Confined Space Entry Program

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# UNH Confined Space Entry Program

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**I. POLICY**

The University of New Hampshire (UNH) contains numerous work areas that require a worker to enter a space that could present a physical or environmental hazard to the health and safety of affected personnel. Wherever entry into these spaces is required, entry will be performed in accordance with all federal, state, local regulations, and Best Management Practices. UNH employees and contractors shall not enter confined spaces without reviewing and following the UNH Confined Space Entry Program. The following Confined Space Entry program is in place at UNH to ensure safe work practices in hazardous confined spaces.

UNH employees and contractors shall make every effort to avoid entry into permit-required confined spaces. Where entry is unavoidable, confined space entry supervisors shall strive to either eliminate all serious recognized hazards prior to entering the space, or determine if all serious recognized hazards can be controlled to acceptable levels through the use of controls such as forced air ventilation. Entry into permit-required confined spaces under full permit procedures shall be considered only after all other options for accomplishing the task have been exhausted.

**II. SCOPE AND APPLICATION**

This program document contains the requirements for UNH employees to enter confined spaces. These requirements apply to entry into spaces owned or leased by UNH and spaces owned by another entity (including, but not limited to, the Town of Durham, NH) where UNH employees are required to enter. The requirements for contractors are outlined in Section IX of this document.

**III. DEFINITIONS AND ACRONYMS**

**Affected Employees:** For the purposes of this program document an affected employee is one who may encounter confined spaces and permit-required confined spaces. Affected employees are permitted to enter non permit required confined spaces if the conditions in Section V are met.

**Confined Space:** A space that meets all of the following conditions:

- The space is large enough and so configured that an employee can bodily enter and perform assigned work;
- Has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, and pits); and
- Is not designed for continuous employee occupancy.

**Confined Space Attendant:** An individual stationed outside a permit-required confined space who monitors the confined space entrants and who performs all attendant's duties assigned in this program document.
**Confined Space Entrant:** An individual who will enter a permit-required confined space to perform work.

**Confined Space Supervisor:** The individual 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 described in this program document.

**Contract Coordinator:** The UNH Project Manager or UNH Contract Manager.

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

**Non-Permit Confined Space:** 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.

**LEL:** Abbreviation for Lower Explosive Limit. This is the minimum concentration in air of a gas or vapor that can be ignited by a spark or flame.

**LFL:** Abbreviation for Lower Flammable Limit. For the purposes of this program, “LEL” and “LFL” are equivalent.

**OEHS:** Abbreviation for the Office of Environmental Health and Safety.

**OEL:** Abbreviation for Occupational Exposure Limit. This is a generic term referring to OSHA Permissible Exposure Limits, ACGIH Threshold Limit Values, and/or NIOSH recommended exposure limits as applicable.

**OSHA:** Abbreviation for the Occupational Safety and Health Administration.

**Permit Required Confined 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;
- 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
- Contains any other recognized serious safety or health hazard.

**PPE:** Abbreviation for Personal Protective Equipment.
IV. RESPONSIBILITIES

A. Confined Space Entrants

- Comply with the requirements listed in this program document;
- Know and understand the hazards of the confined space;
- Know and understand the hazards introduced by work procedures in the space;
- Properly use equipment required for safe entry, such as atmospheric air monitors;
- Stay in constant contact with the Attendant during permit-required confined space entry;
- Evacuate the space immediately when hazardous or prohibited conditions arise or when ordered to do so by an Attendant or Entry Supervisor; and
- Attend initial and refresher training as outlined in this program.

B. Confined Space Entry Attendants

- Comply with the requirements listed in this program;
- Know and understand the hazards of the confined space to include the modes, signs, behavioral effects, and consequences of potential overexposures;
- Know and understand the hazards introduced by work procedures in the space;
- Ensure appropriate safety equipment, personal protective equipment, and air monitoring devices are used as specified on the Confined Space Entry Permit;
- Conduct and/or oversee air monitoring in the space as directed by the Entry Supervisor;
- Ensure any necessary procedures relative to the control of hazardous energy (lockout/tagout) are completed prior to entry;
- Remain in constant contact with Entrants and maintains an accurate count of those Entrants inside a space;
- Remain just outside the space until relieved by another trained Attendant;
- Monitors activities inside and outside a space to determine if it is safe for Entrants to remain inside the space;
- Issue an evacuation to Entrants when hazardous conditions arise during entry;
- In the event of an emergency call for rescue services;
- In the event of an emergency perform non-entry rescue; and
- Attend initial and refresher training as outlined in this program.

