University of Illinois at Urbana-Champaign
Facilities & Services
Division of Safety and Compliance

Facilities & Services Confined Space Entry Program

Reviewed April 2014
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I. PURPOSE

Facilities & Services (F&S) at the University of Illinois at Urbana-Champaign (UIUC), through the Division of Safety and Compliance (S&C), has established this Confined Space Entry Program to protect the health of F&S employees and to assure compliance with State and Federal occupational safety and health standards, particularly the Confined Space Entry Standard of the Occupational Safety and Health Administration (OSHA) located in 29CFR 1910.146 and enforced at the UIUC by the Illinois Department of Labor. See UIUC Confined Space Entry Policy for definitions of terms.

II. POLICY

It is the policy of the F&S to provide its employees with a safe and healthful working environment. This is accomplished as far as feasible with acceptable work practices and administrative controls.

III. SCOPE

The provisions of the Confined Space Entry Program shall apply to all F&S employees who have to enter a Confined Space. Examples of Confined Spaces include, but are not limited to the following: Storage tanks, furnaces, boilers, pits, ducts, sewers, manure pits, hoppers, silos, large pipelines, vaults, dikes and open surface tanks.

IV. RESPONSIBILITIES

Entry Supervisor: The Entry Supervisor shall be assigned by the Shop Foreman and shall have the training and experience necessary to:

A. Know and understand all provisions of this Confined Space Entry Program and the UIUC Confined Space Entry Policy;
B. Know the hazards that may be present or exist during entry, including information on the routes of potential exposure (i.e. inhalation, skin contact, etc); signs or symptoms, and consequences of the exposure;
C. Verify that the appropriate entries have been made on the permit, that all tests specified on the permit have been completed, and that all equipment required on the permit has been provided and is being used;
D. Terminate operations and cancel the permit;
E. Verify that the rescue services are available and that the means of summoning them are operable;
F. Prevent unauthorized individuals from attempting to enter the permit space during entry operations;
G. Determine that entry operations remain consistent with the terms of the permit and that acceptable entry conditions are maintained; and
H. Provide all canceled permits to the Confined Space Competent Person for filing purposes.

The Entry Supervisor must be present at the entry site during the following times:

A. To sign the permit and initiate the entry;
B. At least every two hours to verify that entry operations are consistent with the terms of the permit and that acceptable entry conditions are maintained;
C. Prior to re-entry following a scheduled break lasting 30 minutes or more;
D. As requested by the attendant to deal with unauthorized individuals;
E. When a condition not listed on the permit arises (this requires close out of existing permit, re-evaluation of the space, a new permit with control/elimination measures for the new condition); and
F. During any evacuation or other emergency.

Authorized Entrants: Authorized Entrants shall be assigned by the Shop Foreman and shall have the training and experience necessary to:
A. Know and understand all provisions of this Confined Space Entry Program and the UIUC Confined Space Entry Policy;
B. Request a Confined Space Entry Permit from the Supervisor for entry and/or work to be performed in permit required confined spaces;
C. Implement the precautions identified on the Confined Space Entry Permit prior to entry.
D. Obtain the approval of the Supervisor prior to entry;
E. Know the hazards that may be present or exist during entry, including: Information on the routes of potential exposure (e.g., inhalation, skin contact, etc), signs or symptoms, and the consequences of the exposure;
F. Properly use all the required equipment;
G. Properly wear chest or full-body harnesses, and in certain circumstances, wristlets, as retrieval equipment;
H. Alert the Attendant whenever you recognize any warning sign or symptom of exposure to a dangerous situation or detect a condition that is not allowed by the permit;
I. Evacuate the permit space as quickly as possible if:
   a. An order to evacuate is given by the Attendant or the Supervisor;
   b. The Entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
   c. The Entrant detects a condition that is not allowed by the permit; or
   d. An evacuation alarm is activated; and
J. Return the confined space entry permit to the Supervisor when the work is completed.

Attendants: Attendants shall be assigned by the Shop Foreman and shall have the training and experience necessary to:
A. Know and understand all provisions of this Confined Space Entry Program and the UIUC Confined Space Entry Policy;
B. Know the hazards that may be present or exist during entry, including information on the routes of exposure (i.e. inhalation, skin contact, etc.), signs or symptoms, and consequences of the exposure;
C. Be aware of the possible behavioral effects of hazard exposure in authorized entrants;
D. Monitor and maintain the safety of the Authorized Entrants inside the confined space at all times;
E. Continuously maintain an accurate count of the Authorized Entrants in the permit space;
F. Remain outside the permit space during operations until relieved by another Attendant. If relieved by another Attendant, provide a complete status of conditions and personnel in the confined space;
G. Post the permit on or near the confined space and assure that the conditions stipulated on the permit are being met. Warn unauthorized persons to stay away from the space;
H. Know how and where to activate the rescue service requirements;
I. Communicate with Authorized Entrants as necessary to monitor the entrant status and to alert entrants of the need to evacuate the space;
J. Order the evacuation of the confined space if:
   1. A condition which is not allowed on the permit is observed;
   2. The Authorized Entrant exhibits behavior effects indicative of hazard exposure;
3. A situation outside the space is detected which could endanger those who are working inside the space;
4. An uncontrolled hazard is detected inside the space; or
5. The Attendant can not effectively and safely perform all of the required duties;
K. Render any medical aid that can be done safely;
L. An attendant should never enter a confined space in an emergency unless they are equipped and trained with suitable emergency equipment and back up personnel; and
M. Perform no duties that might interfere with the primary duty to monitor and protect the Authorized Entrants.
(Note: Passing tools to Authorized Entrants and monitoring the atmosphere of the permit space are permitted provided the Attendant does not break the plane of an opening into a confined space.)

