ENVIRONMENTAL HEALTH & SAFETY POLICY

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Policy Subject:	**Permit Required Confined Space Entry Policy**	**Effective Date:**	**26 February 2019**
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1.0 PURPOSE

This policy has been developed to protect Superior Environmental Solutions (SES) employees from the serious hazards associated with entering and working within confined spaces such as but not limited to ovens, silos, manholes, vessels, tanks and boilers. This program establishes the requirements for compliance with the OSHA Standard 1910.146, Permit-Required Confined Spaces.

2.0 POLICY STATEMENT

It is the policy of Superior Environmental Solutions to establish programs to protect the safety and health of its workers and to comply with federal and state requirements. This program contains the requirements necessary to regulate entry into confined spaces and to ensure the safety of employees who enter or work in the confined spaces. Only those employees or contract employees who have been trained on confined space entry procedures are permitted to enter a confined space using these guidelines.
Violation of this policy could result in disciplinary action up to and including termination.

3.0 DEFINITIONS

Acceptable entry conditions	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 into and work within the space.
Attendant	An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendants' duties assigned in the employer's permit space program.
Authorized entrant	An employee who is authorized by the employer to enter a permit space.
Blanking or blinding	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	is a space that: • Is large enough and so configured that an employee can bodily enter and perform assigned work; and • Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and Is not designed for continuous employee occupancy, and/or ventilation of the

	space is lacking or inadequate, allowing for the potential accumulation of toxic air contaminants, flammable or explosive agents, and/or depletion of oxygen.
Double block and bleed	The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.
Emergency	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	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.
Entry	The action by which a person passes through an opening into a permit-required confined space. Entry includes 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	The written or printed document that is provided by the employer to allow and control entry into a permit space.
Entry supervisor	The person 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. An entry supervisor also may serve as an attendant as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of an entry supervisor may be passed from one individual to another during the course of an entry operation.
Hazardous atmosphere	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 percent of its lower flammable limit (LFL). 2. Airborne combustible dust as a concentration that meets or exceeds its LFL; 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 exposure in excess of its dose or permissible exposure limit. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of 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. 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 Communication Standard, 29CFR1910.1200, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.
Hot work permit	The employer's written authorization to perform operations (for example, riveting, welding, cutting, burning and heating) capable of providing a source of ignition.
Immediately dangerous to life or health (IDLH)	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.
Inerting	The displacement of the atmosphere in a permit space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible.
Isolation	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, mis-aligning 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	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	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	An atmosphere containing less than 19.5 percent oxygen by volume.
Oxygen enriched atmosphere	An atmosphere containing more than 23.5 percent oxygen by volume.
Oven Entry Protocol	Protocol that has been developed to minimize the hazards of oven entry during operations and insure the best possible working environment given the tasks which must be done. Locations with oven entry during operations will utilize this process. Oven entry following a complete cool-down requires following the SES Permit Required Confined Space Entry program.
Permit-required confined space (permit space)	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)	The overall program for controlling, and for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.
Permit system	The employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.
Prohibited condition	Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Rescue service	The personnel designated to rescue employees from permit spaces.
Retrieval system	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	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.

4.0 PROCEDURES

Each facility manager at SES locations having permit-required confined space entry will ensure that all necessary provisions of the Permit-required confined Space Entry program are implemented. Generally the following provisions are required:

1. The written Permit-Required Confined Space Entry program must be maintained at the SES facility.
2. Assignment of a knowledgeable person for responsibility as the Confined Space Entry Program manager.
3. All permit spaces are inventoried and identified by signs.
4. A permit system for entering spaces has been implemented.
5. Employees must follow safe work practices and prohibited work practices are strictly enforced.
6. All entrants, attendants, entry supervisors, and personnel performing air testing and in-facility rescue services personnel must be trained.
7. All necessary equipment for permit space entry is provided.
8. Employers (contractors) are informed of permit-required confined spaces their employees must enter and the requirement of the permit-space program.
9. Employees meet medical suitability requirements. For examples include but are not limited to the respirator physical and oven entry procedures.
10. Confined space entry permits are maintained for 12 months.
11. Canceled permits are reviewed annually by persons knowledgeable in the confined space entry program.

A. Responsibility

Manager:

1. Understand and follow the Confined Space Entry program and requirements.
2. Ensure all personnel understand and follow the confined space entry policy, procedures and the execution of the Confined Space Entry permit.
3. Periodically audit the program for compliance in conjunction with the annual program review.
4. Ensure that the confined space entry permit is used for all permit required entries.
5. Know the location of the hazard survey for internal SES confined spaces.
6. Ensure supervisors provide awareness training to their employees on confined space entry.
7. Periodically audit the program to ensure compliance where applicable.
8. Ensure that if violations of confined space entry are observed, appropriate disciplinary action is taken.

Supervisors:

1. Understand and follow the confined space entry program procedures and the specific hazard analysis for any confined spaces within their department.
2. Ensure that a confined space entry permit is fully implemented for any entries in their department.
3. Know the location of the hazard survey for confined spaces in the branch or facility.

4. Provide awareness training to their new and existing employees working around confined spaces.
5. Ensure that if violations of the confined space entry program are observed, that appropriate disciplinary action is taken.
6. Must review the initial entry permit with a safety manager in person or by phone prior to the initial entry into that space.

