1.0 Intent

To provide written procedures and guidelines for all University at Albany employees who must enter confined spaces and ensure that all employees entering a confined space adhere to established safety practices.

2.0 Scope

This Policy applies to all employees of the University at Albany’s main campus, downtown campus and east campus.

3.0 Policy

It is the policy of the University of Albany that any employee entering into a confined space will do so in accordance with the procedures outlined in this document. Refer to Code of Federal Regulations, Title 29, Part 1910.146 (Permit Required Confined Spaces).

The University will provide personal protective equipment, operating equipment, and manpower/supervision necessary for protection of individual health and safety.

4.0 DEFINITIONS

**ACCEPTABLE ENTRY CONDITIONS**: Conditions that must exist in a confined space to allow entry and to ensure that employees involved with a confined space entry can safely enter into and work within the space.

**ATTENDANT**: A trained individual stationed outside one or more permit required confined spaces, who monitors the authorized entrants and who performs all attendant’s duties assigned in the employer’s permit required confined space program.

**AUTHORIZED ENTRANT**: A trained employee who is authorized by the employer to enter a permit required confined space.

**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.

**CONFINED SPACE:** A space defined by the existence of all of the following conditions:

(1) Large enough and so configured that an employee can bodily enter and perform assigned work.

(2) Has limited or restricted means for entry or exit.

(3) Is not designed for continuous employee occupancy.

**DOUBLE BLOCK AND BLEED:** The closure of a line, duct, or pipe by closing and locking or tagging two inline valves and by opening and locking or tagging a drain or vent valve in the line between the 2 closed valves.

**ENGULFMENT:** 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.

**ENTRY:** 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.

**ENTRY PERMIT:** The written or printed document that is provided by the employer to allow and control entry into a permit required confined space.

**ENTRY SUPERVISOR:** The trained person 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 section. NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.
HAZARDOUS ATMOSPHERE: An atmosphere capable of causing death, injury, acute illness, or disablement due to the presence of flammable, explosive, toxic, or incapacitating substances.

HOT WORK PERMIT: Means the employers written authorization to perform operations capable of providing a source of ignition

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 confined space

LOWER EXPLOSIVE LIMIT (LEL): The lowest concentration of a substance in air that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At concentrations lower than the LEL, the mixture is too "lean" to burn.

NON PERMIT CONFINED SPACE: Means a confined space that does not contain or, with respect to atmosphere hazards, have potential to contain any hazard capable of causing death or physical harm.

OXYGEN DEFICIENT/ OXYGEN ENRICHED ATMOSPHERE: Means an atmosphere containing less than 19.5%, or greater than 23.5% oxygen by volume.

PERMIT REQUIRED CONFINED SPACE: 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 converging walls or by a floor which slopes downward and tapers to a smaller cross section.

(4) Contains any other recognized serious safety or health hazard.

PERMIT SYSTEM: Means the employers written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

PROHIBITED CONDITION: Means any condition in a confined space that is not allowed by the permit during the period when entry is authorized.
RESCUE SERVICE: Means the personnel designated to rescue employees from permit spaces

RETRIEVAL SYSTEM: Means the equipment (including a retrieval line, chest or full body harness, wristlets if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit required confined spaces

5.0 RESPONSIBILITIES

5.1 ENVIRONMENTAL HEALTH & SAFETY

5.1.1 Develop, implement, and maintain the Confined Space Entry Program

5.1.2 Identify locations and potential hazards of each confined space that may require entry by employees. Permit required confined spaces, when identified, shall be appropriately labeled "Danger - Permit Required Confined Space - Authorized Entrants Only".

5.1.3 Ensure that employees are trained and understand safe entry procedures during confined space entry operations.

5.1.4 Assure that necessary education and training will take place prior to the employee being assigned to work in a confined space.

5.1.5 Maintain all confined space entry equipment and calibrate gas detectors as necessary.

5.1.6 Maintain copies of all Confined Space Entry Permits. The confined space entry permits will be kept on file for a minimum of one year.

