# Confined Space Entry & Tunnel Safety Plan – Appendix A: Definitions

**Acceptable entry conditions:** The conditions that must exist in a permit-required confined space to allow safe entry and work.

**Atmospheric hazard** (see the definition of hazardous atmosphere).

**Atmospheric testing** – The process of identifying and evaluating the atmospheric hazards that entrants may be exposed to in a permit-required confined space. Atmospheric testing includes specifying the initial tests that are to be performed in the permit space. (See also "monitor or monitoring")

> **Note:** Testing enables PCC both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to and during entry.

**Attendant** - An individual stationed outside one or more permit-required confined spaces to monitor the authorized entrants and who performs all the assigned duties of an attendant in PCC's *Confined Space Entry* program.

**Authorized** – Approved by PCC or the controlling contractor.

**Authorized entrant** – An employee who is authorized by PCC to enter a permit-required confined space.

**Barrier** - A physical obstruction that blocks or limits access.

**Blanking or blinding** – The absolute closure of a pipe, 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 pipe, line or duct with no leakage beyond the plate.

**Calibration** – The checking of a direct-reading instrument against an accurate standard (such as a calibration gas) to determine any deviation and correct for errors.

> **Note:** A similar process may also be referred to as a "bump test" in which an instrument is tested with an accurate standard to ensure it is still reading correctly. For the purposes of this procedure, a "bump test" performed in accordance with the manufacturer's instructions can be used to verify calibration.

**Cancelled permit** – A permit where the permit-required confined space entry operation needed to be stopped before the work was completed due to an unforeseen condition or event.

**Competent** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

**Completed permit** – A permit where the work was carried out to completion with no interruptions or hazards arising.

**Configuration** – The internal shape or size of a space.

**Confined space** – A space that meets all of the following conditions:

- It is large enough and so configured that an employee can fully enter the space and perform work.
- It has limited or restricted means for entry and/or exit.
- It is not designed for continuous human occupancy.

**Continuous system** – A confined space that meets all of the following:

- It is part of, and contiguous with, a larger confined space (for example, storm sewers, sanitary sewers, or steam tunnels)
- It is subject to a potential release from the larger confined space that can overwhelm control measures and/or personal protective equipment, resulting in a hazard that is immediately dangerous to life and health.

**Contractor** – An outside company or individual, such as a general contractor or subcontractor, hired to do different kinds of new, repair, and/or maintenance work on a PCC campus or center.

**Control or controlling** – Authority to regulate, direct or influence.

**Controlling contractor** – The employer that has overall responsibility for construction at a worksite.

> **Note:** A controlling contractor who owns or manages a property is both a controlling contractor and a host employer.

**Double block and bleed** – 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.

**Dual-permitting -** a condition in which both PCC employees and contractor personnel enter the same permit-required confined space at the same time. Such occurrences dictate the use of Form 2 as well as the contractor's permit.

**Emergency** - Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger entrants.

**Engulfment hazard** – A physical hazard consisting of a liquid or flowable solid substance that can surround and capture an individual. Engulfment hazards may cause death or serious physical harm if: the individual inhales the engulfing substance into the respiratory system (drowning, for example); the substance exerts excessive force on the individual's boy resulting in strangulation, constriction, or crushing; or the substance suffocates the individual.

**Entrant** (see the definition of *authorized entrant*).

**Entry** – The action by which any part of an employee's body breaks the plane of an opening into a permit-required confined space. Entry (or entry operations) also refers to the period during which an employee occupies a permit-required confined space.

**Entry Permit (Permit)** – Written authorization from PCC, the controlling contractor, or host employer to enter a permit-required confined space and perform work.

**Entry Rescue -** Retrieval of entrants from a permit-required confined space that involves a rescuer entering the space.

**Entry Supervisor** - The person (such as the employer, foreman, or crew chief, or any other designated employee) responsible for;

- Determining if acceptable entry conditions are present at a permit-required confined space where entry is planned;
- Authorizing entry and overseeing entry operations;
- Terminating entry as required

**Expired Permit** – A permit where the confined space entry operation exceeded the allotted window specified on the permit due to delay or other circumstances.

**Flammable (Explosive) Atmosphere or Hazards** – A flammable or explosive atmosphere contains gases, vapors or dusts in concentrations greater than 10% of the lower flammable limit (LFL) or lower explosive limit (LEL), which is high enough to ignite or explode. Common flammable atmospheres include methane gas, solvent vapors from tank residues, or combustible dusts.

**FMS**—The College's Facilities Management Service department.

**Hazard** - For the purposes of this plan, hazard means a physical hazard or hazardous atmosphere.

**Hazard control** – The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by isolation or ventilation), and then using these methods to maintain the reduced hazard level. Hazard control also refers to the engineering methods used for this purpose. Personal protective equipment is not a hazard control.

**Hazard elimination** – The action taken to remove a hazard from the work environment. For confined spaces, this includes isolation. For a hazard to be eliminated, the conditions that create or cause the hazard no longer exist within the permit-required confined space.

**Hazardous atmosphere** – An existing or potential atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to escape unaided from a permit-required confined space, injury, or acute illness from one or more of the following:

- A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- An airborne combustible dust at a concentration that meets or exceeds its lower explosive limit (LEL);

  **Note:** This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 meters) or less.
- An atmospheric oxygen concentration below 19.5 percent (oxygen deficient) or above 23.5 percent (oxygen enriched).
- An airborne concentration of a substance that exceeds the dose or exposure limit specified by an Oregon OSHA requirement.

