



CONFINED SPACE ENTRY PROGRAM

Rev. 9/03

I. PURPOSE

Many work places contain spaces that are considered to be "permit required confined spaces" or "non permit required confined spaces". Permit required confined spaces have configurations that can hinder the activities of any employee who must enter into, work in, and exit from them. In many instances, employees who work in permit required confined spaces also face increased risk of exposure to serious physical injury from hazards such as entrapment, engulfment, and hazardous atmospheric conditions.

To reduce the risk to life and health of Community College of Spokane (CCS) employees, and to comply with chapter 296-62-145 WAC, Part M, "Confined Spaces," the requirements in this program will be followed by CCS employees required to enter any area which meets the definition of a confined space.

It is the desire of CCS that all employees required to enter confined spaces will be protected from the hazards which may result from the entry. Management is responsible for procedures, training, and planning for entry into confined spaces. These include spaces that present a hazard due to toxicity, flammability, oxygen deficiency/excess, mechanical, electrical or other recognized safety hazards.

Those college areas which fall under the definition of a permit required confined space have been identified (see page 17) and appropriate precautions for entry into these confined spaces must be taken, according to procedures outlined in this document.

II. PLAN MAINTENANCE

Because conditions change and new confined spaces can be found, evaluation of existing and potential confined spaces is an ongoing process. The CCS Environmental Health & Safety Office has responsibility for annual review and maintenance of this written program.

CCS Supervisors have the responsibility to remain alert to the potential for confined spaces which have not previously been identified at CCS and should notify the CCS Environmental Health & Safety Office (533-8623) of their existence, and the need for evaluation and identification.

III. DEFINITIONS

- A. "Acceptable entry" means the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.
- B. "Attendant" means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.
- C. "Authorized entrant" means an employee who is authorized by the employer to enter a permit space.
- D. "Blanking or blinding" means the absolute closure of a pipe or line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipeline, or duct with no leakage beyond the plate.
- E. "Confined Space" means a space that:
 - 1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
 - 2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
 - 3. Is not designed for continuous employee occupancy.
- F. "Double block and bleed" means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

- G. "Emergency" means any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.
- H. "Engulfment" means the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.
- I. "Entry" means 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.
- J. "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 specified in WAC 296-62-14509.
- A. "Entry Supervisor" means the person (such as the employer, crew leader, or crew chief) 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 required by this part.

Note: An entry supervisor also may serve as an attendant or as an authorized entrant. Also, the duties of the entry supervisor may be passed from one individual to another during an entry operation.

- L. "Hazardous Atmosphere" means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:
 1. Flammable gas, vapor, or mist in excess of ten percent of the lower flammable limit (LFL);
 2. Airborne combustible dust at a concentration that meets or exceeds its LFL;
 3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
 4. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Chapter 296-62 WAC, and which could result in employee exposure in excess of its dose or permissible exposure limit;
 5. Any other atmospheric condition that is immediately dangerous to life or health.
- M. "Hot Work Permit" means the employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.
- N. "IDLH" means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.
- O. "Inerting" means the displacement of the atmosphere in a permit space to such an extent that the resulting atmosphere is noncombustible.
- P. "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 such means as: Blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleeding system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.
- Q. "Line breaking" means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.
- R. "Nonpermit Confined Space" means 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.
- S. "Oxygen deficient atmosphere" means an atmosphere containing less than 19.5 percent oxygen by volume.

- T. "Oxygen enriched atmosphere" means an atmosphere containing more than 23.5 percent oxygen by volume.
- U. "Permit required confined space" means a confined space that 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;
 3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly conveying walls or by a floor which slopes downward and tapers to a smaller cross-section; or
 4. Contains any other recognized serious safety or health hazard.
- V. "Permit required confined space program" means the employer's overall program for controlling, and where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.
- W. "Permit system" means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.
- X. "Prohibited condition" means any condition in a permit space that is not allowed by the permit during the period when entry is authorized.
- Y. "Rescue service" means the personnel designated to rescue employees from permit spaces.
- Z. "Retrieval system" means the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and lifting device or anchor) used for nonentry rescue of persons from permit spaces.
- aa. "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.