Safety Manager:
1. Ensure a confined space entry evaluation has been made and all permit required confined spaces at SES branches or facilities are labeled and have a documented hazard survey.
2. Ensure all confined space entry personnel are trained on the confined spaces they may enter, the confined space entry permit procedures, the hazards associated with the confined spaces and the confined space entry equipment necessary for proper entry.
3. Ensure confined space entry personnel know how to use air monitoring equipment so that they can determine if a confined space is hazardous.
4. Ensure confined space entry personnel practice emergency rescue drills annually.
5. Ensure confined space entry permits are retained for one year and that the program is evaluated on an annual basis.
6. Communicate the confined space entry program with contractors.
7. Understand and follow all confined space entry program requirements.
8. Know the location of confined spaces and respective hazards in the facility.
9. Provide technical assistance on the Confined Space Entry program.
10. Train supervisors, superintendents, managers and new employees on confined space entry procedures.
11. Monitor the overall program and correct deficiencies.
12. Conduct annual reviews of the confined space entry program to ensure compliance.
13. In conjunction with the Maintenance staff, communicate program requirements with contractors.

Confined Space Entry Personnel:
1. Follow all confined space entry program requirements.
2. Report any problems that are observed immediately to the immediate manager of the confined space entry.

B. Confined Space Identification

A documented survey is conducted, to identify Permit Confined Spaces as defined in this program. This survey shall be conducted by a knowledgeable person familiar with the standard and process. Confined spaces are determined to be "permit required" or non-permit" required.

In case of confined spaces in which no person shall enter, appropriate measures to prevent entry are incorporated. These measures may include welding or securing the cover in place, filling the confined space with cement or other similar material or removing the confined space.

C. Labeling and Posting

All openings into Permit Required Confined Spaces capable of allowing human Entry are labeled with wording similar in content to the following example:

Workers unable to read the signs must receive information regarding hazardous areas and are informed of any instructions printed on the signs.

D. Confined Space Survey

A confined space survey is performed by qualified individuals familiar with the facility (chemical processes used, general operations and maintenance of the facility) or individuals from a contract agency that are familiar with the standard and trained in hazard identification for each confined space. Using the *CONFINED SPACE HAZARD SURVEY* form (Appendix A) or equivalent, the following is identified:

1. Name or description of the confined space
2. Building, area, room or other location of the confined space
3. Permit or non-permit required confined space
4. Known or potential hazards present in the confined space including:
   a. Oxygen deficient or enriched atmosphere
   b. Flammable/explosive atmosphere
   c. Toxic atmosphere
   d. Mechanical hazards
   e. Electrical hazards
   f. Chemical hazards
   g. Biological hazards
   h. Fall potential
   i. Temperature

   Potential hazards are evaluated for the following prior to approving entry:
   a. Magnitude of the hazard
   b. Likelihood of occurrence
   c. Consequences of the occurrence
   d. Potential for changing conditions/activities
   e. Strategies for controlling, eliminating or isolating the hazard
   f. Impact on emergency response/rescue
5. Control measures to take prior to entry as defined on the Hazard Survey
6. Personal Protective Equipment requirements for entry

Surveys and the confined space entry program are reviewed on an annual basis to determine if any of the confined spaces require a change in status. In order to add, remove or declassify a confined space, the confined space survey guidelines must be followed, the survey updated and respective confined space entry personnel must receive training on those changes. For confined spaces at client locations for which entry will be conducted, the Confined Space Entry Permit will be used to identify hazards, controls, and procedures.

E. Confined Space Entry Permit

Prior to entering a "permit required" confined space, an entry permit is completely filled out and signed by the entry supervisor using the *SES CONFINED SPACE ENTRY PERMIT* - Appendix B. The entry permit authorizes entry:

1. Only to authorized workers
2. Into a specific permit entry confined space
3. For a specific purpose
4. With entry by a specific shift or work crew for a period not to exceed 12 hours.

The entry permit is made available to all entrants, attendants, entry supervisors by posting the permit near the entry of the confined space. The confined space entry permit contains the following information:

1. The confined space to be entered;
2. The purpose of the entry;
3. The date and authorized duration of the permit;
4. The names of all the authorized entrants for the confined space;
5. The name(s) of the persons who will be stationed outside the confined space while it is occupied (attendants);
6. The name of the individual who will be entry supervisor and a space for the signature of the person who authorized entry;
7. The hazards of the permit space to be entered;
8. The pre-entry activities to isolate the confined space and to eliminate or control hazards before entry;
9. The acceptable entry conditions;
10. The results of pre-entry and continuous (documented hourly) atmospheric monitoring performed including the names of the persons performing the monitoring and the times of the monitoring tests that were conducted;
11. The communication procedures to be used by authorized entrants and the person(s) stationed outside the confined space;
12. A list of equipment, such as personal protective equipment, testing equipment, communications equipment, and rescue equipment which must be provided;
13. Any other information deemed necessary to insure the safety of the entrants in the confined space;
14. Any additional permits which were issued, such as welding and cutting permits, authorizing work in the confined space.

All applicable requirements of the permit must be met before entry is made. The permit may be cancelled at any time by the entry supervisor if a condition arises or exists that may cause illness or injury to the confined space entrants and or when the entry operations covered by the permit have been completed. All entrants must have exited the space before the permit is canceled.