C. Confined Space Entry Supervisors

- Comply with the requirements listed in this program;
- Perform pre-entry planning and evaluation/classification of space prior to entry;
- Know and understand the hazards of the confined space to include the modes, signs, behavioral effects, and consequences of potential overexposures;
- Ensure all Entrants and Attendants have received training as outlined in this program;
- Specify appropriate safety equipment, personal protective equipment, and air monitoring devices;
- Perform any pre-use "bump testing,” field calibration, or other verification procedures for air monitoring equipment as specified in this program and the equipment manual;
• Specify procedures relative to the control of hazardous energy (lockout/tagout);
• Verify that procedures relative to the control of hazardous energy (lockout/tagout) and hot work are completed prior to entry and documented on the entry permit;
• Review entry plan with rescue team prior to entry if requested;
• Authorize and terminate permit-required confined space entries, certify confined space reclassification, and/or certify alternate entry procedures;
• Complete the confined space entry permit or certificate form as required; and
• Ensure completed permits and certificates are properly filed in accordance with Section XI of this program.

D. All Participating Departments

• Provide appropriate safety equipment necessary for confined space entry, including but not limited to mechanical retrieval devices, fall arrest equipment, other PPE, ventilation equipment, ladders, and/or air monitoring equipment;
• Ensure department-owned air monitoring equipment is kept in good repair, maintained in calibration, and available for use;
• Designate staff members who will serve as Entry Supervisors, Attendants, and/or Entrants;
• Ensure employees comply with the requirements of this program;
• Ensure employees receive appropriate training;
• Assist OEHS as necessary with assessment and evaluation of confined spaces;
• Follow up on entry permit investigations initiated by OEHS and respond in writing within 3 weeks with corrective action plans.

E. Facilities Project Management

In addition to the responsibilities for participating departments and those that Facilities Project Management (FPM) may have for staff members who enter confined spaces, FPM has the following responsibilities:

• Post confined space warning signs at the entry to all permit-required confined spaces (except manholes) that have been newly created as a result of construction or renovation activities, and take measures to prevent unauthorized entry; and
• Make every reasonable attempt to avoid the creation of new confined spaces during construction and renovation activities. Wherever feasible during renovations, incorporate measures to eliminate existing spaces or recognized hazards within spaces.

F. Facility Operations Department

In addition to the responsibilities for participating departments and those that Facility Operations may have for staff members who enter confined spaces, the Facilities Operations Department has the following responsibilities:
• Maintain the condition of permit-required confined space warning signs that are posted at or near the entry to spaces that occur within any building envelope.

G. Office of Environmental Health and Safety

• Establish and update the written Confined Space Entry program;
• Coordinate training opportunities for affected personnel;
• Conduct assessment of spaces to evaluate and document whether or not they are permit required confined spaces;
• Coordinate agreement with off-site confined space rescue services (see Appendix A);
• Provide technical consultation to departments that enter confined spaces upon request;
• Review completed Confined Space Entry Permits. Identify possible issues or problems and contact the managing department for review and corrective action; and
• Coordinate and conduct an annual review of the Confined Space Entry program utilizing terminated permits and documenting in accordance with section XI.

H. Confined Space Rescue Team

Currently UNH does not have a trained in-house rescue service. UNH will rely on the Durham Fire Department (DFD), Manchester Fire Department (MFD), and/or other identified teams for rescue services. OEHS will work with each outside rescue service to ensure they have the training and equipment to respond to confined space emergencies.

V. GENERAL REQUIREMENTS

With the exception of manholes, all known permit-required confined spaces on the UNH Durham Campus will be marked or labeled.

• Spaces with a recognized hazard are marked as “Danger, Permit-Required Confined Space” (PRCS). Each PRCS will have an alphanumeric identifier unique to that space on the signage.
• Some spaces that meet the definition of confined space but do not contain a recognized hazard (e.g., a non-permit required confined space) are marked with a “Warning, Confined Space” sign or label.

Manholes will be considered permit-required confined spaces regardless of whether they have been marked or labeled. During entry planning for manholes every effort will be made to either eliminate all recognized hazards prior to entry, or to determine if all potential atmospheric hazards can be controlled to acceptable levels through the use of forced air ventilation.

Only employees trained and knowledgeable of the requirements of the procedures listed in this program document will be authorized to enter a permit-required confined space or oversee entry planning and operations.
Affected employees who are not authorized Entrants under this program may enter spaces marked with Confined Space signs/labels demarcating a non-permit required confined space if all of the following conditions are met:

- The employee has received Confined Space Awareness training; and
- The employee will not introduce any hazards into the space (e.g., chemicals, equipment, hot work).

**VI. ENTRY PROCEDURES**

**A. Pre-entry planning**

An Entry Supervisor has the responsibility for planning and approving safe entry operations. The Entry Supervisor must evaluate all confined spaces prior to employee entry. The purpose of the evaluation will be to determine if:

- A space marked as Non-Permit Confined Space will (temporarily or permanently) become a Permit-Required Confined Space due to the work processes or other actions of the Entrant(s);
- A space marked “Danger, Permit Required Confined Space” can be reclassified to a Non-Permit Confined Space prior to entry if all non-atmospheric hazards can be eliminated (see Section VI(B));
- A space marked “Danger, Permit Required Confined Space” has only an atmospheric hazard that can be controlled through continuous force air ventilation. In this case the Supervisor can determine that the entry will be performed under Alternate Entry Procedures (see Section VI(C)); or
- The entry will be performed under full permit-required entry procedures.