IV. **RESPONSIBILITIES**

CCS shall ensure that:

1. The workplace has been evaluated to determine those spaces that are permit-required confined spaces.
2. Danger signs are posted, warning of the existence and location of each permit confined space (e.g. "Danger-Permit-Required Confined Space, Do Not Enter").
3. Personnel assigned to work in permit spaces are properly trained and qualified for safe performance of their assigned duties.
4. All equipment needed for safe entry into any permit space and non-permit space is available and in proper working order.
5. A copy of each cancelled entry permit will be on file at the EHS office for the twelve months as required by law.
6. A space classified by CCS as a permit-required confined space may be reclassified as a non-permit confined space under the following procedures:
 - (a) If the permit space poses no actual or potential atmospheric hazard and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

(b) If it is necessary to enter permit space to eliminate hazards, such entry shall be performed for unknown or known hazards. If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

(c) CCS will document the basis for determining that all hazards in a permit space have been eliminated, through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification will be made available to each employee entering the space.

(d) If hazards arise within a permit space that has been declassified to a non-permit space under this subsection, each employee in the space will exit the space, in accordance with other applicable provisions of this part.

7. Requirements and procedures for confined space entry at CCS by employees of another employer (contractor, etc.) are outlined in section VIII of this manual.

Authorized Entrant:

Each authorized entrant shall be responsible for:

- Having knowledge of the hazards and potential hazards associated with the specific permit space, including information on the mode, signs or symptoms, and consequences of the exposure.
- Properly using equipment which is necessary for safe entry operation.
- Maintaining communication with the attendant as necessary to enable attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required by this plan.
- Alerting the attendant whenever the entrant recognizes any warning signs or symptoms of exposure to a dangerous situation or the entrant detects a prohibited condition.
- Exiting from the permit space as quickly as possible whenever an order to evacuate is given by the attendant or the entry supervisor.

NOTE: "Authorized Entrant" and "Confined Space Entry Supervisor" responsibilities may be assigned to the same individual.

Authorized Attendant:

The attendant shall be responsible for:

- Having knowledge of the hazards and potential hazards associated with the specific permit space, including information on the mode, signs or symptoms, and consequences of the exposure.
- Being aware of possible behavioral effects of hazard exposure in authorized entrants.
- Maintaining an accurate count of authorized entrants in the permit space.
- Remaining outside the permit space during entry operations until relieved by another authorized attendant.
- Communicating with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space under subsection (6) of this section;
- Monitoring activities inside and outside the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:
 - (a) if the attendant detects a prohibited condition;
 - (b) if the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
 - (c) if the attendant detects a situation outside the space that could endanger the authorized entrants; or
 - (d) if the attendant cannot effectively and safely perform all the duties;
- Summoning rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.
- Performing no other duties that might interfere with the attendant's primary duty to monitor and protect authorized entrants.

NOTE: "Attendant" and "Confined Space Entry Supervisor" responsibilities may be assigned to the same individual. It is recommended that the attendant be certified in First Aid/CPR.

Entry Supervisor:

A specific, qualified individual will be assigned responsibility for the safety of entry, which includes preplanning, evaluation, coordination, oversight and implementation of the specific confined space entry. At CCS, this individual is required to complete the "Confined Space Entry Permit" routing copies as indicated on the form.

As defined by WAC 296-62-14501, entry supervisors also may serve as an attendant or as an authorized entrant, if that person is trained and equipped as required by the program. The duties of the entry supervisor may be passed from one individual to another during an entry operation.

V. **REQUIRED EMPLOYEE TRAINING**

CCS will provide training so that all employees whose work is regulated by this plan acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this part. This training will be provided by the CCS Environmental Health and Safety office or other qualified individuals.

Training will be provided to each affected employee:

- a. Before the employee is first assigned duties under this section;
- b. Before there is a change in assigned duties;
- c. Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;
- d. Whenever the employer has reason to believe that there are deviations from the required permit space entry procedures, or that there are inadequacies in the employee's knowledge or the use of these procedures.