The facility retains each canceled entry permit for at least one year to facilitate the review of the permit required confined space program. Any problems during an entry operation are noted on the pertinent permit so that revisions to the permit required confined space entry program can be made. The location designates where permits are filed.

F. Pre-Entry Requirements

Prior to entry the following requirements are completed:

1. Permit Entrance
   Any conditions making it unsafe to remove an entrance cover/opening are eliminated prior to removing or disturbing the cover. Examples include sewers, chemical tanks, oil tanks or other potentially flammable confined spaces. After opening the confined space, the area or opening is immediately guarded by a railing, temporary cover or other appropriate barrier that will prevent accidental fall into the space and keep items from entering the confined space.

2. Equipment & Response Personnel

The entry supervisor ensures all confined space entry equipment, rescue equipment, personal protective equipment, communication equipment and appropriate emergency response personnel are onsite or readily available.

3. Testing
   Before entry, the atmosphere is tested with a calibrated direct-reading instrument in the following order: Oxygen Levels, Flammability, Toxins and/or any contaminants that have a potential to be present in the confined space. The testing is performed by a qualified person using equipment that has been approved for use in the designated areas. Testing equipment is calibrated per manufacturer requirements before and after each entry. Gas and oxygen monitors are also checked as required by the equipment manufacturer on a scheduled basis. Equipment that is deficient is taken out of service immediately and repaired. Each authorized entrant or that employee's authorized representative is provided the opportunity to observe any monitoring or testing of permit spaces (entrant initials column on permit).

Testing of the confined space is conducted throughout the entire vessel at all levels (top, middle, bottom, etc.) as well as the area that the workers will occupy during entry. The testing is done without the use of ventilation systems. Testing is also conducted outside of the confined space to make sure the surrounding air is not contaminated.

If test results conclude that the atmospheric condition of the confined space is unacceptable, entry is not permitted until such conditions are brought up to acceptable limits. This can be done by purging, cleaning and/or ventilating the space.
The following guidelines are used for acceptable confined space entry conditions:

* Oxygen is between 19.5 % and 23.5 %
* Flammability is below 10 % LEL or LFL
* Toxicity is less than recognized exposure limits (i.e. PEL or TWA)
  Carbon Monoxide – 0-25ppm
  Hydrogen Sulfide – 0-10ppm
  Ammonia – 0-25ppm
  Temperature - <125F

If unacceptable conditions in a confined space cannot be eliminated via purging, cleaning and/or ventilating the space, personnel are allowed to enter the confined space only with appropriate respiratory protection and personal protective equipment.

If a self contained breathing apparatus (SCBA) is used, the wearer is not allowed to remain within the confined space, when the primary air system is depleted or being replaced. The reserve air supply is used only for escape purposes. All users of SCBAs are trained and certified to use them. Entrants are not allowed to enter a confined space containing explosive or flammable agents exceeding 10% lower flammable limits (LFL).

4. Isolation
   In certain situations, it may be necessary to control energy sources before a worker is permitted to enter a confined space. If this is the case, all energy sources which are potentially hazardous to the workers in the space are secured, relieved, disconnected and/or restrained. Refer to the SES Control of Hazardous Energy Program for guidance.

   In certain situations, it may be necessary to prevent flammable, toxic, irritating or oxygen displacing gases and vapors from entering the confined space. This includes material, high pressure, high temperature and other lines that could introduce a hazard into the space. In order to accomplish this, the following methods are followed:

   a. Depressurizing and disconnecting contaminant supply lines and providing a blank or blind.

b. Isolating a confined space from a line, duct or pipe by locking or tagging two closed-in-line valves and locking or tagging the line between the two closed valves open to the outside atmosphere so that it can continue to drain or bleed.
c. Using two blocking valves with an open vent between the blocking valves.
d. Inserting a blank sized for the proper pressure in piping nearest the confined space.

Documentation to ensure that all of the hazards in a permit space have been removed is on the confined space entry permit along with the signature of the entry supervisor, date and location of the space.

G. Entry Requirements

1. No open flames or sources of ignition are used inside of or immediately adjacent to the entrance of the confined space until tests have indicated that flammable gases do not exceed allowable limits.
2. Electrical cords, tools and equipment to be used inside the confined space are inspected to assure safety prior to use. Low voltage circuits and double or heavy-duty insulation are used when possible. Electrical equipment or tools required for maintenance inside a confined space are operated via extension cords equipped with a ground fault circuit interrupter.
3. If there is potential for combustible dust, non-sparking tools are used.
4. Fans or mechanical exhausts used to ventilate a confined space are designed and set up in such a way that an ignition hazard is not created.
5. Fans or mechanical exhaust may be required to run continuously during the entry to prevent the return of flammable or hazardous gases. This condition is always noted on the confined space entry permit.
6. Cylinders or compressed gases are never taken inside a confined space. If used in the area, they are always turned off at the cylinder valve when not in use.
7. Continuous monitoring of oxygen and combustible gas levels (along with any applicable chemical vapors), as described in section C Testing, inside the confined space is conducted using monitoring equipment. Results of ongoing monitoring must be recorded on the entry permit.
8. If monitoring indicates that hazards are present during entry, employees must leave the permit space immediately. The attendant must keep an accurate record of monitoring. The space must be ventilated until an acceptable atmosphere is again present.
9. The correct personal protective equipment must be worn at all times by all employees entering the confined space.

