confined space with properly calibrated testing instruments to determine what gases are present.

c. Whenever atmospheric test results indicate what the levels of oxygen, flammability or toxicity are not within acceptable limits, entry will be prohibited until such a time as the source of the condition causing the unacceptable reading is identified, and appropriate controls are implemented or appropriate personal protective equipment is provided.

d. The atmosphere of the confined space will be considered ***UNACCEPTABLE*** whenever any one of the following conditions exist:

   1) ***Oxygen:*** If oxygen levels are less than ***19.5%*** or greater than ***23.5%***.
   2) ***Flammability:*** A flammable gas, vapor or mist greater than ***10%*** of its Lower Explosive Limit (LEL), or Lower Flammable Limit(LFL).
   3) ***Toxicity:*** Any concentration of a substance greater than the OSHA Permissible Exposure Limit (PEL).

      NOTE: Refer the Material Safety Data Sheet (MSDS) or contact the Safety Department if unknown.

e. When testing for atmospheric hazards, test first for oxygen, then combustible gases and vapors and then for toxic gases and vapors.

f. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.

g. If a hazardous atmosphere is detected during entry:

   1) Each employee will leave the space immediately;
   2) The space will be evaluated to determine how the hazardous atmosphere developed; and
   3) Measures will be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

h. If isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing will be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions will be continuously monitored in the areas where authorized entrants are working.

4. Ventilation

a. Ventilation by a blower or fan may be necessary to remove harmful gases and vapors from a confined space. There are several methods for ventilating a confined space. The method and equipment chosen are dependent upon the size of the confined space openings, the gases to be exhausted (e.g., are they flammable?), and the source of makeup air.

b. A common method of ventilation requires a large hose, one end attached to a fan and the other lowered into a manhole or opening.

Example: A manhole would have the ventilating hose run to the bottom to blow out all harmful gases and vapors. The air intake should be placed in an area that will draw in fresh air only. Ventilation must be maintained during entry, because in many confined spaces the hazardous atmosphere will form again when the flow of air is stopped.

c. ***Caution:*** Under certain conditions where flammable gases or vapors have displaced the oxygen level, but are too rich to burn, forced air ventilation may dilute them until they are within the explosive range. Also if inert gases (e.g., carbon dioxide, nitrogen, argon) are used in the confined space, the space should be well ventilated and re-tested before a worker may enter.

5. Respirators

a. Respirators are devices that will allow workers to safely breathe without inhaling toxic gases or particles. Two basic types are ***air-purifying***, which filter dangerous substances from the air; and ***air-supplying***, which deliver a supply of safe breathing air from a tank or uncontaminated area nearby.

b. **ONLY AIR-SUPPLYING RESPIRATORS SHOULD BE USED IN CONFINED SPACES WHERE THERE IS NOT ENOUGH OXYGEN.**

c. Selecting the proper respirator for the job, the hazard, and the person is very important, as is thorough training in the use and limitations of respirators.

6. Communication Equipment

Communication equipment will be provided (i.e., radio, telephone, alarm, horn, etc.) when necessary for the entrant to communicate effectively with the attendant and likewise the attendant with the rescue service.

7. Barriers and Ladders

a. Barriers, barricades and pylons will be provided when necessary to prevent unauthorized entry into and to prevent people and equipment from falling into permit spaces.

b. Ladders will be provided as needed to ensure safe entry and exit from permit spaces.

8. Lighting

a. Lighting equipment will be provided as needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

C. Duties of Authorized Entrants

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Properly use equipment;

3. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space;

4. Alert the attendant whenever:

a. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation; or

b. The entrant detects a prohibited condition; and

5. Exit from the permit space as quickly as possible whenever:

a. An order to evacuate is given by the attendant or the entry supervisor.

b. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation,

c. The entrant detects a prohibited condition, or

d. An evacuation alarm is activated.

