



## Quality Assurance Work Instruction

VAFB-0001-7000-05-D

Approved:

Date: 27 October 2008

Title: Launch Support Services (LSS) Confined Spaces  
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### 1.0 POLICY/PURPOSE

Personnel are not permitted to enter a confined space without first determining the hazards associated with such an entry and, when appropriate, take the necessary precautions to ensure personnel are fully protected as required by regulations (e.g., OSHA ) and this work instruction (WI). The purpose of this WI is to establish the Santa Barbara Applied Research (SBAR), Inc. LSS confined spaces supplement program.

### 2.0 SCOPE

This WI applies to all LSS operations where confined spaces are located. SBAR subcontractors also comply with the provisions of this WI, if necessary.

### 3.0 REFERENCES AND DEFINITIONS

#### 3.1 References

**ISO 9001: Quality Management Systems-Requirements, Third Edition (2000-12-15)**

29 CFR 1910.146: Permit-Required Confined Spaces

AFOSHSTD 91-25: Confined Spaces Program

#### 3.2 Definitions

**Acceptable Entry Conditions:** Conditions that ensure LSS employees that must exist in a Permit Space to allow entry and continued occupancy.

**Attendant:** An employee stationed outside one or more Permit Spaces who monitors the authorized entrants and who performs all assigned attendant duties, to include, when applicable, rescue duties.

**Authorized Entrant:** An employee who is authorized by LSS to enter a Permit Space.

**Confined Space:** An area/space that:

- 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; and
- Is not designed for continuous employee occupancy.

Examples include water valve pits, tanks, pressure vessels, silos, storage bins, pits, launch facilities, etc.

**Confined Space Assessment Form (Form CP-00-7000-05-B):** A form that is used to evaluate and determine whether or not a confined space is a Permit Space or Non-Permit Space.



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**Emergency:** Any occurrence or situation, internal or external to the Permit Space that could endanger entrants. Includes any failure of hazard control systems or monitoring equipment( e.g., O2 or hazardous vapor meter failure, etc.).

**Entry:** The action by which a person passes through an opening into a Permit Space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the body breaks the plane of an opening into the space.

**Entry Permit or Permit (Form CP-00-7000-05-C):** A written or printed document that is provided by LSS to allow and control entry into a Permit Space and contains specified information about the Permit Space.

**Entry Supervisor:** The person (e.g., foreman, program manager, team chief, lead technician) responsible for determining if acceptable entry conditions are present at a Permit Space where entry is planned. This individual authorizes entry and oversees entry operations and terminates entry as required should an emergency arise. The entry supervisor is the last person to sign the entry permit after all conditions have been met.

**Environmental Health and Safety (EH&S) Representative:** The LSS staff responsible for safety and environmental programs performed at the contract level. **(Program Manager, QSS or Environmental Technician and/or combination of all three for LSS)**

**Hazardous Atmosphere:** An atmosphere that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (i.e., escape unaided), injury, or acute illness from one or more of the following:

- A flammable gas, vapor, or mist in excess of ten percent of its lower explosive limit (LEL) or lower flammable limit (LFL).
- An airborne combustible dust at a concentration that meets or exceeds its LEL or LFL.

### NOTE

**THIS CONCENTRATION MAY BE APPROXIMATED AS A CONDITION IN WHICH THE DUST OBSCURES VISION AT A DISTANCE OF FIVE FEET OR LESS.**

- Atmospheric oxygen below 19.5 percent or above 23.5 percent.
- Atmospheric concentration of any substance for which a dose is published in OSHA 1910.146, Subpart G, Occupational Health and Environmental Control, or Subpart Z, Toxic and Hazardous Substances, of this part which could result in employee exposure in excess of its dose or permissible exposure limit as well as applicable Material EH&S Data Sheets (MSDS).
- Any other atmospheric condition that is Immediately Dangerous to Life or Health (IDLH).



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**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 a worker's ability to escape unaided from a Permit Space.

**Hot Work ("Burn") Permit:** Written authorization to perform operations capable of providing a source of ignition.

**Inerting:** Inerting is the displacement of the atmosphere in a Permit Space by a noncombustible gas, such as nitrogen, to such an extent that the resulting atmosphere is noncombustible. Further, inerting produces an IDLH atmosphere for oxygen; therefore, entry will be denied and/or personnel will immediately evacuate.