Where it is determined that the space will require a permit for entry, the entry supervisor will create an entry plan. The entry plan is considered Sections A and B of the of the entry permit. The entry plan shall describe the following:

- Date and anticipated start and stop time of the scheduled entry;
- Permit space identification and its location;
- Description of the purpose for entry;
- Entry team;
- Hazards associated with the permit space;
- Appropriate ventilation equipment;
- Non-entry rescue equipment;
  - Entrants must utilize retrieval equipment for all permit-required vertical entries of depths greater than 4 feet.
  - Supervisors may specify retrieval equipment for non-vertical entries as they determine to be appropriate.
- PPE for Entrants;
- Means of communication to be used during entry;
• Appropriate air monitoring equipment and monitoring methods;
• Appropriate means to secure area;
• Requirements for the control of hazardous energy in the space (lockout/tagout procedures);
• The personnel or group who will be summoned to perform confined space rescue; and
• Any other control(s) as deemed necessary for safe entry operations.

The Entry Supervisor shall communicate the completed entry plan to OEHS and established rescue service (DFD, MFD, depending on the location of entry operation) a minimum of 24 hours in advance of scheduled entry operations. The Entry Supervisor shall be prepared to review the entry plan with the rescue team and/or OEHS prior to beginning any entry operation if requested.

Should an emergency require entry into a permit-required confined space where 24-hour notice is not feasible, the Entry Supervisor will notify the rescue service and OEHS prior to entry operations taking place. Emergency notifications will be made by fax and/or telephone.

The following rescue teams will be utilized.

<table>
<thead>
<tr>
<th>Location</th>
<th>Rescue Service</th>
<th>Contact Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durham</td>
<td>Durham Fire Department</td>
<td>603-862-1462</td>
</tr>
<tr>
<td>Manchester</td>
<td>Manchester Fire Department</td>
<td>603-669-2256</td>
</tr>
</tbody>
</table>

For those locations not identified above, the Entry Supervisor will be responsible for arranging and coordinating for the appropriate rescue services and documenting on the entry plan/entry permit. Confined space rescue services for contractor personnel are discussed in Section IX.

B. Reclassification to Non-Permit Confined Space

Some spaces which are marked, “Danger, Permit Required Confined Space” may be temporarily reclassified as a Non-Permit Confined Space [see OSHA 29 CFR 1910.146(c)(7)]. This determination must be performed and documented by an Entry Supervisor. Spaces may only be reclassified if the following conditions exist:

• The space has no actual or potential hazardous atmosphere; and
• All hazards within the space are eliminated without entry into the space.

If the Entry Supervisor verifies that these conditions can be met, the space can be reclassified as a non-permit required confined space for as long as the hazards remain eliminated. Reclassification will also not exceed the duration of the operation or one (1) shift, whichever is shorter.

If it is necessary to enter the space to eliminate hazards for reclassification, entry will be conducted following the Pre-Entry Planning in Section A and the Permit Required Confined Space Entry Procedures in Section D of this program.
Entry Supervisors must document the space reclassification using the Reclassification Certificate form located in Appendix B. The certificate must be completed in its entirety prior to entry and reviewed with each employee entering the space. In addition, notification of entry into a reclassified space must be made to OEHS prior to entry. This can be accomplished by e-mail or fax. The Reclassification Certificate will be filed with the originating Department and OEHS after the entry is complete, as detailed in Section XI of this document.

**C. Alternate Entry Procedures**

Some spaces which are marked, “Danger, Permit Required Confined Space” may be entered using alternate entry procedures (see OSHA CFR 29 1910.146(c)(5). This determination must be performed and documented by an Entry Supervisor. Spaces may only be entered using alternate entry procedures if the following conditions exist:

- The only hazard in the space is an actual, or the potential for a hazardous atmosphere;*
- The potential atmospheric hazard can be eliminated through the use of continuous forced air ventilation; and
- Previous and current air monitoring data demonstrate the above two conditions.

*If other hazards are present, alternate entry procedures cannot be utilized and entry must be conducted following the Pre-Entry Planning in Section A and the Permit Required Confined Space Entry procedures in Section D.