The training will establish employee proficiency in the duties required under the confined space entry program and will introduce new or revised procedures, as necessary, for compliance. Training will consist of the following elements, as appropriate:

1. confined space hazard recognition
2. CCS confined spaces and any associated hazards
3. personal protective equipment use, which may, as appropriate, include *respirator training
4. use of powered ventilation equipment
5. operation/use of air monitoring equipment
6. operation/use of retrieval system (e.g., body harness and attached lifeline)
7. lockout/tagout/blockout procedures
8. practice use of all emergency/rescue and support equipment

In addition, on the job training specific to each entry, will be provided by a qualified individual (e.g., the employee's supervisor or the designated confined space entry coordinator).

***Note:** Respirator training and fit testing is provided **only** by the CCS EH&S Office. Respirator usage requires that the employee be clean-shaven where the respirator sealing surface will come in contact with the surface of the individual's face at the time of the respirator fit testing and any time existing hazardous conditions require that a respirator be worn for employee protection.

CCS will certify that the training required by the above items of this section have been accomplished. The certification (training roster) will contain each employees name, the signatures or initials of the trainers, and the dates of training. The certification will be available for inspection by employees and their authorized representatives.

VI. **PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURES**

1. **PREPLANNING**

Preplanning, per guidelines provided within this document and as summarized on the "Confined Space Entry Permit" will occur prior to any confined space entry. Preplanning is the responsibility of the assigned confined space entry supervisor, and shall include, as a minimum, each of the following elements:

- A. Inspect entry site for any potential **exterior** hazards and implement measures to prevent unauthorized confined space entry.
- B. Evaluate and analyze potential hazards of the specific confined space and planned work before employees enter the space.
 - atmosphere evaluation (oxygen deficiency/rich; toxic/flammable gas environment) in all areas where employees may be exposed
 - presence of temperature extremes, noise, or ionizing radiation
 - presence of electrical and/or mechanical hazards
 - need for hot work within the confined space
 - need for use of toxic or flammable materials within the confined space
- C. Determine staffing needs and confirm qualifications of each member of the confined space entry team.
 - 1. Assign confined space entry supervisor and other team members, as appropriate for the specific entry.
 - 2. Determine their qualifications, including completion of required training.
 - 3. Assign specific responsibilities to each team member.
- D. Determine safety equipment items that will be required for safe entry. Gather equipment, and verify that it is in satisfactory condition.
- E. Lay out traffic control and warning equipment (e.g. barricades, signs, etc.) as appropriate.

2. DETERMINE EQUIPMENT NEEDS

The confined space entry supervisor will determine equipment needs, material needs, and miscellaneous supplies needed for safe entry.

Mandatory:

- atmospheric testing equipment
- ventilation equipment (exception: SFCC utility tunnels, CCS electrical vaults, CCS communication vaults, & CCS water vaults)
- hand-held communications radio
- flashlight or other form of emergency backup lighting
- safety harness & retrieval system with attached lifeline
(exception: SFCC utility tunnels and CCS electrical vaults)
- traffic warning equipment and confined space barricades

As needed and appropriate:

- forced mechanical ventilation
- bucket or similar device for movement of tools (e.g., lowering), when feasible
- escape breathing apparatus
- respirators for SFCC tunnels
- eye and/or hand protection
- fire extinguishing equipment (immediately available, as needed)
- hard hat or bump hat

In selection of required tools and equipment, consideration should be given to the following:

- devices capable of producing a spark are not allowed in a confined space area unless specifically needed for hot work
- all tools and lighting must be explosion proof when working where flammable atmospheres are possible
- all electrical equipment used in wet areas must be grounded (GFCI)
- portable electric tools must be grounded or isolation transformers, ground fault interrupters, or double-insulated tools are required
- where potentially hazardous concentrations of flammable vapors, gases or dusts are present or may develop, electric supply circuits, lighting, portable tools, and other equipment used shall conform to chapter 296-24 WAC Part L.