D. Duties of Attendants

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Is aware of possible behavioral effects of hazard exposure in authorized entrants;

3. Continuously maintains an accurate count of authorized entrants in the permit space that accurately identifies who is in the permit space;

4. Remains outside the permit space during entry operations until relieved by another attendant;

5. Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space;

6. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions:

    a. If the attendant detects a prohibited condition;

    b. If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;

    c. If the attendant detects a situation outside the space that could endanger the authorized entrants; or

    d. If the attendant cannot effectively and safely perform all the required duties.

7. Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit spaces hazards;

8. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:
    a. Warn the unauthorized persons that they must stay away from the permit space;

    b. Advise the unauthorized persons that they must exit immediately, if they have entered the permit space; and

c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered space.

9. Performs non-entry rescues;

10. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

E. Duties of Entry Supervisors

1. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

2. Verifies, by checking that the appropriate entries have been made on the permit, that 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;

3. Terminates the entry and cancels the permit when entry operations covered by the permit have been completed; or a condition that is not allowed under the entry permit arises in or near the permit space;

4. Verifies that rescue services are available and that the means for summoning them are operable;

5. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and

6. Determines whenever responsibility for a permit required confined space entry operation is transferred, procedures for coordinating entry operations, and for multi-employers who are working in the same confined space at intervals dictated by the hazards and operations performed within the space that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained so that employees of one employer do not endanger the employees of any other employer.

F. Training

1. All employees whose work is regulated by the section will be provided training in order to acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

2. All employees involved in permit-required confined space entry operations must complete the Steingass Mechanical Contracting, Inc. 's Hazard Communications Training Program.

3. Training will be provided to each affected employee:

    a. Before the employee is first assigned duties under this section;
    b. Before there is a change in assigned duties;
    c. Whenever there is a change in permit space operations that present a hazard about which an employee has not previously been trained;
    d. Whenever Steingass Mechanical Contracting, Inc. has reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employees' knowledge or use of these procedures.

4. The training will establish employee proficiency in the duties required by this action and will introduce new or revised procedures, as necessary, for compliance with this section.

5. The trainer will certify that the training has been accomplished. The certification will contain each employee's name, the signatures or initials of the trainers and the dates of training. The certification will be available for inspection by employees and their authorized representative.

G. Record keeping and Permit Review

1. The canceled entry permit will be retained at the office of Steingass Mechanical Contracting, Inc. for at least one year to facilitate the review of the Permit-Required Confined Space Program. Any problems encountered during an entry operation will be noted on the pertinent permit so that appropriate revisions to the Permit Space Program can be made.

2. The Permit-Required Confined Space Program will be reviewed by the Safety Director using the canceled permits retained within one year after each entry and revise the Program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

APPENDICES

Appendix A - Confined Space Hazard Evaluation
Appendix B - Permit-Required Confined Space Inventory List
Appendix C - Pre-Entry Checklist for Confined Spaces
Appendix D - Confined Space Entry Permit
Appendix E - Rescue Service/Non-Entry Rescue/Test & Rescue Equipment
Appendix F - Cutting or Welding in Confined Spaces
Appendix G - Glossary

Appendix A

Steingass Mechanical Contracting, Inc.
Confined Space Hazard Evaluation

I. Confined Space Location: _____
Purpose of Entry: _____
Previous materials in space: _____

A. Large enough and so configured that an employee can bodily enter and perform assigned work.

B. Has limited or restricted means of entry or exit (for example, tanks, pits, silos, storage bins, vaults, diked areas, manholes, trenches).

C. Is not designed for continuous human occupancy.

If ***YES***, continue with the evaluation. If ***NO***, stop, this is not a confined space.

II. Does the confined space contain one or more of the following hazard characteristics? Complete the following Hazard Identification Check List when making this determination.

	Yes	No	
A.	____	____	Contains or has a known ***potential*** to contain a hazard atmosphere.
B.	____	____	Contains a material with the ***potential*** for engulfment.
C.	____	____	Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor which slopes downward and tapers to a small cross section.
D.	____	____	Contains any other recognized serious safety or health hazard.