Confined Space Competent Person: The Confined Space Competent Person for F&S is a Safety Officer who is located in the Division of Safety and Compliance. The Confined Space Competent Person shall have all of the training and experience necessary to:
A. Understand the requirements of this Confined Space Entry Program, the UIUC Confined Space Entry Policy, and applicable OSHA regulations;
B. Create, maintain, revise, implement, and enforce this Confined Space Entry Program;
C. Attend training, as needed, to enforce the requirements of this Confined Space Entry Program;
D. Identify personnel who require confined space entry training;
E. Train or arrange training for all affected personnel on the requirements of this Confined Space Entry Program;
F. Coordinate training for supervisors, attendants, and entrants in accordance with the requirements outlined in Section XII Training Requirements;
G. Ensure that the requirements of this Confined Space Entry Program are followed; and
H. Maintain a training record for all employees that have been trained in the components of this Confined Space Entry Program.

V. SPACE EVALUATION

Identification and Classification
Each space that has not been previously classified or may changes have been made to the space that could alter the classification shall be evaluated by an Entry Supervisor using the Procedures for Atmospheric Testing (Appendix A) and the Space Evaluation Form (Appendix B). Once the Entry Supervisor has completed the Space Evaluation Form, it shall be given to the Confined Space Competent Person for review and approval. The Confined Space Competent Person shall maintain a copy of the Space Evaluation Form and log the information into an electronic database. Based on the Space Evaluation Form, each space shall be classified as:
- Non-Permit Required Confined Space (see Section VI);
- Permit Required Confined Space (see Section VII);
- Alternate Entry Procedures Confined Space (see Section VIII); or
- Special Procedures Space (see Section IX).

Signage
Once a space has been evaluated and classification has been approved, a sign shall be placed on each Permit Required Confined Space and Alternate Entry Procedures Confined Space and the space shall be secured from unauthorized entry. The sign shall state "DANGER - PERMIT-REQUIRED CONFINED SPACE, DO
NOT ENTER” or similar language in the vicinity of the space or by some other effective means to prevent unauthorized entry.

Reclassification of Permit Space
A Permit Required Confined Space and Alternate Entry Procedures Confined Space may be reclassified as a Non-Permit Required Confined Space if the space:

- Possesses no actual or potential atmospheric hazards and all other hazards can be eliminated without entry in to the space; or
- Previous testing and inspection of the permit space demonstrates that all hazards within have been eliminated.
- Meets and continues to the meet the requirements identified in Section II and IV of the Non-Permit Entry Reclassification Form located in Appendix C.

Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

In order to reclassify a permit space an Entry Supervisor must fill out the Non-Permit Entry Reclassification Form and submit it to the Confined Space Competent Person for approval. The completed Non-Permit Entry Reclassification Form must be maintained on file for review by potential entrants. Signage shall be removed from the space upon approval of the Non-Permit Reclassification Form.

VI. NON-PERMIT REQUIRED CONFINED SPACES

A Non-Permit Required Confined Space is 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. Non-Permit Required Confined Spaces do not require written permits, attendants, special testing, or special training for entry. Entrants are required to verify that there are no changes in condition within the space that have created or have the potential to create a hazard.

VII. PERMIT REQUIRED CONFINED SPACES

Permit Required Confined Spaces have known or potential hazards. An Entry Permit is required for entry into Permit Required Confined Spaces. Additional requirements for entry into a Permit Required Confined Space are detailed below.

Acceptable Entry Conditions
Known or potential hazards must be eliminated or controlled prior to entry through the use of engineering, controls, administrative controls and/or personal protective equipment. Additional details of acceptable entry conditions are included on the Entry Permit located in Appendix D. Methods for adequately controlling and/or eliminating hazards follow:

- 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; 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. Additional
information can be found in the F&S Lockout/Tagout Procedures for Isolating Machines from Energy Sources.

- Flushing and Inerting – In confined spaces with atmospheres that are flammable or have atmosphere that are immediately dangerous to life and health (IDLH), elimination of the hazardous atmosphere is required. This can be done through flushing with forced air or inerting with a noncombustible gas such as nitrogen. Note that inerting may result in an oxygen-deficient atmosphere.

- Verification Monitoring – Monitoring of the atmosphere must be conducted prior to entry. Constituents must be monitored in accordance with Procedures for Atmospheric Testing located in Appendix A. Acceptable constituent levels are listed on the Entry Permit (Appendix D). Periodic air monitoring throughout entry is required, although continuous monitoring is recommended. Monitoring results are to be recorded on the Entry Permit at least every hour or more often if conditions warrant by either the Attendant or Entry Supervisor and verified by the Entry Supervisor at least every two hours. Continuous monitoring is required when isolation of the space is infeasible. See for Atmospheric Testing located in Appendix A for more details.