5.2 ENTRY SUPERVISORS

5.2.1 Identify Confined Space locations and work with EH&S to identify potential hazards of each Confined space that may require entry by employees

5.2.2 Contact Environmental Health & Safety to obtain a Confined Space Assessment / Permit Form, with as much advance notice as possible prior to performing confined space work.
5.2.3 Determine if acceptable entry conditions are present at a permit space where entry is planned.

5.2.4 Oversee entry operations for the duration of assigned work and terminate entry when conditions are determined to be unsafe.

5.2.5 Notify Power Plant Base before each Confined Space Entry.

5.2.6 Complete all sections of the Confined Space Assessment / Permit Form (Appendix A).

5.2.7 Maintain copies of all Confined Space Assessment / Permit Forms, including all air testing results. Return copies of permit to EH & S when permit is closed

5.3 ENTRANTS

5.3.1. Review the Confined Space Assessment / Permit Form
To identify hazards, entry requirements and conditions prior to Entry

5.3.2. Comply with procedures and guidelines.

5.3.3. Utilize the approved equipment as required by the Confined Space Assessment / Permit Form.

5.3.4. Maintain communication with attendants outside the Confined Space.

5.3.5. Alert the attendant of any signs or symptoms of exposure, to a dangerous situation or hazardous condition.
5.3.6. Notify the attendant of any un-authorized individuals accessing the confined space area.

5.3.7. In the event of an emergency, attempt to self-rescue.

5.4 ATTENDANTS

5.4.1 Review the Confined Space Assessment / Permit Form to identify hazards, entry requirements and Conditions prior to entry.
5.4.2 Remain outside the permit space during entry operations until relieved by another attendant.

5.4.3 Preform air monitoring as required and record air test results

5.4.4 Maintain communication with entrants inside the Confined Space

5.4.5 Control access to the confined space, prohibiting entry of unauthorized individual

5.4.6 Continuously maintain an accurate count of authorized entrants in the permit space.

5.4.7 Attendant should never enter a confined space to perform rescue services.

5.4.8 Initiate on-site rescue procedures by calling additional rescue and emergency services. Call Power plant Base at 442-3444 or radio power plant base KYM511

5.4.9 Perform non-entry rescues or other rescue services. This includes providing air to the space, obtaining rescue equipment, and any other non-entry rescue activities.

5.5 CONTRACTORS

5.5.1 All contractors working on University property are required to have a confined space entry program

5.5.2 Prior to an entry into a confined space, the contractor is responsible to notify the office of Environmental Health and safety so emergency services can be coordinated. The EH & S Phone # is 442-3495

6.0 SPECIFIC PROCEDURES

6.1. IDENTIFICATION OF CONFINED SPACES

6.1.1. The Office of Environmental Health and Safety shall assist supervisors with identifying all Permit and Non-Permit Required Confined spaces in their work area.
6.1.2. Supervisors are responsible for identifying confined space locations to employees, contractors and outside agencies working at or on University of Albany property.

6.2 MINIMUM NUMBER OF EMPLOYEES

6.2.1. A typical confined space team consists of an entry supervisor, an attendant, and entry personnel. A Minimum of two employees can fulfill the roles where the supervisor assumes role of the attendant. Only confined space qualified “Authorized Entrants” may enter a permit required confined space.

6.3 VENTILATION

6.3.1. Adequate ventilation will be provided to protect employees from dangerous working conditions resulting from accumulations of hazardous concentrations of flammable vapors, toxic gases, or an oxygen deficient or enriched environment in all buildings, pits, rooms, vaults, or other enclosed areas.

6.4 PRE-ENTRY PROCEDURES

6.4.1 The Entry supervisor must Contact the Office of Environmental Health and Safety to obtain a confined space assessment/entry permit, and provide all required information on the permit.

