



**Confined Space Entry Program
Permit-Required Confined Spaces
May 2021
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Table of Contents

| | <u>Page</u> |
|-------------------------------------|-------------|
| I. Purpose | 3 |
| II. Scope | 3 |
| III. Responsibilities | 3 |
| IV. Confined Space Assessments | 5 |
| V. Entry Precautions and Procedures | 6 |
| VI. Entry Permit | 7 |
| VII. Emergency Response | 8 |
| VIII. Contractors | 8 |
| IX. Training | 9 |
| X. Contacts | 9 |
| XI. Program Revisions | 10 |
| XII. Confined Space Inventory | 10 |

Permits for confined space entry can be found on the EHS Webpage at <http://www.wellesley.edu/safety>

A list of known confined spaces is kept on file at the EHS Office in the Distribution Center.

I. Purpose

Pursuant to the requirements of 29 CFR 1910.146, the OSHA standard for Permit-Required Confined Space entry, this written program is established for Wellesley College to ensure safe entry procedures are used prior to and during all work activities taking place in areas identified as confined spaces. This program sets forth minimum guidelines and procedures intended to protect Wellesley College personnel who may be required to enter or work in such spaces. All employees are expected to be familiar with and comply with the provisions of this policy whenever it is necessary to enter or work within confined spaces or otherwise work in conjunction with those workers who enter such spaces. Additionally, whenever outside contractors are hired to perform work at the College involving confined space entry, the contractor is required to comply with this program. Any questions concerning this policy should be directed to the EHS Office.

II. Scope

This written program covers employee entry into confined spaces and permit-required confined spaces, defined below.

A Confined Space is one that has limited or restricted means of entry or exit, is large enough or so configured that an employee can bodily enter and perform assigned work, and is not designed or intended for continuous occupancy. For an enclosure to be considered a confined space, it must meet all of the above criteria.

A Permit-Required Confined Space (PRCS) is one that meets the definition of a confined space as noted above and has one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant, such as liquids or finely divided solids like sand or grain.
3. Has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly conveying walls or by a floor that slopes downward and tapers to a small cross section. For example, cone-shaped or round bottom silos, bins or tanks.
4. Presents other serious safety or health hazards such as unguarded mechanical equipment, energized conductors, temperature extremes, excessive noise, hazardous radiation, or any other condition which could disable or injure a person.

III. Responsibilities

Each member of the College community plays an important role in the compliance of this program. Major responsibilities are outlined as follows:

A. Environmental Health and Safety Office

- Review and update this Program accordingly.
- Conduct a periodic evaluation of the program.
- Provide general training.
- Serve as a technical resource for assistance with assessing space hazards and confined space identification.
- Assist with confined space equipment procurement.
- Ensure that entry equipment is inspected at least annually, either internally or by a qualified third party
- Maintain calibrated gas meters for space entry.

B. Facilities Management Administration

- Provide employees with the necessary equipment and support to carry out the requirements of this Program.
- Ensure employees are appropriately categorizing spaces and assessing hazards before entry.
- Coordinate general training sessions with EHS and provide job-specific training for employees who may need to enter confined spaces.
- Maintain a copy of this Program in an accessible location.
- Ensure that issues found during program reviews are remedied in a reasonable timeframe. Imminent hazards to be addressed immediately.
- Ensure employees are following correct procedures and maintaining appropriate paperwork when entering confined spaces and permit-required confined spaces.

C. Project Managers

- Brief contractors on the location and hazards of any confined spaces associated with their projects.
- Ensure contractors conduct work involving confined spaces in accordance with this plan and the appropriate OSHA standards.
- Conduct pre and post-work briefings with any contractor performing confined space entries.
- Contractors should alert PM's if any new spaces will be introduced at the College or if any will be removed during construction/renovation. A list of spaces, including hazards associated with the space will be provided to EHS upon completion of a project. Note: projects should attempt to not add confined spaces to buildings and grounds.
- Consult with EHS, if needed, when contractors may need to enter confined spaces.

D. Confined Space Supervisors

- Review the information obtained by Facilities Management or the Project Manager regarding the type of confined spaces and expected hazards prior to the start of work.
- Assess and control any hazards in or around a confined space before permitting entry.
- Ensure that all employees on the site are aware of the confined spaces hazards, the methods utilized to control the hazards and the methods to be used to summon emergency responders.
- When required, complete the confined space permit and affix it at or near the primary entry point.
- Maintain expired confined space entry permits for at least one year.