Permitting System
Confined Space Entry Permits (Appendix D) must be filled out prior to each entry into a permit required confined space. A new permit is required for each new work shift.

Preparation
Prior to entry into a permit required confined space, an Entry Permit must be completely filled out, signed by an authorized Entry Supervisor, and posted at the entry to the confined space.

Issue/Use
Work conducted in a permit required confined space shall not deviate from the requirements identified on the Entry Permit including work activities to be conducted, time to conduct work, and equipment to be used.

Concluding Operations/Canceling Permits
Once entry operations are complete all entrants must evacuate the space, the space must be closed/sealed up to pre-entry conditions, and the Entry Supervisor must cancel the permit. Entry must not exceed the expiration date and time indicated on the Entry Permit. Cancellation of the Entry Permit by the Entry Supervisor is also required when activities or situations arise that are not allowed by the Entry Permit.

The canceled Entry Permit shall be given to the Confined Space Competent Person for review. Canceled Entry Permits shall be maintained by the Confined Space Competent Person for a minimum of one year.

Disclosure
Each Authorized Entrant and/or their authorized representative must have the opportunity to observe the completed permit, pre-entry monitoring or testing of the permit space prior to entry, and subsequent monitoring or testing of the permit space. The permit space must also be reevaluated in the presence of the Authorized Entrant or their authorized representative upon their request.

Coordination with Contractors
Contractors are responsible for identifying, evaluating, and classifying spaces that their employees will enter. All available information will be provided by F&S to contractors about spaces to be entered. Contractors shall not reclassify a permit space to non-permit space without a written justification and concurrence by S&C or

http://safetyandcompliance.fs.illinois.edu
217-265-9828

Last updated by: J. Neighbors  Page 7 of 10  Last Updated: April 2014
applicable departmental safety personnel. Contractors must have and implement their own Confined Space Program and provide their own equipment. Contractors must debrief their F&S contact about hazards identified during their evaluations, methods of control and/or elimination of hazards, and any issues encountered during entry.

If F&S personnel will be working in the same space as contractor personnel, then each group will conduct work in accordance with their own Confined Space Entry Programs. F&S and the contractor must each provide an Entry Supervisor.

A single Attendant from either group is acceptable as long as both Entry Supervisors agree on the duties of the Attendant and proper communication is maintained between the Attendant and Entrants. This information must be documented on both Entry Permits. Only one group will need to conduct pre-entry air monitoring and other hazard control/elimination activities as long as both Entry Supervisors agree with the results and that the requirements of both Entry Permits are satisfied.

**Barriers**

Barriers must be used during permit required confined space entry to prevent unauthorized entrance and protect personnel participating in the entry from external hazards such as overhead hazards and vehicular traffic.

**Attendants**

At least one Attendant must be present for each permit required confined space entry to verify that conditions in the permit space are continuously acceptable for entry throughout the duration of the authorized entry. The Attendant can monitor more than one ingress/egress point as long as they are able to adequately perform their duties. Monitoring of multiple spaces by a single attendant is prohibited.

**Entry Supervisor**

Each entry requires an Entry Supervisor who is responsible for determining hazards, hazard mitigation actions, signing the permit to initiate the entry, and canceling the entry. The Entry Supervisor may also serve as either an entrant or attendant.

**VIII. ALTERNATE ENTRY PROCEDURES**

Alternate Procedures may be used for entering a confined space if it can be demonstrated that the only hazard faced by employees entering the space is an actual or potential atmospheric hazard that can be controlled using continuous forced air ventilation.

Once a space has been identified and approved as an Alternate Entry Procedures space using the Space Evaluation Form (Appendix B), the Alternate Entry Procedures form (Appendix E) shall be utilized to document the appropriate mitigating measures that must be taken to eliminate non-atmospheric hazards. Pre-entry and periodic air monitoring must be conducted and documented during each Alternate Entry Procedures entry and the F&S Safety Officer must verify that the space still meets all of the conditions for an Alternate Entry Procedures space.

If hazards are introduced into the space as part of the entry, the space shall be evaluated considering these hazards. If the introduced hazards can not be controlled using continuous forced air ventilation the space shall
be considered a permit required confined space. See Section VIII for requirement for PERMIT REQUIRED
CONFINED SPACES.

Once non-atmospheric hazards have been eliminated and atmospheric hazards are controlled, Alternate Entry
Procedure spaces do not require the use of the Entry Permit or Attendant. Training is still required for
personnel participating in entry into Alternate Entry Procedure spaces.

IX. SPECIAL PROCEDURES

Special Procedures spaces are spaces that are unique and do not necessarily fall into one of the other three
categories of confined spaces and following typical procedures for Permit Required Confined Spaces or
Alternate Entry Procedures would be more hazardous to the Entrants. Special Procedures will be written on an
as needed basis, providing detailed information for safe entry into a specific space.

Sewers contain unique hazards and are among the permit spaces that Special Procedures will need to be written.
Appendix F Special Considerations for Sewer Entry contains information that should be reviewed and used in
the production of the Special Procedure.