H. Attendant Responsibilities

The authorized attendant is stationed outside of the confined space and observes the entrants inside. The attendant may attend more than one space if they are adjacent to each other and all attendant responsibilities can be met at all times.

<u>The attendant</u>:

1. Knows the hazards that may be present during entry, including the mode, signs or symptoms, and consequences of the exposure to hazardous elements;
2. Is aware of possible behavioral effects of hazard exposure in authorized entrants;
3. Continuously maintains an accurate count of all entrants 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;
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 a prohibited condition is detected,
   b. if the behavioral effects of hazard exposure in an entrant is detected,
   c. if a situation outside the space that could endanger the entrant is detected or

d. if the attendant cannot effectively and safely perform all the duties required in this section
e. if the attendant is watching multiple spaces and a situation or incident arises that requires the attendant's focus, for example a rescue situation.

7. Summon rescue and other emergency services as soon as he/she determines that assistance may be needed to escape from permit space hazards;
8. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:
   a. warns the unauthorized persons to stay away from the permit space,
   b. advises the unauthorized persons to exit immediately if they have entered the permit space and
   c. informs the entrants and the entry supervisor if unauthorized persons have entered the permit space
9. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.
10. Properly uses rescue equipment and performs rescue duties without entering the confined space.

I. Entrant Responsibilities

The authorized entrant:

1. Knows the hazards that may be present during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
2. Properly uses equipment as required by the confined space;
3. Communicates with the attendant as necessary to enable the attendant to monitor entrant status and the ability to alert entrants of the need to evacuate the space if necessary;
4. Alerts the attendant whenever:
   a. any warning sign or symptom of exposure to a dangerous situation is recognized or
   b. a prohibited condition is detected.

5. Exits from the permit space as quickly as possible whenever:
   a. an order to evacuate is given,
   b. any warning sign or symptom of exposure to a dangerous situation or prohibited condition is detected, or
   c. an evacuation alarm is activated.

J. Entry Supervisor Responsibilities

The entry supervisor is in charge of the entry and:

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 documentation has been made on the permit, that all tests/monitoring 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 upon becoming aware of a condition or set of conditions whose hazard potential exceeds the limits authorized by the permit;
4. Verifies that rescue services are available and that the means for summoning them are operable;
5. Ensures that entries with potential IDLH conditions have rescue present during the entry;
6. Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations, terminates the confined space entry permit and must reissue a new confined space entry permit;
7. Closes off the permit space and cancels the permit once the work has been completed.
8. May enter the space to inspect the space and work activities or to instruct the entrant on proper work procedures.

9. The supervisor may also act as the attendant as long no duties would interfere with performing the attendant duties. This must be approved by the health and safety department prior to the entry to ensure that other arrangements are made to ensure adequate rescue services is established.

K. Training

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

Training is provided to each affected employee:
1. before assignment of duties under this section;
2. before there is a change in assigned duties;
3. whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained and whenever the facility has reason to believe there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

The training includes but is not limited to:
1. Recognition of confined space hazards,
2. Designated "confined spaces" in the facility,
3. Use of atmospheric testing/monitoring equipment and means of checking equipment for proper calibration,
4. Use of personal protective equipment (harnesses, ropes, winches, davit arms, SCBA gear, tripods, etc.),
5. Use of ventilation/exhaust equipment,
6. Lockout/tagout procedures necessary to prevent the accidental start-up of equipment in the confined space,
7. Requirements for tools and equipment for using electrical and mechanical tools within the confined space,
8. Limitation on use of compressed gas cylinders within a confined space,
9. Potential escape routes and rescue activities concerning confined spaces,
10. SES Confined Space Entry Program and Permit System,
11. Cutting/welding permits,
12. Emergency response team procedures and
13. Proper use of communication equipment in a confined space.

SES certifies in writing completion of training. The certification contains each employee's name, the signature of the trainer(s), materials covered and the dates of training. Training records are maintained on file per the SES Record Retention Policy and made available for inspection by employees and their authorized representatives.

L. Rescue and Emergency Services

The following requirements apply when employees enter permit spaces to perform rescue services.
1. The SES location ensures each member of the onsite rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.
2. Each member of the onsite rescue service is trained to perform the assigned rescue duties. Each member of the rescue service receives the training required of authorized entrants.
3. Each member of the onsite rescue service participates in a rescue simulation at least once every 12 months, in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces are in respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

4. Each member of the onsite rescue service is trained in basic first aid and in cardiopulmonary resuscitation (CPR). At least one member of the rescue service holds current certification in first aid and CPR is always available.

Training records are kept on file per the SES Record Retention Policy and include the date(s) of the training program(s) the instructor(s) for the program(s), the material(s) covered and the person(s) trained.

