

Roger Williams University Confined Space Entry Policy



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Adopted April 26, 2011 (President's Cabinet)

ROGER WILLIAMS UNIVERSITY
CONFINED SPACE ENTRY POLICY

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I. Introduction

Roger Williams University (RWU) has a number of confined spaces on campus. OSHA defines a confined space in 29 CFR 1910.146 as a space:

- An employee may bodily enter and perform work;
- With a limited or restricted means of entry / exit; and
- Not designed for continuous employee occupancy.

Examples on the RWU campus include: sewer lines, telecommunications wires and cables, and domestic water lines all accessed via manholes, sewer pump pits, sprinkler pits, and water meter pits.

Confined spaces that have additional hazards are called “permit required confined spaces” (PRCS). A PRCS meets one or more of the following criteria:

- Contains, or could potentially contain, a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration where an entrant could be trapped or asphyxiated by inwardly converging walls or downward-sloping floors with a tapering cross-section; and / or;
- Contains any other recognized serious safety or health hazard.

RWU’s PRCS’s only meet the criteria for potentially hazardous atmosphere, so RWU’s PRCS’s are able to be managed under the alternate entry requirements listed in 29 CFR 1910.146(c)(5). RWU employees will not be performing confined space entries that cannot be performed in compliance with these alternate requirements.

II. Policy Scope and Training Requirements

RWU departments are primarily responsible for compliance with, and safe implementation of, all RWU safety programs. RWU EHS is available to assist with compliance and provide policy clarification as necessary.

Students

RWU does not allow any students to enter confined spaces (this includes work-study students, student employees, and interns).

RWU Employees

RWU employees must meet the following criteria to participate on a confined space entry team:

1. Attend an annual confined space entry training that covers 29 CFR 1910.146 requirements and RWU-specific protocols. The training will be hosted by RWU EHS and will take approximately 1.5 hours. Employees must pass a short written test on procedures and safe entry conditions, and successfully demonstrate the ability to use RWU’s confined space entry equipment and properly fill out the required paperwork.
2. Be able to safely and compliantly execute all required duties for their position (entrant, attendant, or supervisor – job duties are listed in section below).

3. Managers and supervisors that have immediate reports acting as confined space entrants, or routinely utilize contractors as entrants as part of an RWU / contractor entry team, must be confined space entry trained as well. Managers and supervisors must be able to act as confined space entry supervisors in the event that their employee / contractor needs to enter a confined space.
4. Employees that are involved in a confined space entry that results in an incident, injury, near-miss, or is not otherwise safely or compliantly executed will be required to re-take and pass the certification class, and also be re-approved by EHS and their manager / supervisor before participating in another confined space entry.
5. RWU Public Safety Emergency Medical Technicians (EMTs) must have a current 16-Hour Confined Space Entry and Rescue certification to perform a non-hazardous atmosphere confined space entry rescue. This training will be offered through an outside vendor on an annual basis. At no time will RWU EMTs enter a hazardous atmosphere.

Contractors – Working with RWU employees as part of an entry team

Contractors are allowed to participate in RWU confined space entries in the entrant role only. They must provide proof of confined space entry training to RWU EHS and RWU Facilities Management prior to being allowed to enter an RWU confined space. They must follow RWU confined space entry procedures as listed in Section III below, be informed of any potential or actual hazards, and be afforded the chance to observe the pre-entry atmospheric testing. They must be able to carry out all the entrant job duties described in the “Job Duties” section below. They must follow their own company’s safety policies in addition to RWU’s. They may use RWU’s confined space entry equipment (harness, tripod, winch, etc.). They have the right to inspect the equipment prior to use.

Contractors – Working without RWU employees

Public works and utilities employees (e.g., domestic water, telecommunications, etc.) that perform confined space entries as part of their routine job duties may do so on the RWU campus. They are responsible for following their own company’s safety policies. They are required to inform RWU Public Safety prior to entering a confined space. They are required to erect a barrier and traffic controls around the confined space entrance to protect themselves and pedestrians. They are not allowed to use RWU’s confined space entry equipment.

III. Entry Procedures

RWU will use the following procedures to manage the confined space entry team’s safety and to comply with the requirements listed in 29 CFR 1910.146(c)(5). These procedures are also described on the RWU Confined Space Entry Form.