X. EQUIPMENT

Equipment required during a permitted entry must be listed on the permit and may include:

A. Atmospheric testing and monitoring equipment;
B. Forced air ventilation equipment;
C. Communications equipment;
D. Lighting equipment needed to enable employees to work safely within the permit space and exit said
   space quickly in the event of an emergency;
E. Barriers and shields necessary to prevent pedestrian and vehicular access;
F. Ladders;
G. Rescue equipment such as fall arrest systems and retrieval devices as required in Section XI. RESCUE
   AND EMERGENCY PROCEDURES; and
H. Miscellaneous personal protective equipment (PPE) such as eye protection, foot protection, head
   protection, etc. as necessary to work safely within the confined space.

Personnel must be trained on the proper use of the equipment and equipment must be inspected prior to each
use. Atmospheric Monitoring equipment can be checked out from the Electricians Shop. If the atmosphere
needs to be tested for constituents other than carbon monoxide, oxygen, hydrogen sulfide, and lower
flammability limit please contact S&C at 265-9828 for assistance. The rest of the equipment can be checked out
from the Tool Room. Most PPE can be obtained from Campus Stores or ordered through one of the F&S
preferred vendors for safety equipment and supplies.

XI. RESCUE AND EMERGENCY PROCEDURES

The UIUC Emergency Rescue Services are the Champaign and Urbana Fire Departments depending upon your
location on campus. The appropriate fire department must be contacted prior to entry into a permit space. The
Urbana Fire Department non-emergency phone is 384-3420 and the Champaign Fire Department non-
emergency phone is 403-7200.
Emergency Evacuation Procedures
In the event of an emergency, the Attendant will notify the Entrants of the need to evacuate. The Attendant will also notify the Entry Supervisor and, if necessary, the UIUC Emergency Response Service by calling 911. The Entry Supervisor will cancel the entry permit. If re-entry is to be performed, a new permit must be used.

See the Section below on Rescue Procedures if Entrants are unable to evacuate the space on their own.

Rescue Procedures
If a rescue is required:
- The Attendant must immediately contact the UIUC Emergency Response Service by calling 911;
- The Attendant will attempt to evacuate the Entrant(s) using non-entry retrieval methods;
- The Attendant will provide the UIUC Emergency Response Service with the number and location of the Entrants in the space, the reason emergency rescue is required, the hazards associated with the space, and provide them with the permit to review; and
- All personnel will follow the instructions of the UIUC Emergency Response Service commander upon their arrival.

XII. TRAINING REQUIREMENTS
All F&S personnel who are involved in entry into Permit Required Confined Spaces, Alternate Entry Procedures spaces, and Special Procedure spaces must attend confined space training provided by S&C. F&S personnel who will act as an Entry Supervisor must attend additional S&C-approved confined space training. Personnel entering Non-Permit Required Confined Spaces are not required to attend training.

Training Frequency
F&S personnel are required to attend training prior to their first work assignment associated with a confined space. Additional training is required when there is a change in assignment, operation, procedures, or the Entry Supervisor and/or Confined Space Competent Person determine additional training is required for safe operations.

Documentation
F&S personnel attending the confined space training provided by S&C will be required to sign-in with their name, signature, and badge number. Personnel attending the additional training through an outside consultant must provide a copy of the attendance sheet or completion certificate to S&C. Sign-in sheets and certificates will be scanned for electronic filing. Training information will be stored in the S&C training database.

XIII. CONFINED SPACE PROGRAM REVIEW
The Confined Space Competent Person shall review the F&S Confined Space Program at least annually and revise as needed. The review shall include canceled permits, this Program document, and input from F&S personnel involved in confined space entry. Additional reviews may be warranted based on unauthorized entries, violations of Entry Permit requirements, failure to identify and isolate/eliminate hazards prior to entry, and complaints that the requirements of this Program document including attached forms and procedures are inadequate.
Appendix A
Procedures for Atmospheric Testing

Policy Statement
The following procedures were developed to protect Facilities & Services (F&S) personnel from potential exposure to atmospheric hazardous materials during entry into confined spaces.

Purpose
Atmospheric testing is required to evaluate the hazards of a permit space and verify that acceptable entry conditions for entry into that space exist.

Evaluation Testing
Evaluation testing shall be conducted as part of the work planning process for entry into a confined space. The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space.

Verification Testing
Verification testing shall be conducted prior to entry and periodically throughout the entry (continuous monitoring is recommended). The atmosphere of a permit space which may contain a hazardous atmosphere shall be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) shall be recorded on the permit in the space provided.

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

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

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

Order of Testing
Testing shall be done in the following order:
- Oxygen testing is performed first because most combustible gas meters are oxygen dependent and will not provide reliable readings in an oxygen deficient atmosphere;
- Combustible gases are tested next because the threat of fire or explosion is both more immediate and more life threatening, in most cases, than exposure to toxic gases and vapors; and
- Tests for toxic gases and vapors are performed last.
**Confined Space Evaluation Form**

**Section I**

<table>
<thead>
<tr>
<th>Space Description:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Location:</td>
<td></td>
</tr>
<tr>
<td>Job #:</td>
<td></td>
</tr>
<tr>
<td>W.O. #:</td>
<td></td>
</tr>
</tbody>
</table>

**Confined Space Identification:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the space large enough and shaped so an employee can enter and work?</td>
<td></td>
</tr>
<tr>
<td>2. Does the space have a limited or restricted means of ingress or egress?</td>
<td></td>
</tr>
<tr>
<td>3. Is the space NOT designed for continuous employee occupancy?</td>
<td></td>
</tr>
</tbody>
</table>

If ANY answer in Section II is “NO” proceed to Section IV and mark the “Not A Confined Space” box, sign as the evaluator, and give this form to the Confined Space Competent Person. If ALL answers in Section II are “YES”, proceed to Section III.