If the Entry Supervisor determines that alternate entry procedures may be used, the Entry Supervisor will ensure the following procedures are utilized:

1. All conditions making it unsafe to remove/open the entrance cover will be eliminated before the cover is removed or opened.
2. When the cover is removed or opened the opening will be promptly guarded to prevent an accidental fall through the opening and to protect each employee working inside the space from objects entering the space.
3. Ensure that air has been tested for oxygen and hazardous contaminants and the environment has been made safe for entry (see Section VII)
4. Record pre-entry conditions on the Alternate Entry Certificate form in Appendix C.
5. Set up ventilation for the space and continue until all employees have exited the space.
6. Proceed with entry.
   a. No Attendant is required during alternate entry procedures.
7. Perform air monitoring within the space as directed by the Entry Supervisor to ensure that the continuous forced air ventilation is preventing any accumulation of a hazardous atmosphere.
8. Immediately evacuate the space under any of the following conditions:
   a. The Entrant becomes aware of a previously unrecognized hazard;
   b. Ventilation equipment fails; or
   c. Air monitoring equipment goes into alarm.

Entry Supervisors must document the alternate entry procedures using the Alternate Entry Certificate Form in Appendix C. The certificate must be completed in its entirety prior to entry and reviewed with each employee entering the space. In addition, notification of entry into a
space utilizing alternate procedures must be made to OEHS prior to entry. This can be accomplished by e-mail or fax. The Alternate Entry Certificate will be filed with the originating Department and OEHS after the entry is complete, as detailed in Section XI of this document.

**D. Permit-Required Confined Space Entry Procedures**

The following is the procedure for entry into a permit-required confined space. The procedure will be completed following the Entry Supervisors completion of the pre-entry plan and its submission to the established rescue service and OEHS, and if requested, reviewed with the rescue team.

1. Verify Entrant(s) and Attendant(s). The Entry Supervisor may also be the Attendant.
2. Acquire, inspect, and set up equipment designated in the entry plan, including ventilation, safety equipment, personal protective equipment, non-entry rescue equipment (e.g., harness/tripod), and traffic control systems.
3. Lockout and tagout all sources of hazardous energy. On the Durham campus, contact the Facilities Support Center at 862-1437 to advise and/or coordinate lock-out/tag-out.
4. Verify that lockout/tagout has been conducted and document on the entry permit.
5. Perform any pre-use “bump testing,” field calibration, or other verification procedures for air monitoring equipment as specified in the equipment manual.
6. Perform air monitoring prior to entry (see Section VII and document on the entry permit.
7. Review entry permit with the entry team prior to entry.
8. The Entry Supervisor will sign the permit authorizing entry, each entrant and attendant will also sign the entry permit. The entry permit will remain at the entry site for the duration of entry operations.
9. Perform air monitoring as directed by the Entry Supervisor to ensure that atmospheric conditions remain acceptable throughout the duration of the entry and document on entry permit.
10. Immediately evacuate space if safety equipment fails, if the air monitoring equipment goes into alarm, if any other unforeseen hazards arise, and/or directed by the attendant.
11. Upon completion of entry operations the Entry Supervisor will terminate the permit and file the completed permit in his/her originating Department. A copy of the terminated permit will also be forwarded to OEHS in accordance with Section XI of this document.

**E. General Safety Procedures**

The following general safety procedures will be followed for all entry operations that are conducted at UNH.

- Openings will be promptly guarded by a barrier once opened to prevent the accidental fall into the space and to protect entrants from foreign object entering into the space;
- Non sparking tools will be utilized if a potential for a combustible or flammable atmosphere is present. Non-sparking tools are less likely to create a spark with metal-metal friction, however ignition is still possible. Non-sparking tools are not rated for use in flammable/combustible environments. Use ventilation/purging to remove flammable atmospheres. Use air monitoring to continuously verify atmospheric conditions;
- All lighting, radios, monitoring equipment, and other powered items used in confined spaces must be marked “intrinsically safe” and/or “explosion-proof” (as applicable);
- Use of compressed gas cylinders, except cylinders used for self-contained breathing apparatus, will be avoided;
- Confined space ventilation equipment shall be located such that hazardous air contaminants are not entrained into the fan and subsequently reintroduced into the space;
- Vehicles shall not be left running near confined space work or ventilation equipment being used for confined spaces; and
- Eating, drinking, and smoking in confined spaces is prohibited at all times.

VII. AIR QUALITY/HAZARDOUS ATMOSPHERES

The Entry Supervisor is responsible for ensuring that the correct air monitoring device is specified for the entry. The Entry Supervisor is encouraged to consult OEHS for technical assistance whenever necessary. Air monitoring will be performed prior to an employee entering a space, continuously when hazardous air contaminants exist or are generated (e.g., hot work, painting), throughout the entry, and at any other time deemed necessary by the Entry Supervisor. The entry team shall ensure the following when working in a space with a real or potential hazardous atmosphere:

- Ensure all air monitoring devices have received appropriate calibration in accordance with the manufacturer’s instructions. The date of calibration should be stated on a label affixed directly to the device;
- Perform any pre-use ”bump testing,” field calibration, or other verification procedures for air monitoring equipment as specified in the equipment manual;
- Sample the air quality of the space by slightly moving the lid or access panel, or by testing the space through a hole in the lid (if available) before completely opening the space;
- Conduct pre-entry monitoring in the following sequence, oxygen, combustible/flammable vapors, then toxic contaminants;
- For vertical spaces, lower the sampling tube slowly to sample air quality at all depths. Consult the manufacturer’s instructions for the amount of time to wait per foot of tubing before taking readings from the instrument;
- Record the results of air monitoring on the confined space entry permit;
- Perform air monitoring prior to entry and during the entry operations as directed by the Entry Supervisor; and
- Cease operations and evacuate entry personnel under the following conditions:
  - Oxygen levels less than 19.5% or greater than 23.5%
  - Combustible gas levels equal to or greater than 10%
  - Hydrogen sulfide levels equal to or greater than 10 ppm
  - Carbon monoxide levels equal to or greater than 35 ppm, or
  - Other hazardous air contaminants are detected at values above established acceptable limits.*

*For other contaminants, acceptable entry conditions are one half of the OSHA Permissible Exposure Limit unless deemed otherwise by a qualified health and safety professional.
Authorized entrants will be provided with the opportunity to observe any and all pre-entry and subsequent atmospheric testing.

**VIII. CONFINED SPACE EMERGENCIES**

In the event of an emergency, entry rescues in confined spaces shall only be attempted by persons who are properly trained and have the rescue equipment to do so.

In the event of an emergency, the Attendant(s) and/or Supervisor will attempt non-entry rescue only. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit-required confined space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:

- Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point in which the employer can establish a profile small enough for the successful removal of the entrant. 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; and

- The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit-required confined 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 retrieve personnel from a permit-required confined space that is greater than 4 feet in depth;

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.

Where the Durham or Manchester Fire Department acts as the rescue service, they shall be obtained by dialing 911. In other locations, confined space rescue services will be summoned as documented by the Entry Supervisor on the pre-entry plan.

**IX. CONTRACTORS**

When UNH arranges to have employees of another employer perform work that involves permit required confined space entry, the UNH Contract Coordinator or Project Manager will:

- Notify contractors of confined spaces in their work area and the hazards therein;
- Notify the Director of the UNH department with managerial oversight of the space regarding the intent to enter at least two (2) business days prior to planned entry operations;
- Ensure that the contractor has an appropriate confined space entry procedure or program and that all contractor employees are trained according to their role in the entry;
- Coordinate entry operations with the contractor when UNH employees are working in or near the permit space; and
- Complete or coordinate the pre-entry plan as specified in Section VI(A) and notify OEHS of the scheduled entry.

The Contractor will:

- Obtain applicable information about permit space hazards from the Contract Coordinator or Project Manager;
- Coordinate entry with UNH when UNH employees are working in or near the area of the scheduled entry;
- Provide documentation on the company’s confined space entry procedures to the Contract Coordinator or Project Manager;
- Provide all necessary equipment for safe entry into a space, including but not limited to:
  o Appropriate ventilation equipment,
  o Non-entry rescue equipment,
  o PPE for Entrants,
  o Appropriate air monitoring equipment and monitoring methods, and
  o Appropriate traffic control and barrier systems;
- Arrange for rescue services and notify the Contract Coordinator or Project Manager of rescue service provisions. Contractors who wish to use the Durham or Manchester Fire Departments for rescue services must make arrangements with the Fire Department and receive approval prior to of entry;
- Immediately notify the Contract Coordinator/Project Manager and OEHS of any instance where entry operations were terminated due to unforeseen hazardous conditions; and
- Complete an entry permit and forward a copy to the Contract Coordinator or Project Manager (the Contract Coordinator or Project Manager will ensure a copy of the contractors confined space entry permit is forwarded to OEHS prior to the entry taking place.

X. EMPLOYEE TRAINING AND INFORMATION

UNH employees who work near Confined Spaces or who will enter Permit-Required Confined Spaces will receive initial and refresher training. Initial and refresher training will consist of both lecture and/or hands on exercises to assist in ensuring each participant understands the material presented and can safely perform activities involving permit-required confined space entry operations. The following are the training requirements for UNH employees:
A. Confined Space Awareness Training for Affected Employees

Affected employees who are not Authorized Entrants under this program may enter non-permit required confined spaces marked with Confined Space warning signs if they have completed Confined Space Awareness Training. Affected employees shall receive training and information on the following:

- The definition of a confined space;
- The definition of a permit-required confined space;
- Identification of confined spaces at UNH;
- Permissible activities for affected employees;
- Risks and hazards of entering a permit-required confined space without the proper training and equipment; and
- Conditions that can result in the reclassification of a non permit confined space into a permit-required confined space.