For permit required confined space rescue performed by outside services, the facility:

1. Has someone trained in CPR at the site,
2. Informs the rescue service of the hazards they may confront when called on to perform rescue at the facility,
3. Provides the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations,
4. Obtains a letter of agreement from the rescue service (i.e. Fire Department) to confirm their ability to respond to the location for purposes of providing assistance in performing confined space rescue and
5. Conducts an annual documented rescue simulation with the outside rescue service as in the section above for onsite rescue service teams.
6. Ensure that rescue team is present during entries with potential IDLH conditions

M. Non-Entry Rescue

To facilitate non-entry rescue, retrieval systems or other such methods are 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 meet the following requirements:

1. Each authorized entrant wears 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 employer can demonstrate that 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.
2. The other end of the retrieval line shall 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 shall be available to retrieval personnel from vertical type permit spaces more than 5 feet deep.

If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information shall be made available to the medical facility treating the exposed entrant.

N. Reclassifying a Permit Required Confined Space

A space designated as "permit required" confined space can be reclassified as "non-permit required" if the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space. The *CONFINED SPACE RECLASSIFICATION FORM* - Appendix C must be used for all confined space reclassifications. The permit space may be reclassified as a non-permit space for as long as the non-atmospheric hazards remain eliminated.

If it is necessary to enter the permit space to eliminate hazards, such entry will be considered to be a "permit required" confined space entry and all permit required space entry procedures must

be followed until all testing and inspection during the entry demonstrate that the hazards within the permit required confined space have been eliminated.

SES management personnel must document the basis for determining that all hazards in a permit space have been eliminated. A new job specific Hazard Survey – Appendix A and Reclassification Certification – Appendix C must be completed. The certification must include the date of the survey, location of the confined space and the signature of the person making the determination. The certification will be made available to each employee entering the space.

If hazards arise within a permit space that has been reclassified to a non-permit space, each employee in the space must exit the space immediately. The SES management personnel must then re-evaluate the space and determine whether it must be reclassified as a permit required confined space.

O. Outside Contractors

The SES project manager ensures contract employees have the understanding, knowledge and skills necessary for safe entry. **The contractors must supply their own confined space entry equipment, monitoring devices for proper entry and rescue plan.** See Appendix D for the *CONTRACTOR CHECKLIST FOR PERMIT REQUIRED CONFINED SPACE ENTRY.*

The SES project manager also:

1. Informs the contractor of the permit spaces and that permit required confined space entry is allowed only through compliance with the permit space program.
2. Apprises the contractor of the conditions that cause the area to be a permit space and the hazards associated with it.
3. Apprises the contractor of any precautions or procedures that have been implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
4. Coordinates entry operations with the contractor, when both SES personnel and contractor personnel will be working in or near permit spaces.
5. Debriefs the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

In addition to complying with the permit space requirements, each contractor who is retained to perform permit space entry is responsible for:

1. Obtaining any available information regarding permit space hazards and entry operations from a SES project leader;
2. Coordinating entry operations when both SES personnel and contractor personnel will be working in or near permit spaces;
3. Informing the SES project leader of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

Each party must abide by the specified LOTO procedures or disciplinary action will be taken up to and including removing the contractors from the work site.

P. Employee Participation/Follow-Up

Entry supervisors evaluate work being performed in the confined spaces to ensure compliance with the procedures. Other affected employees may also observe confined space entry procedures and comment on the procedures and elements of the program.

Q. Annual Program Review

The Confined Space Entry Program and List of Permit-Required Confined Spaces will be reviewed on an annual basis by the safety, maintenance and engineering departments to ensure that the information is accurate and up to date. If the review reveals any deviations or inadequacies, they will be correctly immediately and appropriate training given. See the *CONFINED SPACE ENTRY Annual Program Evaluation Checklist* – Appendix E.

The use of this policy is authorized by: _____ (President) _____Date

_____ (Safety Director) _____Date

Appendix A

CONFINED SPACE HAZARD SURVEY

Location/Bldg. **| Space to be entered**

Description of confined space

Frequency of entrance **| Duration of entrance**

Type of entrance: ☐ **Top** ☐ **Side** ☐ **Bottom**

Survey conducted by: **| Date**

YES	NO	POTENTIAL HAZARDS OF ENTRY	CONTROL OF IDENTIFIED HAZARDS (include PPE Requirements)	HAZARDS ELIMINATED? YES	NO
☐	☐	Electrical (attach LOTO Procedure)		☐	☐
☐	☐	High Temp		☐	☐
☐	☐	Low Temp		☐	☐
☐	☐	High Pressure		☐	☐
☐	☐	Low Pressure		☐	☐
☐	☐	Oxygen Deficiency		☐	☐
☐	☐	Oxygen Enriched		☐	☐
☐	☐	Toxic Atmosphere		☐	☐
☐	☐	Engulfment		☐	☐
☐	☐	Flammable/Combustible Materials		☐	☐
☐	☐	Chemical Hazards		☐	☐
☐	☐	Low Light Levels		☐	☐
☐	☐	Slips, Trips, Falls		☐	☐
☐	☐	Mechanical Hazards		☐	☐
☐	☐	Radiation		☐	☐
☐	☐	Drowning		☐	☐
☐	☐	Respirable Dust		☐	☐
☐	☐	Biological Hazards		☐	☐
☐	☐	Other		☐	☐
☐	☐	This space has the potential for Reclassification (Complete Reclassification Form)		☐	☐

Potential for changing conditions:

Emergency response and rescue requirements:

Other safety considerations/comments:

Permit or Non-Permit Confined Space:

Conditions for Reclassification (Non-Permit):