3. GUARDING ENTRANCE TO CONFINED SPACE

The confined space entry supervisor will ensure that when the entrance covers of a confined space are removed, the opening will promptly be guarded with a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.

4. ATMOSPHERIC TESTING

The confined space entry supervisor will evaluate and analyze potential hazards of the specific confined space, including any unplanned events or actions, specific to the contemplated confined space entry, which could require alteration of the plan.

- A. Before an employee enters the space, the internal atmosphere will be tested with a calibrated direct-reading instrument, for the following conditions in the order given:
 - Oxygen content range between 19.5% and 23.5%
 - Flammable gases or vapors in excess of 10% of the LFL
 - Potential toxic air contaminants
- B. Evaluation will be made **immediately prior to entry and during occupation** at intervals dependent on the possibility of changing conditions.
- C. When testing spaces where employee descent is involved with entrance, the CCS testing equipment will be lowered slowly, by connecting it to a rope line testing for potential stratified layers of the confined space atmosphere.
- D. Employees will not be permitted to enter atmospheres in a confined space which has contained toxic, flammable or corrosive materials or which may have had such materials accidentally introduced or generated until such space has been evaluated and/or tested by a competent person who will declare the space safe for entry.
- E. Evaluation will consider such factors as degree of toxicity, flammability, oxygen deficiency, noise, temperature, vapor pressures, adsorption on surface, absorption in surfaces, sludges, residue and ventilation rates. Determine type and extent of contamination, including gases, liquids, sludges, residues or absorbed and/or adsorbed materials.
- F. Failure of the testing device to alarm indicates no hazardous conditions above threshold limit values; entry is permitted. If one or more of the testing device alarms is activated, entry is **not** permitted.
- G. If gases are detected, add mechanical ventilation and continue to purge the area until you get a zero reading or less than 10% LFL.
 - * Once ventilation has occurred, tests have confirmed it is safe to enter, and entry has been made, take additional tests of all levels and areas, including outside of openings.
- I. Continue to test periodically throughout the procedure (minimum of twice an hour). Evacuate immediately if contaminants rise above 10% LFL, or if oxygen levels are below 19.5% or above 23.5% by volume.

5. FORCED MECHANICAL VENTILATION

Forced ventilation will be maintained at all times when employees are in permit confined spaces except when the atmosphere has been purposely inerted (brought to a point where it exhibits no chemical activity and is completely unreactive) to provide safe working conditions. Only a clean, fresh air supply, which is clear of any type of exhaust vapors or gases, shall be used. Oxygen shall never be used for ventilation. All work will stop, and the area must be evacuated if ventilation fails.

Ventilation Exceptions: CCS electrical vaults & SFCC utility tunnels, by the nature of their design and physical characteristics, make the use of forced ventilation not feasible. Procedures for the use of forced mechanical ventilation include:

- A. Position the blower intake in a manner that will prevent recirculation of exhausted contaminated air, or introduction of contaminants from outside the confined space--i.e., gas unit placed down wind from space to prevent exhaust from entering space and/or upwind from any sources of exhaust or fumes and off the ground to avoid pulling up debris.
- B. To flush the hose, operate the equipment for at least one minute prior to ventilating. Ventilate the space for a minimum of 5 air changes or 5 minutes.
- C. Position the hose, with no unnecessary bends, to purge (purify) the entire area prior to entry. Purge the enclosed space for at least five minutes, or five air exchanges.
- D. Following ventilation/purging procedures (steps #A-C, above), retest the atmosphere prior to entry.

Even if all tests are within allowable limits, the space will be purged with mechanical ventilation consisting of a fresh supply of air. If there is any doubt as to the validity of evaluation, the hazard will be assumed to be high, and personal protective equipment or measures used accordingly.

6. POSTING CONFINED SPACE PERMIT

All permit required confined spaces must have the permit posted outside the space for the duration of the work shift on that specific job. If a change in shift personnel occurs, the original permit is null & void and new entry procedures must be completed before entering the space.