**Lower Explosive Limit (LEL):** The lowest concentration of flammable or combustible vapor which can be ignited by a spark or flame. Also referred to as the Lower Flammable Limit or LFL.

**Master Entry List (MEL):** A document lists all known confined spaces and designates each as a Permit Space or Non-Permit Space specific to a contract and contain the following minimum information:

- Building/location
- Name/area/designation of the confined space
- Description of the confined space (e.g., air handler, tank)
- Identify whether the space is a Permit Space or Non-Permit Space
- Date the space was evaluated.

**Non-Permit Confined Space (Non-Permit Space):** A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm. This includes the absence of, or potential to contain, any atmospheric hazard.

**Oxygen Deficient Atmosphere:** An atmosphere containing Less than 19.5 percent oxygen by volume, an IDLH atmosphere.

**Oxygen Enriched Atmosphere:** An atmosphere containing more than 23.5 percent oxygen by volume, thereby increasing the likelihood of a catastrophic fire.

**Permit-Required Confined Space (Permit Space):** A confined space that has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.



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- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious EH&S or health hazard.

**Permit-Required Confined Space Program (Permit Space Program):** The LSS overall program for controlling, and where appropriate, for protecting employees from Permit Space hazards and for regulating employee entry into Permit Spaces.

**Prohibited Condition:** Any condition in a Permit Space that is not allowed by the entry permit during the period when entry is authorized.

**Rescue Service:** Designated personnel who are authorized and trained to rescue personnel from a Permit Space.

**Retrieval System:** Equipment used for non-entry rescue of persons from a Permit Space. This equipment includes a retrieval line, chest or full-body harness, wristlets (if appropriate), and a lifting device or anchor.

**Testing:** The process by which the hazards that may confront entrants in a Permit Space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

**Upper Explosive Limit (UEL):** The highest percentage of a material in air that can be ignited. Accordingly, if the UEL is exceeded, the mixture cannot be ignited and sustain combustion.

## 4.0 RESPONSIBILITIES

### 4.1 Quality/Safety/Scheduler (QSS) Manager

The QSS Manager is responsible for this WI and revises, as necessary.

The QSS may perform entry supervisor responsibilities when required, to include issuing written permits for other SBAR LSS employees entering confined spaces.

Be knowledgeable of entrant, rescue personnel, rescue equipment, rescue procedures, confined space permit procedures, testing requirements, and other requirements specified in PCSI, EG&G and the 576 FLTS Master Entry Plan (MEP) confined space procedures. SBAR employees should not use the PCSI, EG&G, or 576 FLTS procedures, but only be knowledgeable of them. Additionally, ensure any discrepancies of procedures, unsafe conditions, or potential health and safety hazards are reported to contract management.



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Obtain a copy of the confined space entry permit anytime SBAR employees enter into a confined space. The SBAR QSS manager will be included, as necessary, on the PCSI/EG&G confined space permit when they enter into a confined space atmosphere to observe/inspect PCSI/EG&G maintenance activities. All other SBAR employees will be on an SBAR written permit, for entering into a confined space.

Ensure notification is made to management and that personnel report to Medical Services for further evaluation of physical fitness if the employee has suffered:

An injury or illness, or;

Suffers from any other condition (on or off the job) that could impair any normal bodily activities such that work within the confined space could present a hazard or where emergency exit from the confined space (aided or unaided) would be abnormally hindered.

Further confined space entry will be contingent upon approval of Medical Services.

File and maintain current copies of this [WI CP-00-7000-05-D](#), SBAR Confined Space Assessment Form ([Form CP-00-7000-05-D](#)), SBAR Written Permit Form ([Form CP-00-7000-05-C](#)), PCSI's Confined Space Management and Emergency Egress Procedures, EG&G Confined Space Plan, and 576 FLTS MEP.

Help ensure emergency egress training is given to employees before they enter permit required confined spaces and annually thereafter (e.g. every 12-months minimum).

Help ensure employees who enter a permit required confined space are trained on the proper procedures for co-existing in the space with military personnel, DoD civilian personnel, and other contractors.

### 4.2 Program/Contract Managers

Program Manager ensures confined space requirements are fulfilled for LSS and ensures all requirements of this WI are met.