**Confined Space Evaluation:**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the space contain, or have the potential to contain either through processes inherently within the space or introduced through work activities during entry (e.g., hot work), a hazardous atmosphere? (e.g., oxygen deficiency, flammable vapors or dusts, toxic gases or dusts, volatile chemicals, or other hazardous substance).</td>
<td></td>
</tr>
<tr>
<td>If yes, Specify known or potential hazards:</td>
<td></td>
</tr>
<tr>
<td>2. Does the space contain a material with the potential for engulfment of a worker? (e.g., grain, sand, or water)</td>
<td></td>
</tr>
<tr>
<td>If yes, Specify known or potential hazards:</td>
<td></td>
</tr>
<tr>
<td>3. Does the space have an internal shape such that a worker could be trapped or suffocated by inwardly converging walls, floor, or ceiling?</td>
<td></td>
</tr>
<tr>
<td>If yes, Specify known or potential hazards:</td>
<td></td>
</tr>
<tr>
<td>4. Does the space contain, or have the potential to contain, any other recognized safety or health hazards? (e.g., mechanical, exposed electrical wires, energized equipment, gas or chemical lines, elevated work, temperature extremes, noise, biological, radioactivity)</td>
<td></td>
</tr>
<tr>
<td>If yes, Specify known or potential hazards:</td>
<td></td>
</tr>
<tr>
<td>5. Is this space represented as a Special Procedures through use of Standard Operating Procedures for entry?</td>
<td></td>
</tr>
</tbody>
</table>

**Confined Space Classification:**

<table>
<thead>
<tr>
<th>Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If ANY answers in Section II are “NO”, then this is Not A Confined Space.</td>
</tr>
<tr>
<td>2. If ALL answers in Section III are “NO”, then this is a Non-Permit Required Confined Space.</td>
</tr>
<tr>
<td>3. If ONLY question 1 in Section III is “YES” and the atmospheric hazard CAN be controlled through use of forced air ventilation, then this is an Alternate Entry Procedures space.</td>
</tr>
<tr>
<td>4. If question 1 in Section III is “YES” and the atmospheric hazard CAN be controlled through use of forced air ventilation and if any of questions 2, 3, or 4 are “YES” and CAN be eliminated, then this is an Alternate Entry Procedures space.</td>
</tr>
<tr>
<td>5. If question 1 in Section III is “YES” but the atmospheric hazard CAN NOT be controlled through use of forced air ventilation or if any of questions 2, 3, or 4 are “YES” but CAN NOT be eliminated, then this is a Permit Required Confined Space.</td>
</tr>
<tr>
<td>6. If question 5 in Section III is “YES”, then this is a Special Procedures space.</td>
</tr>
</tbody>
</table>

**Certification:**

I certify that I have evaluated this space including all known and potential hazards, and have classified it accordingly based on my evaluation.

Entry Supervisor:

(Signature)  (Print Name)  (Phone)  (Date)

I certify that I have reviewed this Confined Space Evaluation Form and have verified that this space has been properly classified.

F&S Safety Officer:

(Signature)  (Print Name)  (Phone)  (Date)
## Appendix C
Non-Permit Entry Reclassification Form

### Section I

<table>
<thead>
<tr>
<th>Type of Space:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Location:</td>
<td></td>
</tr>
<tr>
<td>Job #:</td>
<td>W.O. #:</td>
</tr>
</tbody>
</table>

**Known/Potential Hazards:**

<table>
<thead>
<tr>
<th>Original Hazards:</th>
<th>Steps Taken to Eliminate Hazards:</th>
<th>Elimination Steps Performed By: (Name)</th>
</tr>
</thead>
</table>

### Section II

**Original Hazards:**

- Steps Taken to Eliminate Hazards:
- Elimination Steps Performed By: (Name)

**Notes:**

1. All hazards must be ELIMINATED. CONTROL of the hazards is not an acceptable reason for reclassification.
2. Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards. If a hazardous atmosphere is the only known or potential hazard and can be controlled through continuous forced air ventilation, see the Alternate Entry Procedures Form.
3. Introduction of a hazard into the space (e.g., paint thinner, hot work, etc.) requires the use of the full permit process.

### Time Tests Are Taken

"tests are to be taken in the following order"

<table>
<thead>
<tr>
<th>Tests to be Taken</th>
<th>Limit</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Oxygen</td>
<td>19.5-23.5 %</td>
<td></td>
</tr>
<tr>
<td>% of LEL</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Others (List):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Monitoring Instrument Name:**

**Serial #:**

### Section III

**Date of Calibration:**

**Notes:**

1. Continuous / periodic tests shall be conducted before beginning a job. For questions pertaining to test requirements, contact your supervisor.
2. Cal. Date = Date of last documented calibration.