Posting permit exceptions: Four (4) SFCC utility tunnels have been reclassified as "non-permit required confined spaces" because they do not have the potential to contain any hazard capable of causing death or serious physical harm: Building 1 tunnel, Building 3 tunnel, Building 4 tunnel and Building 14 tunnel are non-permit required spaces. When entering these tunnels, an entry permit system is not needed.

7. ENTRY INTO CONFINED SPACES

After initial cleaning, vapor freeing, and evaluation of the atmosphere, the confined space may be entered to complete maintenance and repair work.

- A. Respiratory protective equipment will be used when indicated.
- B. An observer/attendant capable of maintaining communication at all times will be located outside the confined space at all times while employee/s are in the space, and will perform no other duties that interfere with primary duties of the attendant.
- C. If required, entrants will wear a full-body harness, attached lifeline, and a retrieval system as a means of rescue.
- D. Fire extinguishing equipment will be immediately available when indicated.
- E. Ventilation will be maintained at all times when employees are in confined spaces except when the atmosphere has been purposely inerted to provide safer working conditions. All work will stop and the

area will be evacuated if ventilation fails.

- F. All tools and equipment will be available as required.
- G. Emergency lighting will be available as required.
- H. The area will be evacuated if any indication of ill effects such as dizziness, irritation or excessive odors are noted.
- I. When leaving the space after work has been completed, the entry permit will be canceled.

8. EMERGENCY RESCUE PROCEDURES

- A. A rescuer must have self-contained breathing apparatus (SCBA) prior to entry, and is never to enter unless other personnel are alerted to assist. (Note: Half of all fatalities in confined spaces occur to rescuers without SCBA's. CCS has no SCBA's.)
- B. Never enter a confined space if it appears the workers are unconscious or if the workers do not respond to outside stimuli such as verbal orders or signals.
- C. If worker is in trouble, hoist immediately until person is in fresh air.
- D. Once victim is away from opening, immediately start first aid and/or CPR (as applicable).
- E. Immediately call **911** for emergency services (as appropriate to the situation).
- F. Inform Facilities at 533-8630 of the situation.

9. SPECIAL CONDITIONS AND REQUIREMENTS

A. **ATMOSPHERES WHICH ARE OXYGEN DEFICIENT OR RICH**

- a. Atmospheres having an oxygen content less than 19.5 percent at sea level (this may deviate at higher elevations) shall not be entered without first ventilating to bring the oxygen level up to an appropriate level of 19.5% minimum or without approved respiratory protective equipment which will provide an adequate supply of breathing air. **NEVER VENTILATE WITH OXYGEN!**
- b. Atmosphere having an oxygen content over 23.5% is an oxygen enriched atmosphere and will not be entered. These areas shall be ventilated with fresh air until the oxygen level reaches approximately 21%.
- c. In an oxygen enriched atmosphere, once the level of oxygen is lowered, continuous ventilation will be maintained per outline ventilation procedures in this section, along with additional air monitoring.

B. **TOXIC/FLAMMABLE GAS ENVIRONMENTS**

- a. Atmospheres where contamination is below the permissible exposure limits (PEL) as defined in WAC 296-62 may be entered without respiratory protection.
- b. Atmospheres where contamination is above the permissible exposure limits but below values immediately hazardous to life or health may be entered when appropriate respiratory protective equipment as defined in the applicable provisions of WAC chapter 296-62 is worn. (Must be evaluated on a case-by-case basis.) At CCS, only authorized personnel (those individuals who have been trained, fit tested, and certified to wear respirators) may use respirators.
- c. Atmospheres which contain or could contain flammable gases or vapors shall not be entered if the concentration of gases or vapors in any part of the area is more than 10% of the lower flammable limit (LFL) except in the event of an emergency and then only when employees are protected by equipment

approved for such exposures.

d. Atmospheres immediately dangerous to life and health (IDLH) may be entered only in the event of an emergency and then only when employees are protected by equipment approved for such exposures. (Note: at time of printing of this document, CCS does not have the proper equipment for entry into an IDLH area.)