E. Attendants

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Be aware of possible behavioral effects of hazard exposure in authorized entrants;
- Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants accurately identifies who is in the permit space;
- Remains outside the permit space during entry operations until relieved by another attendant;
- Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space
- Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions;
 - If the attendant detects a prohibited condition;
 - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
 - If the attendant detects a situation outside the space that could endanger the authorized entrants; or
 - If the attendant cannot effectively and safely perform all the duties required
 - Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;
- Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:
 - Warn the unauthorized persons that they must stay away from the permit space;

- o Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and
- o Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;
- o Performs non-entry rescues as specified by the employer's rescue procedure; and
- o Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

F. Entrants

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
- Properly use required equipment
- Communicate with the attendant as necessary
- Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or the entrant detects a prohibited condition
- Exit from the permit space as quickly as possible whenever an order to evacuate is given by the attendant, the entry supervisor, or another entrant, the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, the entrant detects a prohibited condition, or an evacuation alarm is activated.

G. Contractors

- Must have a confined space entry program that meets or exceeds the requirements of this program and fully complies with applicable OSHA standards.
- Participate in pre and post-work briefings with the Project Manager.
- Informs the Project Manager and/or EHS if any unexpected hazard is encountered or rescue procedures are initiated during a confined space entry.
- Develops a confined space rescue plan prior to beginning work.
- Must bring their own equipment and ensure that it is in good working order

IV. Confined Space Assessments

The Facilities Department will conduct confined space assessments. All confined spaces will be listed on the “Confined Space Inventory” and maintained by the EHS Department.

The inventory shall detail:

- The location of the space.
- A space identification number.
- The hazard(s) present in the space.
- If the space is permit or non-permit required.

The inventory will be updated as new confined spaces are identified and reviewed on an annual basis by the EHS Department.

V. Entry Precautions and Procedures

A. Non-Permit Required Confined Space Entry

A member of the Wellesley College community must be aware that they are entering a confined space.

B. Permit Required Confined Space Entry

In addition to complying with part A of this section, a confined space permit must be completed by an authorized confined space supervisor prior to entry. Please refer to section VI for more information. Per 29 CFR 1910.146(d), all permit-required confined spaces shall have:

- At least two members (entrant and attendant).
- Atmospheric testing and continual monitoring by entrant(s).
- Suitable confined space rescue method - harness and winch (must be attached to tripod or davit arm). Should the use of a tripod or davit arm not be feasible, alternative means of rescue shall exist, such as an anchor sling or mechanical advantage pulley. Should the use of a lifeline create additional hazards (e.g., entanglement hazards in pipechases), it is permissible to work without a retrieval system. However, this may necessitate the hiring of a technical rescue contractor, depending on the level of hazard involved.
- A reliable method to summon emergency response in the event of an emergency.

B1. Hazard Recognition and Control

Prior to entry, the Confined Space Supervisor must identify all the hazards associated with the space. If required, the Confined Space Supervisor will control the hazard(s) utilizing applicable Wellesley College policies and procedures (i.e. Control of Hazardous Energy or Hot Work). If the confined space supervisor is unsure of the hazards, they shall contact the EHS Department before proceeding.

The Confined Space Supervisor will ensure that a Safety Data Sheet (SDS) is available for hazardous chemicals to be used or present in the confined space.

B2. Atmospheric Hazards

Prior to entry into a confined space, the Confined Space Supervisor or their designee will test the atmosphere using a four-gas meter. If mechanical ventilation is being utilized, it must be stopped during the initial testing.

All entrants can observe the initial atmospheric testing if they wish to do so. In addition, all entrants and attendants can request additional atmospheric testing be conducted at any time during the entry.

A confined space will be considered to have a hazardous atmosphere if any of the following conditions exist or could be reasonably expected to exist:

- Oxygen levels at or below 20% or at or greater than 22%

- Presence of flammable vapors at or above 10% of the lower explosive limit (LEL)
- The presence of Carbon Monoxide (CO) (50ppm)
- Hydrogen Sulfide (H₂S) (10ppm) at or above their permissible exposure limit (PEL)
- The presence of any other gas or vapor at or above their PEL

Mechanical exhaust ventilation will be utilized in all permit-required confined spaces that are considered to have a hazardous atmosphere. If the atmospheric hazard can be eliminated by the use of mechanical exhaust ventilation alone, the space can be re-classified as a non-permit required space.

B3. Personal Protective Equipment

If engineering controls alone cannot mitigate the space's hazards then personal protective equipment (PPE) will be utilized. The Confined Space Supervisor, in conjunction with the EHS Department, will determine the appropriate PPE for the entrants and attendants.

C. Vehicular and Pedestrian Traffic

When confined space operations occur on or near an active roadway, the Confined Space Supervisor will ensure a work zone is established in accordance with the Manual of Uniform Traffic Control Devices and any local requirements.

When confined space operations occur on or near an active walkway, the confined space supervisor shall provide a safe alternative pedestrian path that avoids the work area.

VI. Entry Permit

Prior to any entry into a PRCS, a Confined Space Supervisor must complete a confined space entry permit. Template permits are available on the EHS Website at <http://www.wellesley.edu/safety>

Confined space entry permits are valid for eight hour shifts. Permits expire after eight hours or under any of the following conditions:

- If the space is left unattended for any length of time.
- If the Confined Space Supervisor is replaced.
- If a prohibited condition is detected.
- If rescue procedures are instituted (including self-rescue). In this case, the permit expires when all entrants have evacuated the space.