1. If the task can be performed without a person physically entering the confined space, use the alternate method. Do not enter the confined space unless necessary.
2. If an entry is needed, call Public Safety Dispatch at x3333 and notify the officer that a confined space entry will be taking place on campus. Give the names of the entrant, attendant, and supervisor, the location and type of the confined space, and the requestor’s name and reason for entry.
3. Confirm scene safety.

- a. Confirm that the weather conditions are acceptable for entry (the pop-up tent may be used to provide shelter over the confined space if necessary) and that the grounds around the entrance are stable and in good condition to support the retrieval system.
 - b. Confirm that seasonal concerns will not interfere with a safe entry (i.e., snow, heat/cold, insects, muddy / icy ground near the confined space entrance, etc.).
 - c. Use traffic controls if the entrance is in a roadway (cones, barriers, flagger, etc.).
4. Eliminate any conditions that would make it unsafe to remove the confined space entrance cover, then remove the cover and place a guard around the open space to prevent people or objects from falling into the space.
 - a. Clear the surrounding area of debris that may interfere with opening or closing the confined space cover, or may fall into the confined space during entry.
 - b. Follow the RWU Manhole Cover Lift Policy if the confined space's entrance is a manhole (policy included with the paperwork packets kept in the four-gas meter storage cases).
 - c. Safely store any cover locks so they don't fall into the space before or during entry.
 - d. The guard can be a railing or other type of temporary barrier. Do not leave the space unattended once the cover has been removed.
5. Confirm that a potentially hazardous atmosphere is the only hazard in the space (e.g., no standing water, no ice on the entry ladder rungs or the floor of the confined space, no insect nests inside the confined space, etc.).
 - a. Document pre-entry conditions in the pre-entry section of the RWU entry form. Do not enter the confined space to inspect it – perform a visual inspection prior to entry, and use the borescope if necessary.
 - b. Conditions such as standing water in the confined space must be remediated prior to entry.
6. Confirm that the atmosphere is not hazardous and that all measured readings meet the acceptable entry criteria as listed on the entry certificate.
 - a. Make sure that the four-gas meter has been calibrated by EHS within the last 30 days (most recent calibration certificate is included with the meter). Allow the four-gas meter to stabilize in fresh air for three minutes prior to sampling. Record the fresh air readings.
 - b. Perform atmospheric testing in the confined space with the four-gas meter (oxygen, flammable gases (LEL – lower explosive limit), carbon monoxide, and hydrogen sulfide) and document the results in the air monitoring section of the entry form. Do not enter the confined space to perform this monitoring – use a sampling hose with the air monitor.
 - c. Entrants have the right to observe the testing and review the data prior to entering the space.
 - d. **Employees may not be in a confined space when a hazardous atmosphere is present!**
 - i. Continuous forced air ventilation may be used to maintain a non-hazardous atmosphere. Employees may not enter the space until the forced air ventilation has rendered the atmosphere non-hazardous.

- ii. Ventilation must be directed at the spaces where the employee will be working.
 - iii. Once continuous forced air ventilation has been employed, it must be used the entire time the entrant is in the confined space.
 - iv. The air supply for the ventilation system must be clean and the ventilation must not increase the hazards in the confined space.
 - v. RWU has an Allegro Industries axial blower with ducting that is available for ventilation use. It is stored in the confined space entry storage cabinet with the other entry equipment.
7. Confirm that all entry equipment is in good working order and is safe to use and set up properly.
8. Entrants may enter the space when a non-hazardous atmosphere has been achieved and documented. All entrants must wear a retrieval harness and must be attached to the retrieval line when entering or exiting the confined space. Entrants must wear a four-gas meter clipped to their harness at all times when inside the confined space (four-gas meter must have been calibrated by EHS within the past 30 days and be stabilized for three minutes in fresh air prior to use – record fresh air readings on the entry form). Entrants must periodically check the meter and confirm that a non-hazardous atmosphere still exists. Heavy or cumbersome tools and equipment must be lowered or passed down to the entrant once the entrant is in the space – entrants must not carry tools or equipment into the space if it affects their ability to safely enter the space.
9. Attendant will be responsible for scene safety and monitor the air inside the confined space with a four-gas meter attached to a sampling hose. All readings will be documented in the entry air monitoring section of the entry form.
 - a. If the atmosphere becomes hazardous at any point during the entry, the entrant will immediately exit the space. The entrant will not be allowed to re-enter the space until the cause of the hazardous atmosphere has been determined and the hazardous atmosphere has been eliminated. If the hazard cannot be eliminated, the entry form will be terminated and the confined space will be closed. No entries will be permitted until a non-hazardous atmosphere is achieved.
10. The entrant will immediately exit the confined space when the task is completed. Tools and equipment will be passed or raised up out of the space – entrants will not carry tools or equipment out of the space. The cover will be placed back onto the confined space prior to any other equipment being put away (employ the RWU Manhole Cover Lift Policy as necessary). The rest of the confined space entry equipment will be put away and returned to the storage cabinet in the Facilities Mechanical Maintenance Shop. Damaged equipment will be tagged with a sign stating “OUT OF SERVICE – DO NOT USE.” Damaged equipment must be reported via work order to EHS.
11. The supervisor will call Public Safety Dispatch at x3333 and notify the officer that the entry is complete.
12. The entry supervisor will sign off on the completed entry certificate and submit it to the RWU EHS office before the end of their shift.