- If A, B, C, **or** D is **"YES,"** then this is a ***Permit-Required Confined Space*****.**
- If A, B, C, **and** D is **"NO"** and this confined space does not contain nor has the potential to contain any hazard, it is a ***Non-Permit Confined Space***.

III. Hazard Identification Check List

A. Oxygen Atmosphere Checks (O_x)

	Yes	**No**	
1.	____	____	Oxygen deficient less than 19.5%.
2.	____	____	Oxygen enriched greater than 23.5%.
3.	____	____	Work being performed in the confined space (i.e., cleaning solvents, welding, etc.) _____ _____

B. Combustible Atmosphere Checks (Comb)

	Yes	**No**	
1.	____	____	Combustion greater than 10% (LEL)
2.	____	____	Work being performed in the confined space (i.e., cleaning solvents, welding,etc.) Identify work: _____ _____

C. Toxic Atmosphere Check

	Yes	**No**	
1.	____	____	Toxic greater than 200 ppm (methyl chloride)
2.	____	____	Corrosive materials: _____
3.	____	____	Chemical reactivity: _____
4.	____	____	Sludge / residue
5.	____	____	Chemical contact
6.	____	____	Engulfment (loose, granular material)
7.	____	____	Noise
8.	____	____	Slick / wet surfaces (oil, grease)
9.	____	____	Falling objects
10.	____	____	Inadequate lighting

	Yes	No	
11.	____	____	Poor visibility
12.	____	____	Poor communication
13.	____	____	Pressure / vacuum
14.	____	____	Hot / cold contact
15.	____	____	Sharp objects
16.	____	____	Sloping surfaces
17.	____	____	Taper to smaller cross section
18.	____	____	Equipment start up

D. Are any of the following mechanical hazards present?

	Yes	No	
1.	____	____	Electrical equipment
2.	____	____	Pneumatic or hydraulic driven equipment
3.	____	____	Belt / chain drives
4.	____	____	Shaft-driven equipment
5.	____	____	Other mechanical linkages
6.	____	____	Mechanical moving parts (i.e., chains, latches).

Identify source of mechanical hazards: _____

_____

_____

E. Other hazards, not listed: _____

_____

Are employees or contractors required to carry in or use equipment or material which may create a hazardous condition within the confined space (i.e., welding equipment, cleaning solvents, electrical equipment, gasoline powered equipment)?

_____

_____

_____

If **YES,** please identify: _____

_____

_____

Other Comments:

_____

_____

_____

_____

_____

Completed By: _____ _____

(Print Name) **(Signature)**

Date: _____ Job Number: _____

Location: _____

Job Description: _____

Appendix B

Steingass Mechanical Contracting, Inc.
Possible Permit-Required Confined Space List

1. Bins
2. Boilers
3. Conveyor or Enclosures
4. Ditches, Trenches (4’ and deeper)
5. Dust Collectors
6. Furnaces
7. Manholes
8. Mixers
9. Pipes
10. Pits
11. Sewers
12. Silos
13. Tanks
14. Tunnels
15. Vaults
16. Vats
17. Wells

Appendix C

Steingass Mechanical Contracting, Inc.
Pre-Entry Checklist for Confined Spaces

A tag to be completed by the entrant or entry supervisor each time prior to entering any "confined space." The "Pre-Entry Checklist" is used by the entrant or entry supervisor to decide if the confined space should be classified as a "permit space" or "non-permit space" for the duration of the job. If classified as a "permit space," then a "Confined Space Entry Permit" form must be issued. If all hazards have been eliminated in the space and the atmosphere has been evaluated, and the space has been classified as "non-permit," then post the "Pre-Entry Checklist" at the confined space for the duration of the entry.