**I certify that I have verified the elimination of all known and potential hazards associated with this space.**

**Entry Supervisor:**

(Signature) (Print Name) (Phone) (Date)

**F&S Safety Officer:**

(Signature) (Print Name) (Phone) (Date)
General Notes:
1. Introduction of a hazard into the space (e.g., paint thinner, hot work, etc.) requires the use of the full permit process.
2. This space must be re-evaluated if a change in the use or configuration of a non-permit space could increase the hazards to entrants. Based on the re-evaluation, reclassification as permit-required may be necessary.
3. If entry into the space must be performed to eliminate hazards then it must be conducted using the full permit process.
4. Once this reclassification form has been completed and approved by the F&S Safety Officer, it must remain on file and available to employees entering the space.
5. Prior to each entry into a non-permit space, an Entry Supervisor must verify that the space still meets all of the conditions for a non-permit space. This includes verifying that the steps taken in Section II continue to eliminate hazards from the space and that testing of the atmosphere confirms no atmospheric hazards are present.
6. Once the space has been approved for reclassification as a non-permit required space, remove signage.
## Section I

<table>
<thead>
<tr>
<th>Type of Permit</th>
<th>Required Space:</th>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Specific Location:</th>
<th>Start Time:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Job #:</th>
<th>W.O. #:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Originator:</th>
<th>Phone #:</th>
</tr>
</thead>
</table>

### Purpose of Entry

<table>
<thead>
<tr>
<th>Known/Potential Hazards:</th>
</tr>
</thead>
</table>

## Section II

### Safety Requirements

<table>
<thead>
<tr>
<th>Yes</th>
<th>N/A</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non-Entry Rescue - Body Harness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Retrieval Unit (more than 5ft)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lifelines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emergency Communications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fire Extinguisher</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protective Clothing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Respiratory Protection</td>
</tr>
</tbody>
</table>

### Lock Out – to “Zero Energy State”

### Non-Entry Rescue - Body Harness

### Lines Broken – Capped or Blanked – for isolation

### Purge – Flush & Vent - Lifelines

### Lighting (adequate or low voltage) - Emergency Communications

### Ventilation Provided - Fire Extinguisher

### Secure Area - PPE

### Special Procedures - Other PPE

### Other:

### List Required Equipment (be specific):

### List Required PPE (be specific):

### Welding & Cutting (Flame/Spark Producing): □ Yes □ No

### Radiation: □ Yes □ No

## Section III

### Air Monitoring Information

<table>
<thead>
<tr>
<th>Monitoring Instrument Name:</th>
<th>Serial #:</th>
</tr>
</thead>
</table>

### Date of Calibration:

| Note: Continuous / periodic tests shall be conducted and recorded on the accompanying Air Monitoring Log before beginning a job, after scheduled breaks, and at least every hour or more often as conditions warrant. Continuous monitoring is required if isolation of the space is infeasible. For questions pertaining to test requirements, contact your supervisor. |

## Section IV

### Authorized Entrant(s):

<table>
<thead>
<tr>
<th>Emergency Procedure (Brief Explanation):</th>
</tr>
</thead>
</table>

### Safety Attendant(s):

<table>
<thead>
<tr>
<th>What will be the means to summon rescue?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Has pre-entry meeting been held?</th>
<th>□ Yes □ No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Emergency communication operable?</th>
<th>□ Yes □ No</th>
</tr>
</thead>
</table>

### Emergency: 911

### Non-emergency CFD: 403-7200

### UFD: 384-2420

### Note: Use the Permit Space Entry Log Sheet to maintain an accurate account of Authorized Entrants within the space. See Section IV, note 5 on reverse side for additional details.

## Section V

### Originator:

<table>
<thead>
<tr>
<th>(Signature)</th>
<th>(Print Name)</th>
<th>(Phone)</th>
<th>(Date)</th>
</tr>
</thead>
</table>

### Entry Supervisor:

<table>
<thead>
<tr>
<th>(Signature)</th>
<th>(Print Name)</th>
<th>(Phone)</th>
<th>(Date)</th>
</tr>
</thead>
</table>

### Annual Review By:

<table>
<thead>
<tr>
<th>(Signature)</th>
<th>(Print Name)</th>
<th>(Phone)</th>
<th>(Date)</th>
</tr>
</thead>
</table>
Appendix D
Entry Permit

GENERAL
1. Verify that all confined space personnel have received proper training and authorization to perform duties assigned.
2. An entry permit must be issued prior to entry by the authorized entrant(s) for any scheduled work activity into any permit required Confined Space. All people involved in the Confined Space Entry will participate in a safety review of the completed permit. Each individual is responsible for following the requirements of this permit.
3. The permit or a copy of the permit shall be securely fastened at the point of entry, or if this is impractical, by any other equally effective means.
4. All permits are to be returned to the supervisor/manager approving the permit at the end of the shift for which the permit was issued. Expired permits must be returned to the F&S Safety Officer. Permits must be kept on file for one year.

SECTION I
The permit covers all work to be done by all the various departments on the job for which it was issued.
1. Type of Permit-Required Space: identify by name (e.g., vault, tank, etc.)
2. Specific Location: designate a specific area of campus (e.g. Area, bldg., floor, room, etc.)
3. Purpose of Entry: specific type of work to be performed (e.g. clean out, weld, burn, repair, etc.)
4. Product last in space: use common names (e.g. sulfuric acid, caustic soda, sewer water, etc.)
5. Permit duration: OSHA defines one shift as an 8 hour period. Permits must be reviewed and reinstated at shift changes.