6.4.2 The Entry supervisor is responsible to insure that prior to entry, all personal protective safety equipment required to make a safe entry into the confined space is available and ready for use.

6.4.3 The Attendant is responsible for testing the atmosphere in the confined space prior to entry. He/she is responsible to make the sure that the gas meter that will be used has been calibrated within the past 6 months and has been bumped tested that day prior to entry. The meter should test for oxygen concentration, combustible gas or vapor, and potential toxic contaminants. Any hazardous conditions detected must be reported to the Office of Environmental Health and Safety.
Air testing shall be conducted prior to entry, then continuously throughout the entry to detect any atmospheric changes that might occur. All testing data obtained shall be recorded on the confined space entry permit.

The Entry supervisor is responsible to ensure atmospheric conditions are acceptable prior to entry into the confined space. Atmospheric conditions are unacceptable if:

- Oxygen levels are less than 19.5% or greater than 23.5%.
- Flammable gas, vapor or mist is greater than 10% of its lower explosive limit (LEL).
- Carbon Monoxide levels are over 35 PPM
- Hydrogen sulfide levels are over 10 PPM
- There is an airborne combustible dust at a concentration that obscures vision at a distance of five feet or less.
- An atmospheric concentration of a substance greater than the OSHA Permissible Exposure Level (PEL) or ACGIH Threshold Limit Value (TLV) established for that substance

If test results show that the atmospheric conditions in the confined space are unacceptable, entry into that area will be prohibited or discontinued until conditions are brought into acceptable limits.

If air sampling instruments indicate a developing adverse atmospheric change (e.g. steadily rising hydrogen sulfide or carbon monoxide levels, or steadily increasing or decreasing oxygen concentration), the supervisor will immediately pull all entrants from the confined space and reassess the area for its new hazard.

6.4.4 The Entry supervisor is responsible to Ensure Employees working in permit confined spaces shall wear all personal protective equipment appropriate for the hazards expected in the space.
6.4.5 The Entry supervisor is responsible to make sure that all entrants wear a fall protection harness of the type that suspends a person in an upright position. A safety line will be attached and the free end will be secured outside the opening.

Where an entry supervisor determines that a safety harness connected to a line would further endanger the life of the employee, the harness should remain worn by the employee to facilitate rescue in the event of an emergency.

When entry must be made through a top opening, the following requirements also apply: A retrieval device or other effective means shall be provided for lifting employees out of the space. If the entrant will be exposed to a potential fall of 4’ or more they should wear an appropriate fall protection lanyard. This can be accomplished with a retrieval device that also has fall protection capabilities.

When entry is made through a side opening, wristlets or anklets should be made available for the confined space entrant.

6.4.6 The Entry supervisor must also ensure all “special requirements” (as noted on the Permit) that are necessary to ensure the safety of the entrant are in place. This includes Lock out/Tag out including blank, cap, purge flush or vent lines. It also includes Lighting and Ventilation, Respirators if required, hot work permits and fire extinguishers.

6.5 ENTRY PROCEDURES

6.5.1 Confined space qualified entrants must ensure that all "Special Requirements" have been implemented and that environmental testing results are acceptable. In addition, the entrant must:
* Know the hazards associated with the space and their effects.
* Properly use the required personal protective equipment and other equipment required for entry.
* Maintain a continuous means of communication with the attendant.
* Alert the attendant in the event of an emergency.
* Evacuate the space if an emergency occurs.
6.5.2 A confined space qualified attendant must be in position at all times while workers are in the confined space. The attendant shall:
* Know the hazards associated with the confined space and their effects.
* Maintain an accurate count of all persons in the confined space
* Remain at their assigned station until relieved by another qualified attendant or until all entrants leave the confined space.
* Know how, and have the means, to summon emergency assistance. Radio the power plant base KYM511 on Channel 1 or Call 442-3444 immediately.
* Have the authority to order the workers out of a confined space if:
   * Hazardous conditions exceed those set by the permit
   * An unexpected hazard presents itself
   * Workers in the confined space show signs of a toxic reaction
   * A situation occurs outside the confined space which could pose a hazard to the workers located inside the confined space

NOTE: UNDER NO CIRCUMSTANCES IS THE ATTENDANT TO ENTER THE CONFINED SPACE UNLESS THEY ARE EQUIPPED FOR EMERGENCY RESCUE AND THERE IS A QUALIFIED PERSON TO TAKE THEIR PLACE AS ATTENDANT.