Steingass Mechanical Contracting, Inc.
Pre-Entry Checklist for Confined Spaces

Date and Time of Issue: _____

Date and Time of Expiration: _____

Space to be Entered: _____

Purpose of Entry _____

1. Atmospheric Checks:

   Time_____

   Oxygen_____% 19.5% to 23.5%

   Combustibles_____% LEL < 10%

   Toxic_____

2. Source Isolation (no entry):

Entry sources locked out and lines blanked, blocked or disconnected……
N/A____
Yes____
No____

3. Ventilation Modification:

Mechanical…….	N/A____	Yes____	No____
Natural ventilation only……	N/A____	Yes____	No____

4. Atmospheric Checks (after isolation and ventilation):

   Time_____

   Oxygen_____% 19.5% to 23.5%

   Combustibles_____% LEL < 10%

   Toxic_____

If there is no reason to believe that conditions exist to require permit entry then complete this "Pre-Entry Checklist" and classify accordingly.

Non-Permit _____ Permit _____

If **NON-PERMIT CONFINED SPACE**, then follow safe procedures and post this tag at job site.

If **PERMIT-REQUIRED CONFINED SPACE**, or if there is reason to believe that conditions may change adversely, then Confined Space Entry Permit must be issued.

Entry Supervisor: _____ _____
(Print Name / Clock #) **(Signature)**

Job Number: _____ **Job Location:** _____
Job Description: _____

Appendix D

Steingass Mechanical Contracting, Inc.
Confined Space Entry Permit

A "Confined Space Entry Permit" is to be completed prior to entering a permit-required confined space. This form can be issued by the person who has completed Steingass Mechanical Contracting, Inc. 's Confined Space Training Program. A copy is posted at the confined space; the person who issues the permit retains another; another placed on file in the Safety Director's office. After the entry supervisor terminates and/or closes the permit, all copies are to be completed and returned to the entry supervisor.

Steingass Mechanical Contracting, Inc.

Confined Space Entry Permit

This permit must be posted outside the confined space. The Safety Department must be contacted before entry.

LOCATION AND DESCRIPTION
OF CONFINED SPACE_____DATE_____
PURPOSE OF ENTRY_____TIME_____
PERSON IN CHARGE OF WORK_____EXPIRATION_____

SPECIAL REQUIREMENTS	Y	N		Y	N
Written Format Reviewed	☐	☐	MSDS Available and Reviewed	☐	☐
Lock Out-De-energize-GFCI	☐	☐	Full Body Harness	☐	☐
Lines Broken-Capped or Blanked	☐	☐	Tripod Emergency Escape Unit	☐	☐
Purge-Flush and Vent	☐	☐	Lifelines	☐	☐
Ventilation—Heat or Cold	☐	☐	Fire Extinguishers	☐	☐
Secure Area	☐	☐	Lighting—Explosion Proof	☐	☐
Breathing Apparatus-SCBA	☐	☐	Protective Clothing	☐	☐
Employees Trained for Confined Space	☐	☐	Respiratory	☐	☐
Welding Permit	☐	☐	Escape Air	☐	☐
Entrant Communication Established	☐	☐	Atmosphere Tested every 4'	☐	☐

Test(s) to be taken	P.E.L.*	Time	Level	Time	Level	Time	Level
% of Oxygen	19.5% - 23.5%						
% of L.E.L. *	Any % Under 10						
Carbon Monoxide	35 PPM						
Hydrogen Sulfide (H_2S)	10 PPM						
Sulfur Dioxide ($S0_2$)	5 PPM						
Ammonia	25 PPM						

*** P.E.L. = PERMISSIBLE ENTRY LEVEL** *** L.E.L. = LOWER EXPLOSIVE LEVEL**

GAS TESTER (Name)_____ CALIBRATION DATE_____

NOTE: CONTINUOUS / PERIODIC TESTS SHALL BE ESTABLISHED BEFORE BEGINNING JOB. ANY QUESTIONS PERTAINING TO TEST REQUIREMENTS SHALL BE DIRECTED TO THE SAFETY MANAGER.

INSTRUMENTS USED	Calibration Date	Type	Identification Number
STANDBY ATTENDANT			Social Security No.

EMERGENCY PHONE NUMBER ( )_____

ENTRANT SUPERVISOR or FORMAN SIGNATURE	AUTHORIZED ENTRANT(S)	SOCIAL SECURITY NO.	PHONE NO.