SECTION II
1. Fill out the special requirements sections of the permit by reviewing the SOP for that permit-required Confined Space.
2. Additional information on Personal Protective Equipment and fire protection can be found by consulting the appropriate MSDS. The attendant shall have immediately available the same Personal Protective Equipment as the person entering the Confined Space.
3. The electrical equipment shall be checked for proper voltage and operations before entry. All portable power equipment must use Ground Fault protection and the Ground Fault Interrupter shall be located outside the Confined Space.
4. Seek the work supervisor’s help when written entry approval cannot be made in accordance with Safe Entry Procedures.
5. Indicate if other special procedures are required. Maintain other required procedures/permits with the entry permit.

SECTION III
1. Record instrument name, serial #, and last calibration date on the permit.
2. Record test results on the accompanying log sheet.
3. Take tests as necessary to verify a suitable atmosphere with 1 hour minimum sampling/recording intervals. Continuous atmospheric monitoring is recommended with periodic recording at least every hour. Continuous monitoring required if isolation of the space is infeasible.
4. Retesting is required after lunch, scheduled breaks, and at least every hour or more often as conditions warrant.

SECTION IV
1. An attendant must be appointed to watch the authorized entrant(s) entering the Confined Space. The attendant will have no responsibility except watching the person in the Confined Space. The attendant must have communication equipment to quickly notify rescue personnel of an emergency (eg. telephone, radio).
2. The person(s) entering the Confined Space shall, when required, be attached by a lifeline (with a minimum breaking strength of 3600 lbs.) controlled by the attendant at all times. The Confined Space entrant(s) must exit without question when instructed by the attendant to do so. Any vertical entry more than 5 feet deep must have a mechanical retrieval system.
3. A rescue plan and equipment must be agreed to before Confined Space entry.
4. Specify type of communication between attendant and entrant(s) (e.g. radio, verbal, tug on lifeline, etc.).
5. Entrants shall document each time they enter and exit the permit space on the Permit Space Entry Log. The Attendant(s) shall maintain the Permit Space Entry Log as a means to meet their responsibility to maintain an accurate account of entrants in the permit space.

SECTION V
1. All permits must be approved by the person in charge of the work crew entering the Confined Space, or in the supervisor’s/manager’s absence, the next higher authority.
2. Complete signatures must be used, not just initials.
3. F&S Safety Officer will review expired permits on an annual basis.

### Air Monitoring Log

<table>
<thead>
<tr>
<th>Time</th>
<th>% Oxygen</th>
<th>% LEL</th>
<th>CO</th>
<th>H2S</th>
<th>Other:</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit</td>
<td>19.5-23.5%</td>
<td>10%</td>
<td>25 ppm</td>
<td>10 ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Date:  |

---
### Appendix D

**Entry Permit**

<table>
<thead>
<tr>
<th>Date:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Permit: Required Space:</td>
<td></td>
</tr>
<tr>
<td>Specific Location:</td>
<td></td>
</tr>
<tr>
<td>Job #: W.O. #:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authorized Entrant Name:</th>
<th>Badge/UIN #:</th>
<th>Time In</th>
<th>Time Out</th>
<th>Time In</th>
<th>Time Out</th>
<th>Time In</th>
<th>Time Out</th>
</tr>
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<tbody>
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</tbody>
</table>
### Appendix E
Alternate Entry Procedures

<table>
<thead>
<tr>
<th>Section I</th>
<th>Type of Space:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Location:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job #:</td>
<td>W.O. #:</td>
<td></td>
</tr>
<tr>
<td>Product Last in Space:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section II</th>
<th>Hazard Evaluation:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are there known or potential Atmospheric Hazards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Can the Atmospheric Hazards be controlled by forced air ventilation?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. If the forced air ventilation were to fail, would the space become Immediately Dangerous to Life or Health (IDLH)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are there other known hazards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Can the other known hazards be eliminated without entrance into the space?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** If the answer to questions 2 OR 5 is “NO”, OR the answer to question 3 is “YES”, then the full Entry Permit process must be used.

<table>
<thead>
<tr>
<th>Section III</th>
<th>Original Hazards:</th>
<th>Steps Taken to Eliminate Hazards:</th>
<th>Elimination Steps Performed By:</th>
<th>(Name)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Section IV</th>
<th>Time Tests Are Taken</th>
<th>“tests are to be taken in the following order”</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tests to be Taken</th>
<th>Limit</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Oxygen</td>
<td>19.5-23.5 %</td>
<td></td>
</tr>
<tr>
<td>% of LEL</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>10 ppm</td>
<td></td>
</tr>
<tr>
<td>Others (List):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section IV</th>
<th>Monitoring Instrument Name:</th>
<th>Serial #:</th>
</tr>
</thead>
</table>

| Date of Calibration: | |
|----------------------| |

**Notes:**
1. Initial air monitoring tests shall be completed before entry. Periodic air monitoring throughout entry is required. Continuous air monitoring is recommended. For questions pertaining to test requirements, contact your supervisor.
2. Cal. Date = Date of last documented calibration.