IV. Confined Space Entry Team Job Duty Descriptions

RWU requires all RWU and RWU / contractor confined space entry teams to be comprised of at least two people, but teams may be comprised of as many people as are necessary to complete

the task safely and compliantly. The attendant may never enter the confined space, so if a second person is needed in the confined space, the entry team needs to have at least three members. If miscellaneous aboveground tasks would interfere with the attendant's ability to monitor the entrant (monitoring an aboveground panel, providing traffic control, fetching tools and equipment, etc.), then entry team needs to have at least three members, with the third member performing these miscellaneous tasks. The third member does not need to have confined space entry training, provided that they only perform these miscellaneous tasks (traffic control, fetching equipment, etc.) and do not perform any of the tasks listed in confined space entry team job duty descriptions listed below.

The three jobs below must be assigned to specific people on the entry team and noted on the entry form. The entrant or the attendant may also act as the supervisor; the entrant may not act as the attendant. The following job descriptions are taken from 29 CFR 1910.146(h) through (j).

Authorized Entrant – the person(s) entering the confined space

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
- Properly use equipment as required
- Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space (note communication method on the entry form – radios, voice, etc.).
- Alert the attendant whenever:
 - Entrant recognizes any warning sign or symptom of exposure
 - Detects a prohibited condition (i.e., a meter reading that is out of the acceptable entry conditions, the presence of a non-atmospheric hazard such as water flowing into the space, or non-acceptable weather conditions).
- Exit from the space as quickly as possible when:
 - An order to evacuate is given by the attendant or supervisor
 - Entrant recognizes any warning sign or symptom of exposure
 - Detects a prohibited condition

Attendant – the person(s) attending to and monitoring the entrant

- **Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants**
- **Remain outside the permit space during entry**
- 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
- Maintain accurate count of entrants if more than one entrant in the space, and record the means by which they are identified (different colored ropes, etc.)
- Communicate with the 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:
 - Detects a prohibited condition