  **Note:** An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to escape unaided, injury, or acute illness due to its health effects is not covered by this provision. You must still follow all other applicable Oregon OSHA requirements to protect employee health.
- An atmosphere that presents an immediate danger to life or health (IDLH).

**Host employer** - An employer who owns or manages the property on which confined space entry work is taking place.

**Immediately dangerous to life or health (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-required confined space.

> **Note:** Some materials may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12 - 72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

**Inerting** – The displacement of the atmosphere in a permit-required confined space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

> **Note:** this procedure produces an IDLH oxygen-deficient atmosphere.

**Isolate or isolation** - The elimination or removal of a physical or atmospheric hazard by preventing its release into a confined space. Isolation includes, but is not limited to, the following methods:

- Blanking or blinding;
- Misaligning or removing sections of lines, pipes, or ducts;
- A double block-and-bleed system;
- Machine guarding;
- Blocking or disconnecting all mechanical linkages;
- Lockout or tagout of all sources of energy.

> **Note:** When using lockout/tagout, one must follow all of the requirements of 1910.147, "The Control of Hazardous Energy" (see H&SM Chapter 10, *Control of Hazardous Energy and Lockout/Tagout*).

**Line breaking –** 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.

**Limited or restricted means for entry or exit** – A condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

**Lockout** – The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed. May be used in conjunction with a tagout.

**Lower flammable limit (LFL) or lower explosive limit (LEL)** – The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

**Mobile worker** – an employee who performs work in multiple locations such as customer sites, company offices, private homes, vendor offices, or construction sites.

**Monitor or monitoring** – The process used to identify and evaluate the atmosphere in a permit-required confined space after an authorized entrant enters the space. This is a process of checking for changes in the atmospheric conditions within a permit-required confined space and is performed in a periodic or continuous manner after the completion of the initial testing of that space. (See also "testing.")

**Non-entry rescue** – Retrieval of entrants from a permit-required confined space without entering the space.

**OR-OSHA**—The State of Oregon's Occupational Safety and Health Administration.

**Other Hazards** –Other hazards can include falls or other hazards associated with specific type of work being performed.

**Oxygen deficient atmosphere** - An atmosphere containing less than 19.5 percent oxygen by volume.

**Oxygen enriched atmosphere** - An atmosphere containing more than 23.5 percent oxygen by volume.

**Permissible Exposure Limit (PEL)** — An airborne chemical exposure limit established by OR-OSHA that cannot be exceeded without proper respiratory protection and the implementation of feasible engineering controls.

**PPE** – Personal Protective Equipment.

**Permit-required confined space (permit space)** – A confined space that has one or more of the following characteristics:

- Contains, or has a potential to contain, a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration such that an entrant could become trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard that can inhibit an entrant's ability to escape unaided.

**Permit system** – PCC's written procedure for preparing and issuing permits for entry into permit-required confined spaces and for returning the permit space to service following termination of entry.

**PPM** – Parts per million of substances.

**Prohibited condition** - Any condition in a permit-required confined space that is not allowed by the permit during the period when entry is authorized.

**Physical hazard** - An existing or potential hazard that can cause death or serious physical harm in or near a confined space, or a hazard that has a reasonable probability of occurring in or near a confined space, and includes, but is not limited to:

- Explosives; mechanical, electrical, hydraulic, and pneumatic energy; radiation; temperature extremes; engulfment; noise; inwardly converging surfaces; and
- Chemicals that can cause death or serious physical harm through skin or eye contact (rather than through inhalation).

**Potential hazards** - All reasonably anticipated conditions within the confined space and outside the confined space that can adversely affect conditions within the space.

**Project Manager -** A PCC employee who directly coordinates with a contractor or vendor.

**Qualified person** – One who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

**Rescue** - Retrieving employees who are unable to remove themselves from a permit-required confined space. Rescue can be entry or non-entry, and can be conducted by PCC's employees or a third-party.

**Rescue provider/service** - The onsite or offsite personnel who PCC designates to engage in non-entry and/or entry rescue of employees from a permit-required confined space.

**Retrieval system** – Equipment, including mechanical retrieval devices, used for non-entry rescue of authorized entrants from a permit-required confined space and includes, but is not limited to, tripod/winch, harness, wristlets, and/or anklets.

**Self-Rescue** – The ability of a worker to exit a permit-required confined space on their own if it is no longer safe to remain in the space.

**Serious physical harm** – An impairment in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment may include loss of consciousness or disorientation, and may be permanent or temporary, or chronic or acute. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional while an illness resulting in serious physical harm could shorten life or substantially reduce physical or mental efficiency by impairing a normal bodily function or body part.

**Simulated Permit-Required Confined Space** – A confined space, or a mock-up of a confined space, that has similar entrance openings and is similar in size, configuration, and accessibility to the permit space the authorized entrants enter. A simulated space does not need to contain any physical or atmospheric hazards.

**Ventilate or ventilation** - Controlling an actual or potentially hazardous atmosphere using either powered equipment, such as fans and blowers, or reliable natural air flow, or a combination of the two, to reduce an otherwise hazardous atmosphere below the level that makes it a hazardous atmosphere. Ventilation is a method of hazard control, not hazard elimination.