NOTE: THIS FORM MUST BE UPDATED WHEN THERE ARE CHANGES IN THE PROCEDURES OR PROCESS

Appendix B

SES Confined Space Entry Permit

Permit Starts: Date/ Time		Permit Expires: Date/ Time	
Client:		Date:	
Client Contact:		Client Phone:	
Client Address/Dept:		Job #:	
SES Branch:		SES Br Mgr Phone:	
Exact location of Space:		Description of Space:	
Volume of Space (LxWxH)		Capacity of Space (Gal)	
□ Horizontal Entry	□ Vertical Entry	□ Vertical drop >5'	Number of openings:

Client provided hazards:

SECTION 1:			
Hazard Identification:	**Chemical Hazards**		
Chemical	PEL/TLV	Chemical	PEL/TLV
1:		2:	
3:		4:	
5:		6:	

Hazard Identification:	**Physical Hazards**	(Check all that apply)	
□ Activities near area	□ Floor holes	□ Hot Work	□ Pathological Hazards
□ Baffles	□ Elevated work	□ Ionizing Radiation	□ Power tools
□ Burns (chem/heat)	□ Electrical Shock	□ Ladders	□ Product lines
□ Cold Stress	□ Engulfment	□ Limited lighting	□ Slip/Trip/Falls
□ Converging walls	□ Falling objects	□ Mechanical Equip	□ Sump/ Low spots
□ Contaminated cavities	□ Fire/Explosion	□ Moving Parts	□ Vehicle traffic
□ Culverts	□ Flooding	□ Noise	□ Ventilation shafts
□ Cuts/Abrasions	□ Heat Stress	□ Overhead Hazards	□ Stored Energy(see LOTO)
□ Dry materials	□ Other:		
□ Explosive dust	□ Other:		

Hazardous work activities to be conducted		(Check all that apply)	
□ Abrasive Blasting	□ Grinding	□ Pneumatic tools	□ Tank roof leg setting
□ Backhoe/Bobcat	□ Hotsy	□ Pressure Washing	□ Vac hose work
□ Bucketing material	□ Hot work	□ Scarifying	□ Vac pump transfers
□ Drum loader use	□ Inerting	□ Shoveling	□ Water Blasting
□ Excavations	□ Painting	□ Solvent cleaning	□ Work on waterway
□ Other:			
□ Other:			

SECTION 2:			
Hazard Controls			
□ Aerial Lifts	□ EXP Proof Equip	□ Ladders	□ Remote handling tools
□ Area Control	□ Eye Wash	□ 3 Points Contact	□ Ring Buoy
□ Barrier Cream	□ Fall Protection	□ LOTO Permit	□ Safety Shower
□ Bonding/Grounding	□ Flushing	□ Material handling equip	□ Scaffolds
□ Cold Stress Monitor	□ Fire Extinguisher	□ Non-sparking tools	□ Surface improvement
□ Designated Smoke Area	□ GFCI	□ PFD w/lights	□ Traffic Control
□ Designated Rest Area	□ Heat Stress Monitor	□ PPE	□ Vac Break (Safety T)
□ Dig Safe #	□ Hot Work Permit	□ Proper lifting	□ Ventilation
□ Eliminate ignition source	□ Inerting	□ Reflective Clothing (C3)	□ Water Blast Checklist

□ Other: _____

□ Other: _____

Communication Methods			
□ Hand Signals	□ Radio	□ Air horn	□ Other:

Personal Protection			
□ Hard Hat	□ Rain Suit	□ Dust suit	□ FR Clothing
□ Safety Boots	□ Blaster Boots	□ Overboots	□ Cut resistant clothing
□ Eye Protection	□ Dust Goggles	□ Splash Goggles	□ Harness
□ Chemical Prot. Suit	Type:		
□ Inner Glove	Type:		
□ Outer Glove	Type:		
□ Hearing Protection	Type/NRR:		
□ Respirator			
□ Half-face	□ Full-face	□ Cartridge Type:	
□ SAR w/egress	□ SAR	□ SCBA Type:	□ 2216 □ 4500

Lockout/Tagout Controls	(Check all that apply)		
□ Client Procedure used	□ Group lock box used	□ Electrical Ergy removed	□ Hydraulic Ergy removed
□ Gravity Ergy removed	□ Pneumatic Ergy removed	□ Steam Ergy removed	□ Other:

Isolation Methods:	1. Lock/Tag applied 4. Physical block/wedge	2. Line broken/blanked 5. Energy drained	3. Double block & bleed 6. Fuse/ rack pulled

Point of Isolation	**Isolation control used**	**Point of Isolation**	**Isolation control used**
1		6	
2		7	
3		8	
4		9	
5		10	

Rescue Planning:

Client Provided Rescue Service used ☐ Yes ☐ No. If "yes", has communication been established with rescue ☐ Yes ☐ No
Method of contact with Rescue ☐ Radio channel _____ ☐ Phone _____ ☐ On standby at space

In the event of an incident where an entrant is unable to exit the space on their own the following rescue plan is to be immediately initiated.

The acting attendant, CSE Supervisor and the following assisting personnel will participate in rescue activities.