B. Permit Required Confined Space Entry Training

For the purposes of training, UNH makes no distinction between Confined Space Entrants, Attendants, and Supervisors. Employees who will act in any role will receive initial and refresher training as specified herein. Initial Confined Space Entry training will consist of lecture and hands on exercises on the following:

- Definition of a confined space;
- Definition of a permit-required confined space;
- Confined space regulations;
- Confined space hazards, recognition, and evaluation;
- Pre-entry planning;
- Duties of Entrants, Attendants, and Supervisors;
- PPE for confined space entry;
- Hot work permit procedures;
- Lockout/tagout procedures;
- Entrant/Attendant communications;
- Air monitoring methods and hands on specific equipment operation and calibration;
- Use of mechanical retrieval equipment and hands on use;
- Ventilation;
- Activating emergency rescue services;
- Selection of non-entry rescue/retrieval equipment;
- Non-entry rescue techniques;
- Permit/documentation procedures;
- Space reclassification procedures; and
- Use of alternate procedures.
C. Refresher Training

Refresher training for those involved in confined space entry operations will be provided whenever it is determined that there are deviations from the permit space entry procedures outlined herein or if inadequacies are identified in employees knowledge or understanding of the permit required confined space entry program. Refresher training will consist of a review of those areas where inadequacies have been identified and may include lecture, and/or hands on practical exercises.

XI. RECORDKEEPING

Completed permits, Reclassification, and Alternate Entry Certificate forms must be maintained by the originating department for a minimum of 1 year. A copy of each terminated permit and/or certificate form shall be forwarded to OEHS for retention and use during program reviews and training.

Documentation of the annual review will be maintained in OEHS and will include terminated permits utilized during the review process.

Attendance records for employee initial and refresher training programs shall be preserved and maintained in OEHS for a minimum of the duration of the employee’s employment with UNH.
Appendix A
Confined Space Rescue Agreement Response Form
Appendix B
Reclassification Certificate
Reclassification Certificate: Permit Space to Non Permit Space

**CAUTION!!! THIS IS NOT A CONFINED SPACE ENTRY PERMIT.**

This form must be filled out and signed by a Confined Space Entry Supervisor or a Qualified Health and Safety Professional. Reclassification of a Permit Required Confined Space to a Non Permit Required Confined Space is valid for a single shift. The following evaluation is consistent with OSHA 29 CFR 1910.146(c)(7).

Entry Supervisor (or Health and Safety Professional) - Complete the following:

<table>
<thead>
<tr>
<th>Space: Location:</th>
<th>Yes</th>
<th>No</th>
<th>Method of Hazard Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the space free of actual or potential atmospheric hazards (including, not limited to drifting vapors from tanks, pipes, or sewers)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Considering industrial or other discharges, is this area likely to remain free of air contaminants while occupied? (Consider the potential of equipment failure, other activities happening near the space, etc.)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have all sources of hazards been isolated from the confined space without personnel entry? (All hazardous energy is controlled, lockout tagout procedures are in use, etc.)?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Entry Supervisor must notify the Office of Environmental Health and Safety of the scheduled entry and reclassification prior to entry activities.*

If the answer to any of the above question is “No” then the space cannot be reclassified from Permit Required Confined Space to Non Permit Required Confined Space and entry must be performed under permit conditions.

A copy of this form must remain at the entry site for the duration of the entry or shift, whichever is shorter. This reclassification is considered valid for no greater than 1 shift or 8 hours. A copy of this form must be provided to the UNH Office of Environmental Health and Safety upon completion of entry into the space. The department overseeing the entry is responsible for maintaining a copy of this form on file for a minimum of 1 year.

________________________________________
Name

________________________________________
Signature

________________________________________
Date

________________________________________
Time
Appendix C
Alternate Entry Certificate
# Alternate Entry Certificate

**CAUTION!!! THIS IS NOT A CONFINED SPACE ENTRY PERMIT.**

This form must be filled out and signed by a Confined Space Entry Supervisor or a Qualified Health and Safety Professional. An Alternate Entry Certificate is valid for a single shift. The following evaluation is consistent with OSHA 29 CFR 1910.146(c)(5).

Entry Supervisor (or Health and Safety Professional) - Complete the following:

<table>
<thead>
<tr>
<th>Space:</th>
<th>Location:</th>
<th>Yes</th>
<th>No</th>
<th>Comments/Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is an actual or potential hazardous atmosphere the ONLY hazard associated with this confined space?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The entrant will not perform any hot work or use any hazardous chemicals that present a respiratory hazard. (If either or true, refer to permit entry procedures.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the Entry Supervisor trained in operation of the gas monitor in use?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has a air monitor functional test been performed this shift on the monitor to be used in accordance with the manufacturer’s instructions?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has a ventilation blower in good working condition been set up to ventilate the space? Has the Entry Supervisor calculated the appropriate purge time and allowed the space to be purged of hazardous air contaminants prior to air testing? Does the blower achieve 20 air changes per hour?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the atmosphere of the confined space been tested prior to entry? Were results within acceptable limits (Oxygen between 19.5% to 23.5%; Combustible gas less than 10% LEL, Hydrogen Sulfide less than 10 ppm, Carbon Monoxide less than 35 ppm)? (Document air measurements in comments section.)</td>
<td></td>
<td>Oxygen: LEL: H2S: CO:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Entry Supervisor must notify the Office of Environmental Health and Safety of the scheduled entry and alternate procedures prior to entry activities.*

If the answer to any of the above question is “No” then alternate entry procedures cannot be used and entry must be performed under permit conditions.

