

THE CITADEL  
The Military College of South Carolina  
171 Moultrie Street  
Charleston, SC 29409

MEMORANDUM  
NUMBER (X)-(Y)

30 June 2017

**CONFINED SPACE**

**1. PURPOSE**

The purpose of The Citadel's Confined Space Program is to set procedures that will ensure employee's safe entry into defined confined spaces that include any permit-required confined spaces to perform routine tasks associated with their employment. This procedure is designed to provide the minimum safety requirements in accordance with both the State of South Carolina and Federal Occupational Safety and Health Administration's Confined Space Standard 29CFR1910.146.

**2. REFERENCE**

South Carolina OSHA 1910.146

Federal OSHA 29CFR1910.146

**3. DEFINITIONS**

**Confined Space** - Any enclosed or partially enclosed space that:

1. Is large enough, and so configured, that an employee can bodily enter and perform assigned work.
2. Has limited or restricted means for entry and exit.
3. Is not intended for continuous occupancy.

Confined spaces include but are not limited to manholes, vaults, boilers, pipelines, sewers, tunnels, silos, crawlspaces, steam pits, and vats.

**Non Permit-Required Confined Space** - A confined space that does not meet the criteria to be classified as a permit-required confined space (see below).

**Permit-Required Confined Space** - A confined space with one or more of the following characteristics:

1. Contains or has a known potential to contain a hazardous atmosphere. Three of the most common atmospheric conditions that constitute hazards are oxygen deficiency, presence of combustible gases and vapors, and

toxic gases and vapors.

2. Contains a material with the potential for engulfment of an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor which slopes downward and tapers to a smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

**Authorized Entrant** - An employee who has completed all required training and has been authorized by the employer to enter a permit-required confined space. Only employees who are trained as an entrant and have obtained a permit signed by the entry supervisor may enter a permit required confined space.

NOTE: *As a general rule, no Citadel employee will be allowed to enter any permit-required confined space at any time. Work that must be completed within a permit-required confined space will be performed by qualified outside contractors whenever possible.*

**Attendant** - An individual who is stationed outside one or more permit-required spaces and monitors authorized entrants.

NOTE: At least one attendant must be stationed outside a permit-required confined space any time the space is occupied.

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

**Entry Permit** – Means the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information required to make a safe entry.

**Entry Supervisor** - The entry supervisor is the department head, foreman, or supervisor responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry, for overseeing entry, and for terminating entry.

**Hazardous Atmosphere** – An atmosphere that may expose employees to risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL)

Airborne combustible dust at a concentration that meets or exceeds its (LFL)

Atmospheric oxygen concentration below 19.5% or greater than 23.5%.

Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control or Subpart Z, Toxic and Hazardous Substances, of this part and which could result in employee exposure in excess of its dose or permissible exposure limit.

Any other atmospheric condition that is immediately dangerous to life or health.

**Isolation** – Means 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 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.

**Permit System** – Means the written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of the entry.

**Rescue Service** – The personnel designated to rescue employees from a permit space (this could be outside services if onsite rescue is not available).

**Retrieval System** – The equipment (including a retrieval line, chest or full-body harness, wristlets, and a lifting device or anchor) used for non-entry rescue of persons from a permit space.

**Testing** – Means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

#### 4. POLICY

##### IDENTIFICATION OF PRCSs

A list of identified permit-required confined spaces found on The Citadel campus can be found at Attachment 1 to this document. Departments should contact the College's Director of Environmental Health and Safety (3-4816) to assist in the evaluation of other campus spaces, as necessary.

## WARNING SIGNS

Where practical, campus PRCs have been posted with warning signs identifying the space as one where known hazards are present; however, employees must not rely solely on the presence or absence of such signage when evaluating whether or not a space is safe for entry. All confined spaces should be evaluated for potential hazards prior to entry. The posted warning signs read:

**DANGER**  
**PERMIT-REQUIRED CONFINED SPACE**  
**DO NOT ENTER**

## EVALUATION OF PRCs CONDITIONS

Each PRCs must be evaluated to identify hazards; determine the severity the hazards; and establish control procedures and practices by which the space may be entered safely.

Before entry into a PRCs is authorized, the conditions within the space must be tested to determine if acceptable entry conditions exist. The space must be monitored during the course of entry operations to determine if acceptable entry conditions are being maintained. When testing for atmospheric hazards first test for oxygen deficiency, then for combustible gases and vapors, and then for toxic gases and vapors.