### 4.3 Contract/Subcontract Managers

When confined spaces are present on a contract, the Contract/Subcontract Managers ensure that confined space programs for each company comply with the applicable requirements of this WI as well as 29 CFR 1910.146 (and applicable state OSHA requirements)..



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Shall have medical services evaluate and determine limitations for any employee whose physical or mental fitness becomes such that working within a confined space could create a hazard or where emergency exit from the confined space (aided or unaided) would be abnormally hindered.

Shall obtain medical services determinations of limitations of an employee or have medical services provide clearance for an employee to perform confined space entries, as necessary.

### LSS Environmental Health and Safety (EH&S) Representative

Ensure personnel are responsible for:

- Implementing the LSS confined spaces program per this specific WI.
- Referring to the applicable OSHA references (e.g., 29 CFR 1910.146, and appropriate state OSHA requirements, and appendices) for the details necessary to administer a successful confined spaces program.
- Completing Confined Space Assessment Forms for all confined spaces and maintaining the Master Entry List for the LSS contract. (**NOTE:** The LSS EH&S Representative may delegate the completion of Confined Space Assessment Forms to personnel who are trained and qualified to make these assessments.)
- Issuing Entry Permits for employees, as required. . (**NOTE:** The LSS EH&S Representative may delegate this to personnel who are trained and qualified to issue Entry Permits.)
- Conducting training IAW SBAR *Confined Spaces Training Syllabus (CP-00-7000-05-A)*.
- Ensure required training for employees is conducted for attendant, entrant, supervisor, and emergency rescue.
- Developing, maintaining, and distributing confined spaces information materials.

#### 4.4 Managers/Supervisors

Managers or supervisors ensure their operations comply with confined spaces program requirements. Additionally, managers and supervisors ensure their personnel understand which areas they work in are confined spaces and that personnel further understand the risks associated with entering confined spaces, especially Permit Spaces.

#### 4.5 Employees





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Prior to entering any confined space, employees contact QSS or LSS EH&S Representative to determine if the space is a Permit Space or a Non-Permit Space. If the space is a Permit Space, employees fully comply with this WI and all Entry Permit conditions.

LSS personnel who enter into confined spaces with PCSI, EG&G, military, DoD civilian, and other contractor personnel will adhere to the following:

LSS SBAR Employees will be responsible for their adherence to company procedures for existing in a confined space with non-company personnel or outside agency personnel.

LSS SBAR employees will not enter permit required confined spaces under anyone's program other than SBAR's unless approved by the LSS EH&S or equivalent.

LSS SBAR employees will co-exist with outside agency personnel within the same confined space as long as operations are safe and do not hinder the tasks activities within the space.

LSS SBAR employees will immediately evacuate a confined space where outside agencies co-exist in the space if that space becomes unsafe to be in.

LSS SBAR employees will not be responsible for ensuring outside agencies who co-exist in the space have been properly trained, etc. on the requirements to enter into the permit required confined space/confined space.

LSS SBAR personnel will be familiar with confined space programs for outside agency personnel, when necessary, if they are required to co-exist within the space:

As a general rule LSS SBAR employees will not be responsible for outside agency personnel emergency egress requirements. SBAR employees will assist PCSI and EG&G employees with egress requirements, when necessary. LSS SBAR employees will as "Good Samaritan's" perform emergency egress for outside agency personnel when a life threatening situation exists.

While working within the same confined space as outside agency personnel, LSS SBAR employees will be knowledgeable of the tasks those agencies will perform within the same space.

LSS SBAR employees will immediately report any conflicts or hazards that may or have occurred while co-existing in the confined space to the SBAR QSS or Program Manager



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LSS SBAR employees will ensure they do not endanger the safety and health of others co-existing within the confined space.

### 5.0 REQUIREMENTS/PROCEDURES

#### 5.1 General

LSS personnel are encouraged to participate in the development and implementation of the confined space program. This is accomplished through the solicitation of recommendations by employees as well as participation during the assessment of the various confined spaces.

LSS EH&S Representative, along with Affected Personnel, evaluates the hazards of all confined spaces and determines if those spaces are Permit or Non-Permit Spaces. This assessment is completed prior to employee entry. Additionally, LSS EH&S Representative lists all confined spaces on a Master Entry List (MEL) that is distributed to all employees and, upon request, to the Customer (e.g., base safety office).