6.6 POST-ENTRY PROCEDURES

6.6.1. The entrants shall remove all equipment and materials from the space, return the space to its planned operating condition, and secure the space.

6.6.2. The attendant shall account for all entrants and return all paperwork and logs to the supervisor.

6.6.3. The supervisor shall ensure that all appropriate steps have been taken, notify the Environmental Health and safety office of the completion of the operation and return the permit to them

7.0. RESCUE AND EMERGENCY PROCEDURES

7.0.1. If an emergency arises, notify the power plant base KYM511 on channel 1 or call 442-3444 immediately. Explain the nature and location of the emergency, and request that they contact the Albany Fire Dept.
7.0.2. The Power Plant Base operator will immediately notify the Albany Fire Department and request a confined space rescue. Albany Fire Dept. is aware that they are the primary responders for confined space emergencies on University property and will respond with paramedics and appropriate confined space rescue equipment.

7.0.3 The attendant will not enter the confined space and will prevent any unauthorized person from entering the space. He/She will continue to communicate with the entrants if possible. If non entry rescue can be performed by the attendant it should be done.

7.0.4 Upon arrival the attendant will brief AFD as to the hazards within the space, suspected problem and any other pertinent information.

7.0.5 The entry supervisor will report to the site and stand by to assist the Albany Fire Dept. where needed.

7.0.6 Once the incident is remedied, the entry supervisor and attendant will secure the confined space, clean up the exterior site and fill out a detailed accident report.

8.0 TRAINING

8.1 All persons involved in confined space operations including supervisors, authorized entrants and authorized attendants must be trained in confined space operations. Initial and refresher training is required to provide employees with the necessary understanding, skills, and knowledge to perform the job safely. Refresher training should be conducted every 3 years or when hazards in the confined space change, or whenever an evaluation of the confined space entry program identifies inadequacies in the employee’s knowledge.

8.2 Training Topics should include:

* Types of confined space hazards.
* The entry permit system and the hot work permit.
* Atmospheric testing equipment including its use, calibration, and maintenance.
* Retrieval equipment use
* Methods for control or elimination of any atmospheric hazard
* Personal protective equipment, including full body harness, respiratory protection. Chemical protective clothing, and eye and face protection

* Responsibilities of qualified entrants, attendants, and entry supervisors

9.0 RELATED ATTACHMENTS

9.1 Appendix A Sample confined space permit
9.2 Appendix B Sample confined space evaluation form
# APPENDIX A

## CONFINED SPACE ASSESSMENT / ENTRY PERMIT

Each section must completely filled out prior to an entry.

### CONFINED SPACE LOCATION AND DETAILS OF ENTRY

<table>
<thead>
<tr>
<th>LOCATION OF SPACE:</th>
<th>DATE &amp; TIME OF ENTRY:</th>
<th>PURPOSE OF ENTRY:</th>
<th>NAME OF ENTRY SUPERVISOR:</th>
<th>NAME OF ATTENDANT(S):</th>
<th>SPACES#</th>
</tr>
</thead>
</table>

### AUTHORIZED ENTRANTS

1. ______________________  4. ______________________
2. ______________________  5. ______________________
3. ______________________  6. ______________________