A copy of this certificate must remain at the entry site for the duration of the entry or shift, whichever is shorter. This certificate is considered valid for no greater than 1 shift or 8 hours. A copy of this form must be provided to the UNH Office of Environmental Health and Safety upon completion of entry into the space. The department overseeing the entry is responsible for maintaining a copy of this form on file for a minimum of 1 year.

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
</tr>
</tbody>
</table>
Appendix D
UNH Permit for Permit-Required Confined Space Entry
University of New Hampshire
Confined Space Entry Permit

SECTION A: GENERAL INFORMATION
Date: ___________________ Start Time: ___________ AM/PM End Time*: ___________ AM/PM
Space ID: ___________________ Location: ___________________
Space Description: ___________________ Reason for Entry: ___________________

Trained Entry Team
Entry Attendant: ___________________ Authorized Entrant: ___________________
Entry Supervisor: ___________________ Authorized Entrant: ___________________
Rescue Team: ___________________ Notification (method, date, & time): ___________________

*Permit valid for duration of work not to exceed a single shift or not greater than eight hours. Permit to remain at space for the duration of the entry.

SECTION B: PRE-ENTRY PLAN

REQUIREMENTS TO BE COMPLETED PRIOR TO ENTRY
(Explore either yes, no, or enter N/A for items that do not apply)

<table>
<thead>
<tr>
<th>requirement</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area security and barricades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control of Hazardous Energy (LOTO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumatic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lines broken, capped, or blanked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Space purged, flushed, and/or vented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting (Intrinsically safe) -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrieval Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Protective Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective overalls:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protective Gloves:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory Protection:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head Protection (hard hat)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot Work (welding, cutting, burning)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ladder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Extinguisher</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe all equipment and procedures required for entry:

Describe method of communication to be utilized during entry:

SECTION C: ATMOSPHERIC TESTING – Only personnel trained in the operation of specific air monitoring devices

Air Monitoring Equipment
Manufacturer: ___________________ Date of last annual calibration: ___________________
Model: ___________________ Date and time of bump test: ___________________

Air Monitoring Equipment
Manufacturer: ___________________ Date of last annual calibration: ___________________
Model: ___________________ Date and time of bump test: ___________________

Air Monitoring (record results every 30 minutes)

<table>
<thead>
<tr>
<th>Test to be taken</th>
<th>Permissible Entry Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Oxygen</td>
<td>19.5% - 23.5%</td>
</tr>
<tr>
<td>Combustible Vapors</td>
<td>Under 10%</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>Less than 10 ppm</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>Less than 35 ppm</td>
</tr>
<tr>
<td>Other (list)</td>
<td></td>
</tr>
</tbody>
</table>

Monitoring Results

<table>
<thead>
<tr>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
<th>am/pm</th>
</tr>
</thead>
</table>

SECTION D: SIGNATURE BLOCK

*I certify that I know and understand the requirements of the UNH Confined Space Entry Program and that I will comply with these criteria.

Attendant Signature: ___________________ Date: ___________________ Time In: ___________ Time out: ___________
Entrant Signature: ___________________ Date: ___________________time: ___________

*I certify that the above information is correct and that the entrant and attendant are fully competent to perform the work described.

Supervisor Signature: ___________________ Date: ___________ Permit Terminated □ Date/Time: ___________________
SECTION A: GENERAL INFORMATION
- Date: Fill in the date of the entry.
- Start Time: Fill in the proposed start time of the entry.
- End Time: Fill in the proposed end time of the entry. Confined space entry permits are valid for a single shift or no greater than 8 hours.
- Space ID Number: Indicate the number of the space, if applicable. Permit-required confined spaces in the inventory which are not manholes are labeled with an alpha-numeric identifier on the entry portal.
- Space Location: Indicate the building and room number or, if outdoors, indicate the street and nearest landmarks.
- Space Description: Provide a brief description of space to be entered. (i.e., sewer, storm drain, electrical vault, boiler).
- Reason for Entry: Provide a brief description of the work to be conducted during entry operations.
- Trained Entry Team: Clearly print the names of the Entry Supervisor, Attendant, and all Entrants. At a minimum there must be an Entrant and a Supervisor/Attendant.
- Rescue Team: Fill in the name of the Confined Space Rescue Team. The rescue team must be notified in advance of the entry and may require a pre-evaluation prior to entry.
- Notification: Indicate the pre-entry notification to the rescue team by method (e.g., phone call, fax, meeting), and the date and time of pre-entry notification. NOTE: if the rescue team is the Durham Fire Department, notifications must be made by fax of the permit, or personal meeting.

