Confined Space Entry Program

Keene State College Policies and Procedures

Confined Space Entry Program

Section Menu

1.1 General College Policy

1.1.1 The purpose of this program is to ensure that safe work practices are utilized during all activities regarding the permit space to prevent personal injuries and illnesses that could occur; and to inform interested persons, including employees, that Keene State College is complying with the OSHA Confined Space Standard, Title 29 Code of Federal Regulations 1910.146.

1.1.2 Keene State College needs written procedures for the evaluation of confined spaces, and where permit-required spaces are identified, we have developed and implemented a permit-required confined space entry program.

1.2 Responsibility

1.2.1 It is Keene State College’s responsibility to identify permit-required spaces on the premises, and provide training for our employees according to their responsibilities in the permit space. Employees receive instructions for safe entry into the specific type of confined spaces. These instructions cover testing and monitoring, appropriate personal protective equipment, rescue procedures, and attendant responsibilities. We emphasize personal responsibility for safety, and employees are authorized to stop a job due to safety hazards or concerns at any time.

1.2.2 If, after reading this program, you find that improvements can be made, please contact the Environmental Health and Safety Coordinator. We encourage all suggestions because we are committed to creating a safe workplace for all our employees and a safe and effective confined space entry program is an important component of our overall safety plan. We strive for

clear understanding, safe work practices, and involvement in the program from every level.

1.3 Scope & Application

1.3.1 This section contains requirements for practices and safe procedures to protect employees of Keene State College from the hazards of entry into non permit and permit required confined spaces.

1.3.2 This program applies to all work operations at Keene State College where employees must enter a non permit or permit-required confined space as part of their job duties. Employees must treat all confined spaces as a permit required confined space (PRCS), unless on site review by the EHS Coordinator indicates the space can be classified as a non permit confined space. In all cases, whether permit required or non permit required, the space must be initially checked for oxygen levels, as well as other toxic gases as outlined in Section 1.6.4, prior to entry.

1.4 Definitions

1.4.1 Confined Space (must meet all three criteria below):

1.4.1.1 Large enough to enter and perform work in

1.4.1.2 Has limited means of entry and exit

1.4.1.3 Is not designed for continuous human occupancy

1.4.1.4 Examples: tanks, pits, underground utilities, silo, sewer, trench, drained pool

1.4.2 Permit Required Confined Space (PRCS):

1.4.2.1 A confined space that contains or has the potential to contain serious safety or heath hazards where no special precautions are taken.

1.4.2.2 Examples of hazards: Engulfment, toxic atmosphere, oxygen deficient or enriched atmosphere, heat or cold stress, slipping hazards, being more than 20 feet away from the entry point, puzzling configurations, flammable or

explosive atmosphere, uncontrolled energy sources, etc.

1.4.3 Non-Permit Required Confined Space (NPCS):

1.4.3.1 A confined space that does not contain or potentially contain hazards that could cause death or serious physical harm

1.4.4 Enclosed Space:

1.4.4.1 A special classification of a PRCS, a working space, such as a manhole, vault, tunnel or shaft

1.4.5 Entry:

1.4.5.1 Occurs when any part of your body breaks the plane of the entry opening.

1.5 Hazard Evaluation for Confined Spaces

1.5.1 All spaces that are entered on Keene State College property will be evaluated to determine what kind of space they are. (Ex. permit required, non-permit required, enclosed)

1.5.2 The most typical confined space entry jobs at Keene State are entry into manholes (enclosed confined spaces) containing steam utilities. Routine maintenance is done twice per year when the steam supply is shut down and there are no heat hazards. Occasionally, entry must be made to make a repair when steam pipes are hot. In both cases, a permit confined space procedure will be applied.

1.6 Pre-Entry Evaluation

1.6.1 To ensure the safety and health of our employees, before allowing authorized workers to enter a permit space, the entry supervisor is required to perform a hazard assessment that evaluates conditions in that space to determine if the conditions are safe for entry.

1.6.2 Any employee, who enters the space, has the opportunity to observe the pre-entry atmospheric testing and any subsequent testing.

1.6.3 The authorized entrant also has the option of requesting a reevaluation of the space if they feel that the evaluation was not adequate.