e. If gases are detected, purge the space until a zero reading is obtained or one less than 10% LFL or less than the PEL, if possible. In such cases, an additional reading should be taken at least every hour. Any time the concentration exceeds 10% LFL or PEL, operations will cease. When equipped with devices which permit monitoring without entering the confined space, standby person should make frequent tests.

f. Atmospheres where the toxicity is not known shall require full protection. Because CCS does not have the proper equipment for full protection, this type of area cannot be entered.

g. Entry into spaces which contain or could contain corrosive chemicals or chemicals which are toxic through skin absorption will require use of equipment to prevent skin and/or eye contact.

h. In the event that the air may be diluted by an unknown gas, the atmosphere shall be considered highly toxic and/or flammable.

i. Non-ferrous metal tools that will not produce an accidental spark will be used in spaces which previously contained flammable vapors. Additionally, explosion proof electrical tools and equipment, with ground fault circuit interrupters (GFCI), shall be used in these spaces.

j. Where atmospheres are known to contain flammable or toxic material, efforts to remove the flammable or toxic material will be made, as outlined below:

- Remove all possible liquid product, sludge or residue if present by draining, pumping or washing as applicable. Dispose of solid, liquid or gaseous materials in a manner which will not cause air or water pollution, a fire hazard or endanger workers or equipment.

- Vent any pressure as required.

- Isolate tank or confined space from all potential sources of hazardous materials by one of the following:

- 1) Remove a valve, spool piece, or expansion joint and cap open ends, and tag it.

- 2) Insert a blank in the lines (both inlet and outlet) to prevent back flow, and tag it.

k. Atmospheres which contain or could contain flammable gases or vapors will not be entered if the concentration of gases or vapors in any part of the area is more than 10% of the lower flammable limit except in the event of emergency and then only when employees are protected by equipment approved for such exposures.

10. PROCEDURES FOR CONTRACTORS & CCS CONFINED SPACES

When CCS (host employer) arranges to have employees of another employer (contractor) perform work that involves permit space entry, CCS shall:

- (1) Inform the contractor that the workplace contains permit spaces and that the permit space entry is allowed only through compliance with a permit space program meeting the requirements of this part;

- (2) Apprise the contractor of the elements, including the hazards identified and CCS experience with the space that makes the space in question a permit space;

- (3) Apprise the contractor of any precautions or procedures that CCS has implemented for the protection of employees in or near the permit spaces where contractor personnel will be working;
- (4) Coordinate entry operations with the contractor, when both CCS personnel and contractor personnel will be working in or near permit spaces; and
- (5) Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

In addition to complying with the permit space requirements that apply to all employers, each contractor who is retained by CCS to perform permit space entry operations will:

- (1) Obtain any available information regarding permit space hazards and entry operations from CCS;
- (2) Coordinate entry operations with CCS, when both CCS and contractor personnel will be working in or near permit spaces; and
- (3) Inform CCS of the permit space program that the contractor will follow and any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

11. RECORD KEEPING

All required confined space permits will be sent to the CCS EH&S office at MS 1016 after the entry has been terminated and the confined space is closed. Annual review of the CCS confined space program, including all permits, is required and is the responsibility of the CCS EH&S office.

VII. HOT WORK REQUIREMENTS

For any work within a confined space involving burning, welding, riveting, or similar fire-producing operations, including work which produces a source of ignition such as drilling, abrasive blasting, and space heating, completion of a hot work permit is required prior to entry, and procedures, as outlined below will be followed.

- A. A hot work permit will be completed prior to any "Hot Work". Record of the Hot Work permit shall be kept with the completed "Confined Space Permit" form.
- B. Any hot work involving sources of ignition and including welding and burning shall require positive assurance that fire hazards and flammable atmospheres have been controlled. Combustible material will be protected.
- C. The atmosphere will be tested by a combustible gas indicator and/or other device as indicated. Tests will be made frequently enough to assure that safe conditions prevail.
- D. Where hot work involves the generation of toxic gases, vapors, or fumes, local exhaust and/or respiratory protection is required.
- E. Compressed gas cylinders will not generally be allowed in confined spaces. Compressed gas lines will be protected from rupture or damage.
- F. Compressed gas cylinders or electric generators are to be attended at all times. Sources of compressed gases or arc welding power will be turned off immediately when an emergency arises or when work is interrupted or completed.
- G. Due to the ignition source created by hot work, all combustible materials will be located away from the work area. Appropriate fire extinguishers will be located at the site.
- H. The atmosphere will be tested by a combustible gas indicator and/or other device as indicated. Tests will be made frequently enough to assure that safe conditions prevail

- I. Where hot work involves the generation of toxic gases, vapors, or fumes, local exhaust and/or respiratory protection will be worn.