LSS EH&S Representative, along with Entry Supervisors and entrants, reviews and revises, as necessary, entry operations when there is reason to believe that measures taken under this program do not provide sufficient protection. Further, a yearly review is conducted of all Entry Permits to determine if sufficient protection is provided and if changes are needed to the Permit Space program. LSS personnel are encouraged to offer their suggestions.

Air Force/military personnel/DoD civilians will be responsible for compliance following the 576 FLTS Master Entry Plan for coexisting in the same confined space.

Other contractor personnel will be responsible for compliance with Federal OSHA requirements (and applicable state OSHA requirements) for coexisting in the same confined space.

#### 5.2 Permit System

A written Entry Permit, i.e., [Form CP-00-7000-05-C](#), is issued before LSS employees enter a space defined as a Permit Space. Additionally, subcontractors are authorized to substitute their own Entry Permit form. Entry Permits contain the following information/procedures:

- The permit is signed by the LSS EH&S Representative, Entry Supervisor, or designee (Block 8 of [Form CP-00-7000-05-C](#)) and, as a minimum, the form will contain the following applicable items:
- Specify acceptable entry conditions.
- Prior to employee entry, the internal atmosphere is tested, with a calibrated direct-reading instrument, for the following conditions in the order given.





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- Oxygen content.
- Flammable gases and vapors, and potential toxic air contaminants.

**NOTE - AFFECTED EMPLOYEES, OR THEIR AUTHORIZED REPRESENTATIVE, ARE GIVEN THE OPPORTUNITY TO OBSERVE CONFINED SPACE TESTING PRIOR TO ENTRY. THEIR NAMES ARE DOCUMENTED ON THE ENTRY PERMIT (BLOCK 5 OF FORM CP-00-7000-05-C).**

- Procedures to isolate the Permit Space.
- Procedures to purge, inert, flush, or ventilate the permit required space, as necessary, to eliminate or control atmospheric conditions.
- Provide pedestrian, vehicle, or other barriers necessary to protect entrants from external hazards.
- Verify conditions in the Permit Space remain acceptable throughout the authorized entry.
- Define, as applicable, what equipment is present during Permit Space entry/occupancy.

The following equipment, on a case-by-case basis, is provided:

- Oxygen, combustible gases and vapors, and toxic gas detectors.
- Ventilation equipment to obtain acceptable entry conditions.
- Communications equipment.
- Personal Protective Equipment (PPE).
- Lighting equipment.
- Barriers and shields.
- Equipment, such as ladders for safe ingress and egress.
- Rescue and emergency equipment.
- Any other equipment necessary to provide a safe working environment.

Additional requirements include:

- Evaluate permit required space conditions as long as someone is in the space and prior to each entry.
- Provide at least one attendant outside the Permit Space to control entry and rescue personnel.



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- Designate the persons who are to have active roles, i.e., Supervisor, Authorized Entrants, Attendants, who will test the atmosphere, etc.

Permit Spaces are closed (e.g., hatches closed and locked) as soon as entry is terminated. Normally, this will be the time listed on the Entry Permit "Authorized Duration of Permit" block (Block 1 of the SBAR Entry Permit Form).

For instances when LSS workers must enter a confined space with another company, the LSS EH&S Representative determines if the space is a Permit Space or Non-Permit Space. If the space is a Permit Space, the LSS EH&S Representative will either develop a separate permit or have LSS employee included on the subcontractor permit, after coordination and approval with the other company/agency entry supervisor, EH&S office, etc.

### CAUTION

**SBAR DOES NOT AUTOMATICALLY ASSUME A CONFINED SPACE IS A NON-PERMIT SPACE JUST BECAUSE THE OTHER COMPANY OR AGENCY ALLOWS ITS WORKERS TO ENTER UNDER NON-PERMIT PROCEDURES.**

For instances when LSS workers must enter a confined space with Air Force/Military personnel/DoD civilians, the LSS EH&S Representative determines if the space is a Permit Space or Non-Permit Space. If the space is a Permit Space, the LSS employees will follow this WI and the Air Force/Military personnel/DoD civilians will follow their Master Entry Plan (MEP) established under AFOSH Standard 91-25. LSS employees will coexist in the space with knowledge of the Air Force/Military personnel/DoD civilian confined space program. LSS personnel will coexist in the space in a safe manner and will not create any unknown hazards to co-occupants of the space.