SECTION B: PRE-ENTRY PLAN
- Area security and barricades: Check “yes” if traffic controls or site security will be used. Some form of traffic controls or site security is required for all entry. Traffic controls and site security may include guard rails, traffic cones, and/or cording.
- Control of Hazardous Energy (LOTO): Check “yes” if the entry will require the control of hazardous energy and check applicable energy source(s). Check “no” if the entry will proceed without locking out or tagging out sources of hazardous energy (explain fully below). Mark N/A if there are no sources of hazardous energy in the space.
- Lines Broken, Capped, or Blanked: Check “yes” if the entry will require capping or blanking of lines carrying fluids. Check no if the entry will not require capping or blanking of lines carrying fluids. Check “N/A” if no lines carrying fluids are present.
- Space purged, flushed, and/or vented: Check “yes” if the entry will require forced air ventilation to purge and maintain a safe atmosphere. Check “N/A” if there is no real or potential hazardous atmosphere and ventilation will not be used. (Describe ventilation below).
- Lighting (Intrinsically safe): Check “yes” if lighting is necessary, Check “no” if not. Check “intrinsically safe” if lighting is required for use in a potential combustible/flammable atmosphere.
- Retrieval Equipment: Check “yes” if non-entry rescue retrieval equipment will be used. Check “no” if non-entry retrieval equipment will not be used. If checked No, explain in detail. Fall arresting equipment is required for all vertical entries greater than 4 feet in depth.
- Personal Protective Equipment: Check “yes” if personal protective equipment will be used. Check appropriate box for applicable PPE and list PPE selected. Some form of personal protective equipment is required for all confined space entries.
- Respiratory Protection: Check “yes” if entrants will wear respiratory protection. Check “no” if entrants will not wear respiratory protection. Check “N/A” if there are no real or potential atmospheric hazards. Check applicable respirator type and indicate specific respirator to be used (i.e., ½ face APR, full face APR, air line system, SCBA). For APR, list filter cartridge to be used.
- Head Protection: Check “yes” if overhead hazards require the need for head protection.
- Hot Work: Check “yes” if hot work will be performed during the entry. Hot work includes welding, cutting, brazing, and soldering. If yes, refer to the UNH Hot Work Program and permit system.
- Ladder: Check “yes” if ladder is necessary for entry.
- Fire Extinguisher: Check “yes” if entry operations require presence of fire extinguisher. (If hot work is checked yes, extinguisher is required).
- Describe all equipment and procedures required for entry: Use this space to describe the requirements for confined space entry from the above list and additional requirements as deemed necessary by the Supervisor.
- Describe method of communication to be utilized during entry: Use this space to describe the method of communication to be used between Attendant and Supervisor.
- Air Monitoring Equipment – Atmospheric Hazards/Sensor(s): Indicate known or potential atmospheric hazards and all applicable sensors or detectors in the instrument (e.g., combustible gas, oxygen).
- Air Monitoring Equipment - Date of last annual calibration: Date instrument was last calibrated by manufacturer.
- Air Monitoring Equipment – Date and time of bump test: Date and time instrument was bump tested (should be prior to use).
- If more than one instrument is in use, use both boxes to indicate monitoring equipment.

SECTION C: ATMOSPHERIC TESTING
- Atmospheric Testing: Give the time and results of atmospheric testing. At a minimum, each space must be tested for oxygen, combustible gas, and carbon monoxide. The initial entry readings should be documented. In addition readings should be documented periodically thereafter. As necessary additional analytes must be monitored within the space during entry operations. Use the blank spaces to indicate tests for other air contaminants. If the results do not fall within permissible entry levels, DO NOT ENTER. For analytes not listed above, conditions acceptable for entry will be considered to be one half of the OSHA Permissible Exposure Limit unless deemed otherwise by a qualified health and safety professional.

SECTION D: SIGNATURE BLOCK
- All members of the entry team must sign and date the signature block indicating that they have read and understand the entry plan/permit prior to commencement of work. In addition, the times for each entrant when they enter and exit the space should be documented.
- OTHER
  Any additional information related to the safe entry into the confined space should be documented by attaching additional sheets if necessary and/or utilizing the back of the entry permit.
  The Pre-Entry Plan, which consists of Section A and Section B must be completed and forwarded to both OEHS and the designated Rescue Service prior to the scheduled entry.
  Section C and Section D must be completed just prior to entry.
  The permit must remain at the space for the duration of entry operations.
  A copy of the terminated entry permit must be filed with the originating department with a copy forwarded to OEHS.