VIII. **RESCUE AND EMERGENCY SERVICES**

Currently CCS does not have the proper rescue breathing apparatus to perform emergency rescues. No attendant should ever enter a permit required confined space.

CCS outside rescue service (Spokane Fire Department) will practice making permit rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from permit spaces or from representative permit spaces.

Because CCS is required to arrange to have persons other than CCS employees perform permit space rescue, CCS has:

- (a) Informed SFD rescue service of the types hazards they may confront when called on to perform rescues at CCS and;
- (b) Provided the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

To facilitate non entry rescue, retrieval systems or methods will be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk on entry or would not contribute to the rescue of the entrant. Retrieval systems will meet the following requirements:

- (a) Each authorized entrant will use a full-body harness, with a retrieval line attached at the center of the entrant's back near the shoulder level, or above the entrant's head.
- (b) The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device will be available to retrieve personnel from vertical type permit spaces more than five feet deep.

If an injured entrant is exposed to a substance for which a material safety data sheet (MSDS) or other similar written information is required to be kept at the work site, that MSDS or written information will be made available to the medical facility treating the exposed entrant.

VIII. **ALTERNATE ENTRY PROCEDURES:**

Where it can be demonstrated that a permit space has as its only hazard, an actual or potential hazardous atmosphere, alternate procedures for entry may be used. These alternate procedures do not require the implementation of a permit required confined space plan if inspection and monitoring document that forced air ventilation alone is sufficient to maintain the permit spaces safe entry.

CONFINED SPACES AT COMMUNITY COLLEGES OF SPOKANE

Location	Type of Space	Potential Hazard(s)	Minimum Staffing/Equipment Requirements	I.Procedure
SFCC/SCC	Water vaults	oxygen deficiency	1 entrant, radio/cell-phone, flashlight. Recommended: gas meter, ventilation system	No entry permit required if no hazard exists. Can be re-classified as "non-permit".
SFCC/SCC	Communication vaults	oxygen deficiency	1 entrant, radio/cell-phone, flashlight. Recommended: gas meter, ventilation system	No entry permit required if no hazard exists. Can be re-classified as "non-permit".
SFCC	Utility Tunnel system	hazardous atmosphere due to presence of natural gas lines (Building 5, 6, and 8)	1 attendant, 1 entrant, radio/cell-phone, flashlight, gas meter. Recommended: escape respirator	No entry permit required for the "non-permit" utility tunnels (Bldg. 1, 3, 4, 14)
SFCC/SCC	Electrical vaults	electrical hazards oxygen deficiency	1 attendant, 1 entrant, radio/cell-phone, flashlight, gas meter. Recommended: escape respirator, ventilation system	No entry permit required if no hazard exists or hazard can be eliminated. Can be re-classified as "non-permit".
SFCC/SCC	Sewer vaults "permit"	hazardous atmosphere oxygen deficiency	1 attendant, 1 entrant, radio/cell-phone, flashlight, gas meter, escape respirator, ventilation system, harness/lifeline & winch.	Follow confined space entry procedures
SFCC/SCC	Dry wells "permit"	hazardous atmosphere oxygen deficiency	1 attendant, 1 entrant, radio/cell-phone, flashlight, gas meter, escape respirator, ventilation system, harness/lifeline & winch.	Follow confined space entry procedures
SCC	Pool mechanical room pit "permit"	hazardous atmosphere oxygen deficiency	1 attendant, 1 entrant, radio/cell-phone, flashlight, gas meter, escape respirator, ventilation sys.	Follow confined space entry procedures