Before entry begins, the Entry Supervisor listed on the Entry Permit, along with the Authorized Entrants, inspects the confined space and ensures compliance with the requirements of the Entry Permit. The Entry Supervisor then signs the permit and posts it at or near the confined space entry point. Authorized personnel entering the Permit Space then verify that pre-entry preparations have been completed. Additionally, the entrant's authorized representative is also authorized to review the permit.

Entry is only allowed during the period designated on the permit and should an entrant question the safety of the permit space after entry, the entrants leave the permit space and notify LSS EH&S Representative, Subcontractor Representative, Air Force/Military Safety Representative and DoD Civilian Safety representative, as necessary. All entrant safety concerns identified will be evaluated and, if necessary, a new permit is issued with the new conditions listed on the new permit.



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The Entry Supervisor terminates entry when the operations covered by the permit have been completed and/or a condition arises that is not allowed by the Entry Permit. The LSS EH&S Representative or subcontractor debriefs Entry Supervisors at the conclusion of entry operations regarding any hazards confronted or created during the entry. Suggestions are also solicited to improve the permit system.

Entry Supervisors provide the LSS EH&S Representative with a copy of all expired Entry Permits to facilitate review of the program. Any problems or suggestions on how to improve the program will be documented. LSS EH&S Representative files permits for at least one year.

### 5.3 Duties of Authorized Entrants

#### **WARNING**

**DO NOT ENTER ANY PERMIT SPACE UNTIL SATISFIED WITH THE CONDITIONS LISTED ON THE PERMIT AS WELL AS THE CONDITIONS INSIDE THE SPACE ITSELF!**

Authorized entrants must:

- Know the hazards that may be faced during entry to include the mode, signs or symptoms (including behavioral), and the consequences of exposure to a hazardous environment.
- Properly use all required equipment and comply with the entry permit.
- Communicate with the attendant as necessary as to the safety of the space and to ensure the attendant can promptly notify the entrants of the need to evacuate the space.
- Alert the Attendant whenever:
  - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
  - The entrant detects a prohibited condition.
  - Conditions in the space conflict with operations of personnel co-existing in the same space
- Entrants evacuate the space as quickly as possible whenever:
  - An order to evacuate is given by the Attendant, the Entry Supervisor, or LSS EH&S Representative. This includes evacuation directed by personnel coexisting in the same space.
  - Warning signs or symptoms of exposure to a dangerous situation are detected.



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- A prohibited condition is detected.
- An evacuation alarm is activated or given.
- Entrants will carefully read the permit and ensure all known and possible hazards are addressed and that they understand those hazards prior to entry into any Permit Space, regardless of whether the space is controlled by LSS SBAR personnel, our subcontractor, another agency or other personnel co-existing in the space..

### 5.4 Duties of Attendants

Attendants must:

- Know the hazards associated with each entry, to include information on the mode, signs or symptoms (including behavioral), and the consequences of entrants being exposed to any hazards that might be present within the confined space.
- Remain outside the Permit Space, maintain an accurate count of who enters/leaves the space, thoroughly brief all authorized entrants as to the conditions of the Permit Space, and ensure only authorized entrants enter the confined space.

**NOTE - ATTENDANTS, WHO ARE ALSO DESIGNATED AS THE RESCUE SERVICE, MAY ONLY ENTER A CONFINED SPACE AFTER TRAINING AND ONLY FOR RESCUE PURPOSES.**

- Communicate effectively with the entrants while the space is occupied.
- Monitor conditions inside and outside the space to ensure it remains safe for the entrants and, should conditions deteriorate or become suspect, immediately evacuate the confined space.

**NOTE - SHOULD THIS SITUATION ARISE, NOTIFY LSS EH&S REPRESENTATIVE OR OTHER AGENCY SAFETY REPRESENTATIVES BEFORE ANYONE IS ALLOWED TO REENTER.**

- If needed, initiate on-site rescue procedures. This includes summoning additional emergency response forces, e.g., the fire department, ambulance, etc. prior to beginning or assisting in rescue operations.
- Perform no duties that might interfere with their Attendant responsibilities.