## PRE-ENTRY AND ENTRY PRACTICES & PROCEDURES

Each department or contractor who may find it necessary to enter any permit-required space is to develop written entry procedures and practices necessary for safe permit space entry. Such procedures must be approved by the Director of Environmental Health and Safety prior to entry. Practices and procedures to be addressed include:

1. isolation and control of hazardous energy;
2. ventilation;
3. providing barriers to protect entrants from external hazards; and,
4. verifying that conditions are acceptable for entry.

## LOCKING AND TAGGING

No work is to be performed until appropriate locking, tagging and/or isolation is accomplished to prevent the inadvertent actuation of operations or processes associated with the space which might expose employees to hazardous conditions.

## REQUIRED EQUIPMENT

The following equipment is to be provided and maintained to ensure their proper use:

1. testing and monitoring equipment
2. ventilating equipment
3. communications equipment
4. personal protective equipment
5. lighting equipment
6. barriers and shields
7. ladders
8. rescue equipment
9. other equipment necessary for safe entry

## PERMIT SYSTEM

Before entering a PRCS an authorized entrant must complete a "Confined Space Entry Permit" for approval by the entry supervisor. A copy must also be sent to the Health and Safety Office. The permit must include: identity of the space; purpose of entry; date and duration of entry; list of authorized entrants; eligible attendants and individuals to be in charge of entry; hazards of the PRCS; measures for isolation of the space; measures to control potential hazards; the acceptable entry conditions; testing and monitoring equipment and procedures; rescue services in the event of an emergency; rescue equipment to be provided on-site, if necessary; communication procedures between authorized entrants and attendants; and personal protective equipment.

## RESCUE TEAM

The City of Charleston Fire Department is the designated rescue team for emergencies that occur on The Citadel's campus. If an emergency arises that requires a rescue team, the City of Charleston Fire Department is to be contacted by calling 911.

## TRAINING

Employees who are assigned duties that may require entry into PRCS must receive training on confined space entry procedures, the permit system, and hazard recognition and control procedures. Authorized entrants, attendants, and supervisors in charge of entry are to receive training in their respective confined space duties and responsibilities. Training is to be provided: before employees are first assigned duties pertaining to PRCSs; whenever there is a change in assigned duties; whenever there is a change in PRCS operations that present a hazard about which an employee has not been trained; and whenever there are deviations from the entry permit procedures or inadequacies in the employees' use or knowledge of these procedures.

## REVIEW OF PRCS PROGRAM

Entry operations are to be reviewed when there is reason to believe that the measures taken may not protect the employees and at least annually. The program is to be revised to correct any deficiencies found.

## ENTRY INTO NON-PERMIT CONFINED SPACES

Prior to initiating entry into a non-permit required confined space, the supervisor of the employee(s) who will be entering shall evaluate the space for any potential hazards and mitigate those hazards before entry is made. If all potential hazards cannot be mitigated prior to entry, the space must be considered a permit-required confined space, and all entry procedures that apply to permit-required confined spaces must be followed.

Confined spaces with limited natural ventilation must be power ventilated with a blower (minimum capacity 750 cfm) operating at its maximum rated speed for a minimum of 5 minutes prior to entry. Larger confined spaces (greater than 1000 cubic feet) must be ventilated for at least 10 minutes. Once pre-entry ventilation is completed, the blower must remain in

continuous operation while the confined space is occupied; and, an attendant shall be stationed outside of the confined space to monitor the well-being of the employee(s) within.

## **5. COMPLIANCE**

Program needs to comply with all state, federal and municipal regulatory requirements.

## **6. NOTES**

### **A. Dates of Official Enactment and Amendments:**

Approved by "Responsible Official" on (Day) (Month) (Year).

For non-substantive changes, identify all dates of revision, if any, with a brief description of the changes.

### **B. Responsible Department:**

Facilities and Engineering

### **C. Responsible Official:**

Director of Environmental Health and Safety

### **D. Cross References:**

The Citadel's Confined Space Program dated 2009

## **7. RESCISSION**

None

## **8. REVIEW**

Annual

FOR THE PRESIDENT:

OFFICIAL

THOMAS G. PHILIPKOSKY  
Colonel (USAF, Ret)  
Vice President Operation

Attachment

Attachment 1, Listing of Confined Spaces on Campus



Attachment 1  
Identification of Confined Spaces

A survey of The Citadel Campus has identified the following areas that, unless the hazards are eliminated, are considered permit required confined spaces:

- (1) Sewer/Storm manholes
- (2) Electrical manholes
- (3) Most Steam pits
- (4) Central Utility Plant boilers
- (5) Telephone vaults
- (6) Several Water Pollution Control lift/pump stations
- (7) Water meter pits