<table>
<thead>
<tr>
<th>Section V</th>
<th>I certify that I have verified that all atmospheric hazards are being controlled by continuous forced air ventilation and all other known and potential hazards associated with this space have been eliminated.</th>
<th>Entry Supervisor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Signature)</td>
<td>(Print Name)</td>
<td>(Phone)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section V</th>
<th>I certify that I have reviewed this alternate entry procedures form and have verified that all atmospheric hazards are being controlled by continuous forced air ventilation and all other known and potential hazards associated with this space have been eliminated. The use of alternate entry procedures for the confined space identified in Section I is approved.</th>
<th>F&amp;S Safety Officer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Signature)</td>
<td>(Print Name)</td>
<td>(Phone)</td>
</tr>
</tbody>
</table>
General Notes:
1. Introduction of a hazard into the space (e.g., paint thinner, hot work, etc.) may require the use of the full Entry Permit process.
2. This space must be re-evaluated if a change in the use or configuration of the Alternate Entry Procedures space could increase the hazards to entrants. Based on the re-evaluation, use of the full Entry Permit process may be necessary.
3. Any conditions making it unsafe to remove or open an entrance cover shall be eliminated before the cover is removed.
4. When an entrance cover is removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary means which prevent people and tools from accidentally falling into the confined space.
5. Once this Alternate Entry Procedures form has been completed and approved by the F&S Safety Officer, it must remain on file and available to employees entering the space.
6. Prior to each entry into an Alternate Entry Procedures space, the F&S Safety Officer must verify that the space still meets all of the conditions for an Alternate Entry Procedures space. This includes the verification that the steps taken in Section III continue to eliminate hazards from the space and that testing of the atmosphere confirms that all atmospheric hazards are controlled by continuous forced air ventilation.
7. An Attendant is not required for Alternate Entry Procedure spaces.
Appendix F
Special Consideration for Sewer Entry

Sewer entry differs in three vital respects from other permit entries; first, there rarely exists any way to completely isolate the space (a section of a continuous system) to be entered; second, because isolation is not complete, the atmosphere may suddenly and unpredictably become lethally hazardous (toxic, flammable or explosive) from causes beyond the control of the entrant or employer, and third, experienced sewer workers are especially knowledgeable in entry and work in their permit spaces because of their frequent entries. Unlike other employments where permit space entry is a rare and exceptional event, sewer workers’ usual work environment is a permit space.

(1) Adherence to procedure. The employer should designate as entrants only employees who are thoroughly trained in the employer's sewer entry procedures and who demonstrate that they follow these entry procedures exactly as prescribed when performing sewer entries.

(2) Atmospheric monitoring. Entrants should be trained in the use of, and be equipped with, atmospheric monitoring equipment which sounds an audible alarm, in addition to its visual readout, whenever one of the following conditions are encountered: Oxygen concentration less than 19.5 percent; flammable gas or vapor at 10 percent or more of the lower flammable limit (LFL); or hydrogen sulfide or carbon monoxide at or above 10 ppm or 35 ppm, respectively, measured as an 8-hour time-weighted average. Atmospheric monitoring equipment needs to be calibrated according to the manufacturer's instructions. The oxygen sensor/broad range sensor is best suited for initial use in situations where the actual or potential contaminants have not been identified, because broad range sensors, unlike substance-specific sensors, enable employers to obtain an overall reading of the hydrocarbons (flammables) present in the space. However, such sensors only indicate that a hazardous threshold of a class of chemicals has been exceeded. They do not measure the levels of contamination of specific substances. Therefore, substance-specific devices, which measure the actual levels of specific substances, are best suited for use where actual and potential contaminants have been identified. The measurements obtained with substance-specific devices are of vital importance to the employer when decisions are made concerning the measures necessary to protect entrants (such as ventilation or personal protective equipment) and the setting and attainment of appropriate entry conditions. However, the sewer environment may suddenly and unpredictably change, and the substance-specific devices may not detect the potentially lethal atmospheric hazards which may enter the sewer environment.

Although OSHA considers the information and guidance provided above to be appropriate and useful in most sewer entry situations, the Agency emphasizes that each employer must consider the unique circumstances, including the predictability of the atmosphere, of the sewer permit spaces in the employer's workplace in preparing for entry. Only the employer can decide, based upon his or her knowledge of, and experience with permit spaces in sewer systems, what the best type of testing instrument may be for any specific entry operation.

The selected testing instrument should be carried and used by the entrant in sewer line work to monitor the atmosphere in the entrant's environment, and in advance of the entrant's direction of movement, to warn the entrant of any deterioration in atmospheric conditions. Where several entrants are working together in the same immediate location, one instrument, used by the lead entrant, is acceptable.

(3) Surge flow and flooding. Sewer crews should develop and maintain liaison, to the extent possible, with the local weather bureau and fire and emergency services in their area so that sewer work may be delayed or interrupted and entrants withdrawn whenever sewer lines might be suddenly flooded by rain or fire suppression activities, or whenever flammable or other hazardous materials are released into sewers during emergencies by industrial or transportation accidents.
(4) Special Equipment. Entry into large bore sewers may require the use of special equipment. Such equipment might include such items as atmosphere monitoring devices with automatic audible alarms, escape self-contained breathing apparatus (ESCBA) with at least 10 minute air supply (or other NIOSH approved self-rescuer), and waterproof flashlights, and may also include boats and rafts, radios and rope stand-offs for pulling around bends and corners as needed.