_____ _____ _____ Duties Transferred at (Time) _____ to

_____ _____ _____

INITIAL ACTIONS

The acting attendant will make notification to assisting personnel or CSE supervisor and direct them to call emergency medical services. An assessment of the space hazards will be made. All equipment that would interfere with rescue activities will be immediately turned off to reduce noise and any obstructions removed.

NON-ENTRY RESCUE

Non-entry rescue must be attempted immediately as follows: All entrant positioning must be monitored to verify that non-entry rescue does not increase injury.

HORIZONTAL RESCUE

The acting attendant (and assistants) at the time of incident recognition will pull the entrant(s) by their lifeline to the opening of the space and out of the space and begin emergency decontamination procedures.

VERTICAL RESCUE

The acting attendant (and assistants) at the time of incident recognition will activate the mechanical extraction device, hoist the entrant(s) connected to the device(s) out of the space, and begin emergency decontamination procedures.

ENTRY RESCUE

In the event that entry rescue is necessary, it may only be performed as long as there are sufficient personnel to contact emergency services and assist with rescue activities.

The following person will act as the rescue attendant and <u>will not</u> enter the space. ☐ Acting attendant ☐ CSE Supervisor ☐ Assisting Personnel _____
_____

Rescuer(s) making entry will don the personal protective clothing, gloves, full body harness, lifeline, etc. Rescue personnel will don the following supplied air respiratory equipment: ☐ SAR Cascade ☐ SAR air cart ☐ SCBA (low pressure/2216) ☐ SCBA (high pressure/4500)

Upon entering rescuer(s) will assess the situation, determine the appropriate rescue method, and communicate with the rescue attendant. The entering rescuer(s) will assist in moving the entrant(s) to a position where they can be removed from the space. Emergency decontamination procedures will be completed on all personnel exiting the space.

The following are special procedures that must be implemented for this permit space:

_____

_____

SECTION 3:			
Air Monitoring Planning			
Equipment	Calibration Date	Equipment	Calibration Date
☐ 4 gas		☐ Ammonia	
☐ SO_2		☐ Chlorine Dioxide ClO_2	
☐ PID		☐ CO_2	
☐ Mercury (Jerome)		☐ Mercury (Lumex)	
☐ Dust Monitor		☐ Noise Monitor	
☐ Personal Pump		☐ Rad Detector	
☐ Colorimetric Tubes	Manuf:	Tube Type:	Exp Date:
☐ Colorimetric Tubes	Manuf:	Tube Type:	Exp Date:
Monitoring Action Levels			
Chemical	Level D Range	Level C Range	Level B/A Range
O2/LEL/H2S/CO	19.5-23.5%/ <10%/<10ppm/<35ppm	19.5-23.5%/ <10%/<10ppm/<35ppm	<23.5%/<10%/<100ppm/<1200ppm
1:			
2:			
3:			
4:			
5:			
6:			

SECTION 4:

Supervisor Pre-Entry Checklist

Ventilation Checklist

☐ CLEAN MAKE-UP AIR	☐ BLOWER AS CLOSE AS POSSIBLE TO SPACE	☐ ELBOWS HAVE NO SHARP ELBOWS	☐ LOCAL HOT WORK VENT	☐ ELEC. EQUIP. IS EXP. PROOF
☐ BLOWER SECURED	☐ FLEX HOSE DIA. MATCHES BLOWER DIA.	☐ LENGTH OF CURVE AT 3X HOSE DIA.	☐ DISCHARGE & MAKEUP-AIR SEPARATED	☐ HOSE CLOSE TO BOTTOM
☐ BLOWER GROUNDED	☐ LIMIT USE OF DUCT ELBOWS	☐ ALL SPACE OPENINGS CLEAR	☐ BLADE GUARDS ARE IN PLACE	☐ INLET SHIELDED FROM DEBRIS

Verification of Safe Entry Conditions

☐ UNAUTH. ENTRY PROHB.	☐ NO ENTRY CONSIDERED	☐ HAZARDS CONTROLLED	☐ ATMOSPHERE CHECKED	☐ ISOLATION COMPLETED
☐ SIGNS POSTED	☐ APPLICABLE	☐ ATMOSPHERIC	☐ OXYGEN	☐ BLANKED/BLINDED
☐ ACCESS PROTECTED	☐ NOT APPLICABLE	☐ PHYSICAL	☐ LEL	☐ MISALIGNED
☐ HOST EMPL.INFORMED	WHY:	☐ CHEMICAL	☐ TOXIC	☐ DBL BLOCK & BLEED
☐ CONTRACTOR INFORMED		☐ OTHER:		☐ LO/TO COMPLETE
☐ EMERGENCIES/ CONTINGENCIES	☐ COMMUNICATIONS	☐ ACCEPTABLE ENTRY CONDITIONS APPROVED BY SUPERVISOR (ENTER INITIALS)		☐ EXPOSURE SYMPTOMS DISCUSSED
☐ ESTABLISHED	☐ ESTABLISHED	☐ ESTABLISHED	☐ HAZARDS CONTROLLED	☐ PERMIT COMPLETE
☐ DISCUSSED	☐ DISCUSSED	☐ DISCUSSED	☐ ATMOSPHERE LEVELS OK	
☐ VERIFIED	☐ VERIFIED	☐ PERMIT SIGNED	☐ PERMIT DISCUSSED	
☐ Reviewed w/ H&S	Name		Date	

ENTRY SUPERVISOR'S COMMENTS/SAFETY MEETING NOTES

I VERIFY THAT ALL ACCEPTABLE ENTRY CONDITIONS HAVE BEEN MET; THE SPACE IS ISOLATED AND READY FOR ENTRY.
NAME AND SIGNATURE OF ENTRY SUPERVISOR: _____
PRINT SIGNATURE

Supervisor Duties Transferred To: _____
PRINT SIGNATURE TIME

Crew Member Signatures

I HAVE READ AND UNDERSTAND THIS ENTRY PERMIT; I AGREE TO COMPLY WITH ALL PORTIONS OF IT.