SAFETY DEPARTMENT SIGNATURE_____

Appendix E
Rescue Service / Non-Entry Rescue
Test & Rescue Equipment

1. RESCUE SERVICE

A. Steingass Mechanical Contracting, Inc. will use a pre-determined off-site rescue team, or an on-site rescue (facility host). They will be given an opportunity to examine the entry site, practice rescue and decline as appropriate. And/or be on site for all IDLH conditions while work is being performed.

B. The rescue team will be selected to provide best response time for each job site.

2. NON-ENTRY RESCUE

A. Retrieval systems or methods will be used whenever entry is made, unless the retrieval equipment would increase overall risk of entry or would not be of value.

B. Each entrant will use a chest or full body harness, with retrieval line attached at the center of their back near shoulder level, or above their head.

C. Wristlets may be used in lieu of the chest or full body harness if Steingass Mechanical Contracting, Inc. can show use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

D. Other end of retrieval line will be attached to a mechanical device or fixed point outside permit space for immediate use.

E. Mechanical device will be used to retrieve personnel from vertical type permit spaces more than 5 feet deep.

3. TEST & RESCUE EQUIPMENT

A. Gas Detection

B. Ventilation Equipment

C. Fall and Rescue Equipment

Appendix F

Cutting or Welding in Confined Spaces

1. Each confined space in which cutting or welding operations are conducted will be classified as a permit-required confined space.

2. All of the requirements of the Permit System as outlined in Section V must be followed.

3. Mechanical ventilation (either local exhaust or general ventilating system) will be used to prevent the accumulation of toxic materials or possible of oxygen deficiency.

4. Oxygen will never be used for ventilation.

5. When welding or cutting is being performed in any confined spaces, the gas cylinders and welding machines will be left on the outside. Before operations are started, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement.

6. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes will be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

7. In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves will be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose will also be removed from the confined space.

8. After welding operations are complete, the welder will mark the hot metal or provide some other means of warning other workers.

Appendix G

Glossary

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

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 permit space program.

Authorized entrant: Means an employee who is authorized to enter a permit space.

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.

Confined space: Means a space that:

1. Is large enough and so configured that and employee can bodily enter and perform assigned work; and
2. Has limited or restricted mean of 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 human occupancy.

Double block and bleed: Means the closure of line, duct, or pipe by closing and locking or tagging two (2) in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two (2) closed valves.

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.

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 respirator system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

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.

Entry permit: Means the written or printed document that is provided to allow and control entry into a permit space.

Entry supervisor: Means the person (such as the employee, 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.

> ***NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant as long as that person is trained and equipped for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.***

Hazardous atmosphere: Means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of 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% of its lower flammable limit (LFL);
2. Airborne combustible dust at a concentration that meets or exceeds it LFL;

   Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.

3. Atmospheric oxygen concentration below 19.5% or above 23.5%;

4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit (PEL) 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 exposure in excess of its dose or permissible exposure limit.

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.

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, 1910.1200 of this part, published information and internal documents can provide guidance in establishing acceptable atmospheric conditions.

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 could interfere with an individual's ability to escape unaided from a permit space.

Note: Some materials—hydrogen fluoride gas and cadmium vapor, for example—may produce immediate transient effects, that, even in 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.

Inerting: Means the displacement of the atmosphere in a permit space by non-combustible gas (such as nitrogen or argon) to such an extent that the resulting atmosphere is non-combustible.

Note: This procedure produces an IDLH oxygen-deficient atmosphere.

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.

Line breaking: Means 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: 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.

Oxygen deficient atmosphere: Means an atmosphere containing less than 19.5% oxygen by volume.

Oxygen enriched atmosphere: Means an atmosphere containing more than 23.5% oxygen by volume.

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 overall program for controlling and where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit system: Means the written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination f entry.

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

Rescue service: Means the personnel designated to rescue employees from permit spaces.

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.

Testing: Means 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.

> ***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.***