### 5.5 Duties of Entry Supervisors

#### **WARNING**

**DO NOT ASSUME THE OTHER COMPANY OR AGENCY PERMIT ACCURATELY REFLECTS ALL OF THE HAZARDS PRESENT OR MAY BE PRESENT IN THE SPACE!**



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Entry Supervisors must:

- Know the hazards associated with the Permit Space, including the mode, signs or symptoms (including behavioral), and consequences of exposure to any of the hazards in/around the space.
- Verify the Entry Permit is properly completed, that all tests mandated by the permit have been satisfactorily accomplished, and that all procedures and equipment required by the permit are in place. At this time, the entry supervisor signs the permit.
- Terminate the entry and cancel the permit should any situation arise that jeopardizes the safety of the entrants or the conditions required by the permit are no longer present.

**NOTE - NOTIFY LSS EH&S REPRESENTATIVE OR OTHER AGENCY SAFETY REPRESENTATIVE ANYTIME THE PERMIT IS CANCELED FOR CAUSE AND DO NOT ALLOW REENTRY UNTIL THE SITUATION HAS BEEN REVIEWED AND A NEW PERMIT HAS BEEN ISSUED.**

- Verify that rescue services are immediately available and that the means of summoning additional emergency services, e.g., the fire department, etc., are also present.
- Deny entry to unauthorized individuals and remove unauthorized entrants from the space.
- Whenever responsibility for Permit Space entry is transferred to LSS, review the conditions of the permit and verify these conditions are acceptable and are still present in the confined space. LSS then issues a new permit prior to LSS personnel entering the space.

### 5.6 Rescue and Emergency Services

**NOTE - RESCUE PERSONNEL ARE ASSIGNED NO OTHER DUTIES (OTHER THAN ATTENDANT) WHILE PERSONNEL ARE IN THE PERMIT SPACE.**

For each Permit Space, **AT LEAST** one LSS trained, standby person is on-site and immediately available to perform rescue and emergency services. Normally, the Attendant doubles as the rescue force.

The following requirements apply to rescue personnel:

- Rescue personnel are properly trained on the hazards associated with the Permit Space, how to use the required personal protective equipment (e.g., respirator) and rescue equipment, and how to perform their assigned rescue duties. Additionally, they receive the same training Authorized Entrants receive.
- Each rescue member practices making Permit Space rescue before assuming rescue duties and at least yearly thereafter. These simulations involve actual techniques and equipment, live personnel or training dummies, and are held at actual permit locations.



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- Each rescue team member is currently certified/trained in first aid and cardiopulmonary resuscitation (CPR).
- Normally, SBAR only relies upon SBAR or its subcontractors (as agreed upon between companies) employees to provide rescue services. If another company provides Rescue Services for SBAR personnel, LSS Program Manager or QSS first verifies that firm's level of training, competency, and compliance with applicable OSHA directives. Rescue of AF/Military/DoD Civilians who coexist in the space can be provided by LSS employees as long as there is an approved agreement made between both agencies. Approval would also include verifying that agencies level of training, competency, and compliance with applicable OSHA, AFOSH Standards and any DoD governing MEP. However, LSS would provide rescue as "Good Samaritans" for life threatening situations to any DoD Civilian personnel, as required. **NOTE - THE LOCAL FIRE DEPARTMENT IS NOT THE PRIMARY RESCUE SERVICE FOR LSS OPERATIONS.**

To facilitate non-entry rescue, retrieval systems or methods are used, unless the retrieval equipment would increase the overall risk of injury or would not contribute to the rescue of the entrant. Retrieval systems meet the following requirements:

- Each entrant uses a chest or full body harness, with a retrieval line attached at a suitable point so that when rescued (removed from the space), the entrant presents the smallest possible profile. However, a stokes litter or similar device or wristlets are used in lieu of the chest or body harness if the LSS EH&S Representative or rescue person believes a chest/body harness will not work or stokes litter or similar device or wristlets are the safest and most effective means of extracting a worker.
- The other end of the retrieval line is attached to a mechanical device (e.g., winch) 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 is required for vertical type Permit Spaces more than five feet deep.