SECTION 5:

Air Monitoring Log

Environmental Conditions (Temp, Pressure, Humidity): _____

Time	Location	O_2	LEL	CO	H_2S					
Pre-Entry										

Monitoring Conducted by: _____ Title:_____

Signature: _____

Comments: _____

SECTION 6:

Entry Tracking Log

Attendant Name	Entrant Name	Time In	Time Out	Time In	Time Out	Time In	Time Out

SECTION 7:

Permit Termination

Shared encountered hazards with client: Yes ___ No ___ (If no, explain)_____

LOTO Equipment Removed: Yes ___ No ___ Equipment Control Returned to: _____

Permit Cancelled Date: ___/___/_____ Time: _____ Supervisor's Signature _____

Appendix C

CONFINED SPACE RECLASSIFICATION CERTIFICATION

Location/Building:_____ Space to be entered:_____

Description of work:_____ Work Order #: _____

Certification Authorized: Date: _____ Time: _____

Certification Expires: Date: _____ Time: _____

ATMOSPHERIC TEST RECORD			
Measurement	**Limits**	**Time**	**Result**
%O2	**(19.5% - 23.5%)**		
%LEL	**(Less than 10%)**		

In order to remain a Reclassifed Confined Space Certification, the following criteria must be met:

NO WELDING ALLOWED

NO INTRODUCTION OF ATMOSPHERIC HAZARDS

HAZARD SURVEY UTILIZED AND ATTACHED

LOCKOUT SURVEY UTILIZED AND ATTACHED

I certify that all required precautions have been taken and equipment provided to eliminate hazards in the Confined Space.

_____ _____

Signature of Operations *Date*

_____ _____

Signature of Entrant Leader *Date*

(BOTH SIGNATURES REQUIRED)

CONTRACTOR CHECKLIST-PERMIT REQUIRED CONFINED SPACE

This check list must be utilized for any contractor that will be performing work that involves permit space entry.
1910.146(c)(8)

The facility will:

☐ Inform contractor that workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of 1910.146-Permit Required Confined Spaces.

☐ Apprise contractor of elements of program including the hazards identified at the facility. In addition, facility should also apprise the contractor of why the space is a *permit required* confined space.

☐ Apprise contractor of any precautions or procedures that the facility has implemented for the protection of employees in or near permit spaces where *contractor* employees will be working.

☐ The facility and contractor will coordinate entry operations when contractor and facility employees will be working in or near permit spaces as defined in section (d)(11) of 1910.146.

☐ The facility and contractor will undergo a debriefing at the conclusion of the entry operation. This debriefing will include the permit space program, any hazards confronted or created in the permit space during their operation.

The contractor will:

☐ Comply with the permit space requirements that apply to employers in 1910.146.

☐ Obtain any available information regarding permit space hazards and entry operations from the facility.

☐ Coordinate entry operations with the facility when both contractor and facility personnel will be working in or near permit spaces as defined in section (d) (11) of 1910.146.

☐ Inform facility of the permit space program that the contractor will follow and any hazards confronted or created in the permit space(s) either at the debriefing or during the entry operation.

SES Project Manager Date

Contractor Date

CONFINED SPACE ENTRY Annual Program Evaluation Checklist

	Y	N	NA	COMMENTS
A. Confined Space Entry Program				
1. Written program complete.				
2. Training complete and documented.				
1. Has an accurate and thorough site confined space inventory been conducted?				
2. Is there a completed hazard survey with identified precautions for each of the identified confined spaces (for entry)?				
3. Have all affected employees received adequate information and training?				
4. Is the site relying on in-house resources to satisfy the rescue service provisions? If yes, does the in-house rescue service meet the following conditions:				
a. Necessary PPE/rescue equipment provided?				
b. Trained in assigned duties?				
c. Annual practice sessions?				
d. Trained in first aid and CPR?				
5. If the site is relying on an outside rescue service, have the following conditions been met:				
a. Pre-arrangement with outside rescue service?				
b. Provide outside rescue service with access to all permit spaces for planning and training?				
6. Are appropriate oxygen/toxic gas monitors available and ready to use for confined space entry clearance?				
7. Are oxygen/toxic gas monitors used for confined space entry calibrated and maintained per the manufacturer's recommendations?				
8. Does a review of the expired permits indicate that the confined space permits are being properly and accurately completed and canceled when the job is completed?				

C. Requirements for Special Situations				
1. Procedures for reclassifying a space established?				
2. Procedures for working with outside contractors are established.				
3. A review of the Injury Records of the previous year conducted and any injuries noted to be related to a confined space entry issue were evaluated to see if any part of the program needs improvement.				

Review Performed by:
Safety Date

Manager Signature: Date