The permit shall be posted at the space's entry way for the duration of the entry. Once the entry is completed or the permit expires, the Confined Space Supervisor will cancel the permit and maintain the permit at his or her office. Canceled permits will be retained for a minimum of one (1) year.

VII. Emergency Response

The Confined Space Supervisor must develop a rescue plan, including confirming that there is a way to contact emergency services, prior to entry.

In the event of an emergency of any type, the Entrant will be ordered out of the space immediately. The Attendant will initiate rescue procedures then contact emergency services by calling Campus Police at 781-283-5555 (if needed).

Rescue procedures must be implemented in the following order:

- Self-rescue (the Entrant leaves the space).
- Non-entry rescue (the Attendant utilizes the extraction equipment to assist the Entrant)
- Entry rescue (a trained rescue team enters the space and extracts the Entrant).

In order to facilitate rescue, all Entrants into a confined space must wear a harness and lifeline. The lifeline must be attached to an immovable object or an extraction device outside of the space.

Extraction equipment is required to be fully deployed at any permit-required confined space equal to or greater than five (5) feet in depth and must remain deployed for the duration of the entry.

Members of the Wellesley College community are not trained or authorized to conduct entry rescues. Rescue services should be outsourced to a qualified contractor as needed.

Any situation that requires any level of rescue procedures to be initiated must be reported to the EHS Department. The EHS Department must review and approve any post-rescue work plan.

Once a harness and winch have been used for non-entry rescue, neither item may reenter service until they have been inspected and cleared for service by a competent person. If the use indicator on the winch (check instruction manual for clarification) is visible, it must be sent back to the manufacturer to be recertified. If the use indicator on the harness is visible, it shall be destroyed and disposed of.

VIII. Contractors

All contractors conducting confined space operations at Wellesley College are required to have a confined space entry program that meets or exceeds both applicable OSHA requirements and this program. Contractors are required to provide training to their employees, provide all air monitoring equipment, extraction equipment, ventilation systems, personal protective equipment and all other tools and equipment required to enter a confined space. All equipment provided by contractors must be in good working order, and they must be able to furnish up-to-date inspection and calibration records if asked. The contractor will also provide the Project Manager with a rescue plan prior to commencing the start of a project that includes entering permit-required confined spaces.

Prior to beginning work, contractors are required to participate in a pre-work briefing with the Project Manager. The following topics must be discussed during the briefing:

- The location of any confined spaces in the work area or any confined spaces created by the contractor's activities.
- The hazards of those confined spaces.
- Any additional hazards that may be created by the contractor's or a sub-contractor's activities (i.e. performing hot work inside of a confined space).
- The methods the contractor will use to control the hazards.
- How to contact emergency services.

Once confined space operations are completed, the contractor is required to participate in a post-work debriefing with the Project Manager. The following topics must be discussed during the debriefing:

- The activities conducted in the confined space.
- Any unanticipated hazards that were encountered during the entry.
- Any situations that required rescue procedures to be initiated.
- Any confined spaces created by construction activities.

A contractor acting as a General Contractor on a project is responsible for ensuring that all sub-contractors comply with the requirements of this program.

IX. Training

All members of the Wellesley College community who may enter a confined space or have designated responsibilities under this program must receive training on the following topics:

- How to identify confined spaces
- Confined space hazards
- Basic confined space entry procedures
- The required elements of a pre and/or post-work briefing
- Emergency procedures

This training must be performed when the responsibilities are assigned and every two years thereafter.

Any member of the Wellesley College community who is expected to participate in a permit-required confined space entry must receive training in these additional topics:

- Use of air monitoring equipment.
- Use of extraction equipment.
- Use of other safety equipment (i.e. ventilation systems)
- Use of required personal protective equipment
- Non-entry rescue procedures

X. Contacts

Campus Police - EMERGENCY 781-283-5555

Campus Police – non-emergency 781-283-2121

Environmental Health and Safety Office 781-283-3882 or 3483

Facilities Management Dispatch 781-283-2767

XI. Program Revisions _

| Review Date: | Reviewed By: | Summary of Edits: |
|--------------|-----------------|--|
| 5/3/2021 | Victor Hult | Reviewed and formatting updated |
| 11/2022 | Suzanne Howard | Various edits in response to recent program review and protocols that are too stringent. |
| 2/2024 | Duncan Sullivan | Various clarifications made to requirements where existing measures may not be feasible. |
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Copies of this program exist on the google drive in the following folders:

- 1) EHS>Confined Space
- 2) PM&EHS>Plans>Confined Space Entry Plan
- 3) EHS Website

XII. Confined Space Inventory

<https://docs.google.com/spreadsheets/d/1UVE4YWOcJcaP5NB1uKVM1djwMJI6fOSpnxGBCHKnV2Q>