### 5.7 Non-Permit Confined Space (Non-Permit Space)

- The LSS EH&S Representative, on a case-by-case basis, can waive or reclassify the above requirements for a Permit Required Entry providing the following conditions exist. The only hazard present in the confined space is an actual or potential hazardous atmosphere. This fact is verified by the LSS EH&S Representative, the SBAR Corporate EH&S office via monitoring and inspection data, witnessed by Affected Employees and/or their authorized representative. Continuous forced air ventilation alone is sufficient to maintain an acceptable atmosphere in the confined space. Sufficient monitoring and inspection data will be collected and maintained to also document this fact. Monitoring and inspection data collected for a period of one year where no changes to the permit required space have been made will





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be used to decide waiver or reclassification decisions. If an initial entry is needed to confirm the two areas listed above, this entry will be conducted under the permit required entry procedure.

The determinations and supporting documentation necessary to support a Non-Permit Space is made available to all personnel (and their authorized representative) who enter the confined space in question.

Procedures for entry to a Non-Permit Space or reclassified Permit Required spaces:

- Where there is an entrance cover and prior to removal of the cover (e.g., below ground vault), any unsafe conditions are removed.
- Where applicable (e.g., below ground vaults), when the entrance cover is removed, barriers are erected to keep personnel, equipment, etc. from falling into the confined space.
- Prior to employee entry, the LSS EH&S Representative may require atmospheric testing of the internal atmosphere. A calibrated direct-reading instrument is used for testing, for the following conditions in the order given:
  - Oxygen content.
  - Flammable gases and vapors, and
  - Potential toxic air contaminants.

**NOTE - THE LSS EH&S REPRESENTATIVE MAY ALSO REQUIRE PERIODIC TESTING THROUGHOUT THE ENTRY.**

- No hazardous atmosphere exists in the Non-Permit Space when an employee is present.
- When continuous forced air ventilation is used for reclassified permit required spaces to a Non-Permit Space, the following applies:
  - Employees may not enter until forced ventilation has eliminated all atmospheric hazards.
  - The forced ventilation is so directed as to ventilate the immediate areas where an employee is present within the space and will continue ventilating until all employees have left the space.
  - The forced ventilation air supply is from a clean source and does not increase the hazards within the confined space.
  - The atmosphere is tested continuously throughout the entry to ensure the air remains safe.
- If a hazardous atmosphere is detected in a Non-Permit Space, or any other hazard arises, all personnel immediately evacuate. The LSS EH&S Representative or other agency safety representative is notified and, along with the affected employees/personnel and/or all



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authorized representatives, determines if the hazards can be abated or if the Non-Permit Space needs to be re-designated a Permit Space. In any event, personnel do not reenter without eliminating all hazards and do not reenter without the prior concurrence of the LSS EH&S Representative or other agency safety representative. LSS Non-Permit Spaces are also identified in the MEL.

### 5.8 Training

SBAR [\*Confined Space Training Syllabus \(CP-00-7000-05-A\)\*](#) is one method used for confined spaces training. Outside training by certified trainer's can be used for training. Training program requirements include:

- Training of all LSS personnel who enter confined spaces, their supervisors, and LSS EH&S personnel. This training is also part of newcomers' safety orientation.
- Annual refresher training is required for all LSS employees and supervisory personnel.
- Personnel performing rescue services receive separate training in addition to the basics of the confined space program. Training will be conducted on rescue equipment to be used for rescue.
- Personnel authorized to conduct atmospheric testing using a direct-reading instrument also receive specialized training for the specific direct-reading instrument used. LSS will include training on the MX6i Atmosphere Monitor.
- Personnel are retrained before entry into a Permit Space where a new hazard exists and/or there has been a change in entry procedures.
- Personnel are retrained when there is a lack of knowledge concerning confined space entry and/or there are deviations from established procedures.
- Finally, the LSS Program Manager or LSS EH&S Representative maintains the training records (paper or electronic) and this documentation is made available for review by employees and their authorized representatives.



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### 6.0 PREPARATION, REVIEW, AND APPROVAL OFFICIALS

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### 7.0 ATTACHMENT I

SBAR Launch Support Services Confined Space Master Entry List (MEL)

All the following launch tube spaces were assessed by Federal OSHA on 06 Oct 2004 and the launch equipment rooms (LER) were added by the Air Force in August 2008:

1. Building 1976; LF-04; North VAFB, CA; Launch Tube & LER; Permit Required
2. Building 1993; LF-09; North VAFB, CA; Launch Tube & LER; Permit Required
3. Building 1963; LF-10; North VAFB, CA; Launch Tube & LER; Permit Required
4. Building 1967; LF-26; North VAFB, CA; Launch Tube & LER; Permit Required