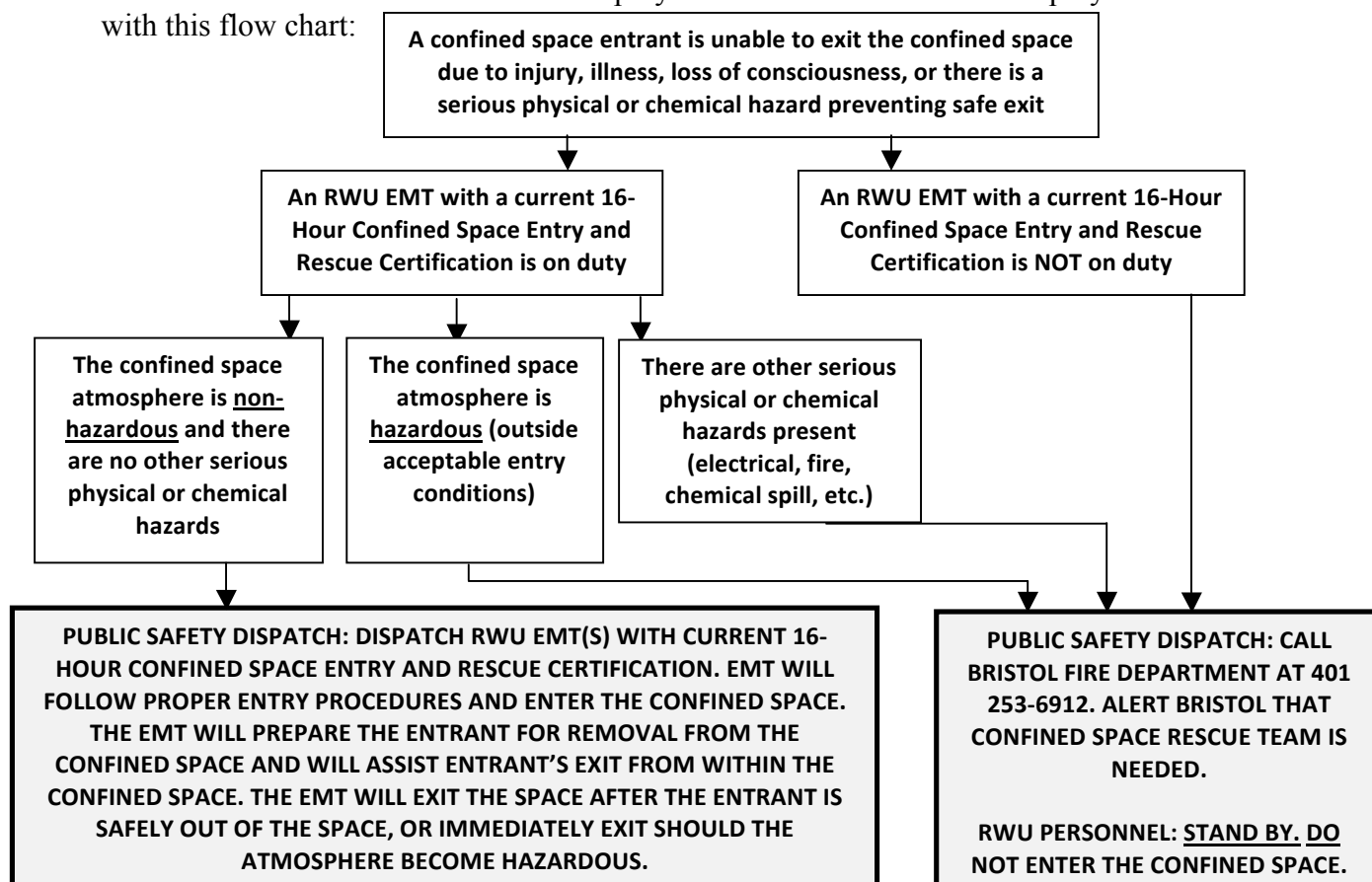
- Detects the behavioral effects of hazard exposure in an authorized entrant
- Detects a situation outside the space than could endanger the entrant
- Attendant becomes unable to perform duties required in this section
- Warn unauthorized persons that they must stay away from the confined space
- Advise unauthorized persons that they must exit immediately if they have entered the permit space, and inform the entrants and supervisor if this occurs
- Performs non-entry rescues (retrieval system – winch and tripod) as necessary

Supervisor – the person responsible for the overall safety and compliance of the entry

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure
- Verify that the entry form is completed correctly and completely and that all testing has been conducted accurately prior to allowing entry
- Remove unauthorized individuals who enter or attempt to enter the confined space
- Confirm that entry operations remain consistent with the terms of the entry form and that acceptable entry conditions are maintained
- Notify RWU Public Safety before and after the confined space entry
- Verify that the entry form has been completed correctly, and then submit the completed entry certificate to EHS prior to the end of his or her shift

V. Emergency Procedures

If there is a confined space entry-related emergency such that the entrant is unable to exit the space due to injury, illness, loss of consciousness, or a serious physical or chemical hazard preventing safe exit, the entry attendant will contact RWU Public Safety Dispatch and alert the officer that rescue services need to be deployed. Rescue services will be deployed in accordance with this flow chart:



EHS will perform the monthly four-gas meter calibrations and include the calibration certificates in the four-gas meter cases / blank paperwork packets. EHS will replace the four-gas meter sensors upon expiration (every two years in October).

The entry equipment (winch, tripod, harness, etc.) must be maintained in good working condition and inspected by the entry team before and after each use. Equipment that is not in good working order will not be used. It will be placed out of service and marked with signage stating “OUT OF SERVICE – DO NOT USE” to indicate that it is not working. The entry team supervisor must notify his or her supervisor and EHS via work order if the equipment is damaged or not working properly. The equipment will be evaluated by Facilities and EHS and repaired or replaced as is appropriate.