1.6.4 The hazard assessment will include testing the internal atmosphere with a calibrated direct-reading instrument for oxygen content, flammable gases and vapors, and potential toxic air contaminants. These results must be documented on the permit. The space must also be checked for physical hazards, as outlined on the Pre-Entry Checklist Evaluation, such as electrical hazards, engulfment hazards, heat stress hazards/steam hazards, hazards from mechanical equipment, and other potential hazards. Supply lines, such as steam supply, must be isolated via Lock Out Tag Out procedures. Additionally, Lock Out Tag Out procedures must be applied to eliminate electrical and/or mechanical hazards, where present.

1.6.5 We also periodically test the atmosphere of the space to ensure that a hazardous atmosphere is not developing. This will be in written form, signed by the assessor, dated, and marked as to its location.

1.7 Equipment

1.7.1 Each authorized entrant will use a 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 which Keene State College can establish presents a profile small enough for the successful removal of the entrant.

1.7.2 An MSA gas detector, which tests oxygen levels, flammable limits, carbon monoxide, and hydrogen sulfide, is provided so employees can test the atmospheric conditions.

1.7.3 Ventilation will be used to provide fresh air in the space both to maintain a healthy atmosphere and to control heat/temperature. A blower will be set up with its intake located outside the confined space, away from operating equipment.

1.8 Preventing Unauthorized Entry

1.8.1 If a confined or enclosed space may be casually or inadvertently entered by employees, contractors, or the public it will be posted with a permanent warning sign or equally effective means of informing people of the hazard.

1.9 General Work Procedures

1.9.1 If required, rescue personnel shall be summoned in accordance with the local emergency response plan by dialing 911.

1.9.2 Prior to each job the entry supervisor will conduct a pre-job discussion, suring all personnel are trained and informed of potential hazards

1.9.3 The entry supervisor will complete a pre-entry evaluation as outlined in Section 1.6.

1.9.4 Whenever practical, eliminate known hazards prior to opening, testing, or entering a confined space. If this is not feasible or practical, then control measures, such as ventilation, must be implemented.

1.9.5 The probe from the 4 –gas monitor must be kept in the confined space at all times. If the instrument goes into an alarm condition, all entrants must exit the space immediately.

1.9.6 Gasoline or internal combustion engines should not be used in or near a confined space. If it is necessary to use this type of equipment, exhaust gases outside, and a safe distance from the space opening

1.9.7 Store combustible, flammable, and toxic materials in an orderly manner a safe distance away from a confined space opening. All efforts shall be made to ensure vapors from these materials do not enter the confined space

1.9.8 When necessary guard confined space openings with a railing, temporary covering, or other temporary barriers to prevent accidental falls and to protect employees from foreign objects entering the space. Never leave a confined space opening of this type unprotected

1.9.9 Ensure safety equipment is available and functional

1.9.10 Compressed gas bottles (Self Contained Breathing Apparatus

excluded) should not be stored or used near or in a confined space, unless required for the job and properly controlled

1.9.11 Additional controls must be used when volatile chemicals are present

1.9.12 Additional ventilation must be provided when performing actions that may make the atmosphere hazardous (welding, sanding, use of engines…)

1.9.13 Smoking is not permitted in any confined space

1.9.14 No source of heat or ignition may be introduced until the atmosphere has been found safe.

1.9.15 Hot work permit procedures must be followed prior to any welding work in a confined space.

1.9.16 Any entry into a confined space, after the previous entry has been concluded, requires a new pre-entry evaluation

1.9.17 During entry, timely communication will be made between the entrants and the attendant. This can be accomplished through frequent visual contact, radio communications, rope tug communication, or any other sufficiently safe means

1.9.18 If, after entry, atmospheric or physical conditions are observed which pose a serious or potentially serious safety or health hazard:

1.9.17.1 All entrants will leave the space immediately

1.9.17.2 The space will be evaluated to determine how the hazard developed, and if necessary, the space be reclassified

1.9.17.3 Measures will be implemented to protect personnel from the hazard(s) before subsequent entry takes place

1.10 Duties: Authorized Entrants

1.10.1 Those persons who have completed the training and are authorized to enter our permit spaces (authorized entrants) are assigned specific duties and responsibilities that they must perform when they work in the permit space. Their duties and responsibilities include:

1.10.2 Know the hazards that may be faced during entry

1.10.3 Each entrant shall be attached to a retrieval system unless it creates a greater hazard

1.10.4 Maintaining communication with the attendant

1.10.5 Recognizing the signs and symptoms of overexposure

1.10.6 Evacuate the space, as quickly as possible, whenever an order to evacuate is given, warning signs of overexposure are recognized, or an unsafe condition is detected

1.11 Duties: Attendants

1.11.1 Those persons who have completed the training and have been designated as permit space attendants are assigned specific duties and responsibilities, including:

1.11.2 Maintain position outside the entrance, at all times when personnel are in the space, unless relieved by a qualified attendant

1.11.3 Recognizing the signs and symptoms of over exposure

1.11.4 Preventing unauthorized entry into the space

1.11.5 Maintaining communication with the entrants

1.11.6 Implement emergency response/rescue when required

1.11.7 Ensure hazard control procedures are working, such as ventilation or lockout/Tagout

1.11.8 Be aware of conditions or changes that could adversely affect entrants

1.12 Duties: Entry Supervisors

1.12.1 Those persons who have completed the training and have been designated as permit space entry supervisors are assigned specific duties and responsibilities that they must perform in permit space job duties. They are in

charge of the completing the permit as well as:

1.12.2 Verify applicable Hazardous Energy Control Procedures for all serious safety and health hazards have been implemented

1.12.3 Ensure that the personnel responsible for opening the confined space have been informed of potential hazards

1.12.4 Coordinate the opening and initial testing of the confined space

1.12.5 Ensure that proper safety devices have been issued to assist the personnel in opening the space

1.12.6 Ensure forced ventilation is set up and operating (Note: Natural ventilation may be acceptable in place of forced ventilation if it can maintain safe atmospheric conditions)

1.12.7 Ensure that a rescue plan, appropriate for each serious safety and/or health hazard or potentially serious safety and/or health hazard has been developed for each PRCS being entered. The Keene Fire Department must be contacted prior to entry at the number written on the permit. (Note: a mechanical device shall be available to retrieve personnel entering a space over five feet in depth)

1.12.8 Authorize entry and…

1.12.8.1 Confirm that authorized entrants and attendants are on the permit

1.12.8.2 Post the entry permit near the opening of the confined space

1.12.8.3 Ensure continuous ventilation or continuous monitoring where required by the permit

1.12.9 Terminate the permit

1.12.10 Complete all paperwork, and retain after use

1.13 Rescue and Emergency Services

1.13.1 Keene State College utilizes the Keene Fire Department to perform rescue services in the event of a permit space emergency that requires

entrance into the space. Prior to all confined space entries, the entry supervisor must contact the Keene Fire Department and provide the location of the job and start time. The entry supervisor must contact Keene Fire Department to close the permit at the completion of work. This information must be documented on the permit.

1.13.2 Any rescuer will been trained, at a minimum, to:

1.13.2.1 Perform the assigned rescue duties. For Keene State College employees, if a person goes down in a confined space, the attendant immediately calls 911 for emergency rescue services. UNDER NO CONDITION SHOULD THE ATTENDANT ENTER THE SPACE.

1.13.2.2 Correctly use personal protective equipment (PPE) required for the job

1.13.2.3 Establish proficiency as an authorized entrant

1.13.2.4 Perform basic first-aid and cardiopulmonary resuscitation (CPR).

1.13.3 Keene State College also ensures that at least one member of the rescue team holds a current certification in first-aid and CPR.

1.13.4 Affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces will, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

1.14 Review-Procedures

1.14.1 To ensure that all employees participating in entry operations are protected from permit space hazards, Keene State College reviews the Confined Space Entry Program on a regular basis.

1.14.2 We use the retained canceled permits from the past 12 months within one year after each entry and revise the program as necessary.

1.14.3 Keene State College performs a single annual review covering all

entries performed during a 12-month period. If no entry is performed during a 12- month period, no review will be performed.

1.15 Enforcement

1.15.1 Constant awareness of and respect for confined space entry hazards, and compliance with all safety rules are considered conditions of employment.

1.15.2 Supervisors and individuals in the EHS Department reserve the right to issue disciplinary warnings to employees, up to and including