### HAZARD ASSESSMENT (CHECK ALL POTENTIAL HAZARDS PRESENT)

**ATMOSPHERIC HAZARDS**

- [ ] OXYGEN DEFCICIENCY
- [ ] OXYGEN ENRICHMENT
- [ ] COMBUSTIBLE GAS
- [ ] TOXIC GASES
- [ ] INERT GAS

**ENGULFMENT HAZARDS**

- [ ] LIQUID
- [ ] SOLIDS
- [ ] OTHER

**ENTRAPMENT HAZARDS**

- [ ] INWARDLY CONVERGING WALLS
- [ ] OTHER

**OTHER SERIOUS HAZARDS**

- [ ] LIVE ELECTRICAL
- [ ] LIVE HEAT OR HOT WATER
- [ ] MECHANICAL HAZARDS
- [ ] FALL HAZARDS >5FT
- [ ] HOT WORK
- [ ] OTHER

### ATMOSPHERIC MONITORING (MUST BE DONE PRIOR TO ENTRY AND CONTINUOUSLY THROUGHOUT ENTRY)

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Monitoring performed by</th>
<th>O2 (19.5%-23.5%)</th>
<th>LEL (&lt;10%)</th>
<th>H2S (ppm) (&lt;10ppm)</th>
<th>CO (PPM) (&lt;35PPM)</th>
<th>Other (specify)</th>
</tr>
</thead>
</table>

### REQUIRED SAFETY PRECAUTIONS AND PPE

- [ ] Lines Broken – Caped/Blanked
- [ ] Ventilation
- [ ] lockout /tagout required
- [ ] Communication equip. required
- [ ] Barricades needed
- [ ] Full body harness w/back D ring
- [ ] Life line
- [ ] Tripod and retrieval winch
- [ ] Head Protection
- [ ] Eye protection
- [ ] Hearing Protection
- [ ] Gloves
- [ ] Protective clothing
- [ ] Lighting (explosion proof)
- [ ] Air purifying respirators
- [ ] Hot work permit
- [ ] Fire Extinguisher

### EMERGENCY NUMBERS:

Radio: KYM511 Power Plant base Phone: 442-3444 (Power Plant Base) 442-3495 (EHS OFFICE)

If emergency occurs immediately contact Power plant base tell them there is a confined space emergency and give exact location and description of emergency.

Keep copy of this permit at the entry site through duration of the confined space entry

Return copy of Permit to EHS Office when entry is complete

Make & Model of Air Monitor: ________________________  Air Monitoring done by: ________________________

Date calibrated: ______  Time & Date Permit closed: ______  Supervisor signature: ________________________
APPENDIX B

CONFINED SPACE EVALUATION FORM

Name of Confined Space: _____________________  Space # _____________

Uptown or Downtown Campus? ______________  Map Designation _____

Exact Location: ______________________________

Evaluation Questions:

1. Is the space large enough and so configured that an employee can enter and work? ______ ______
2. Does the space have limited or restricted means for entry or exit? ______ ______
3. Is the space NOT designed for continuous employee occupancy? ______ ______

If the answer to all 3 questions is yes then the Space is a Confined space
Continue to the next set of questions. If answers are No this is not a confined space.

4. Does the space contain or have the potential to contain a Hazardous atmosphere? ______ ______
5. Does the space contain a material with a potential for engulfment of a worker? ______ ______
6. Does the space have an internal shape such that a worker could be trapped or suffocated, by inwardly converging walls or floor ______ ______
7. Does the space contain any other recognized safety or health hazards such as: Mechanical, Hazards, Electrical Hazards, fall hazards? ______ ______

If you answered NO to all questions 4 through 7 then the space is a Non-Permit Required Confined Space.

If you answered yes to any of questions 4 through 7 the space is a Permit required confined space

This space is permit required: _____       This space is Non-Permit required ______
### HAZARD IDENTIFICATION & PROTECTIVE MEASURES REQUIRED

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>POTENTIAL HAZARD</th>
<th>PROTECTIVE MEASURES TO BE TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMOSPHERIC</td>
<td>LOW OXYGEN, COMBUSTIBLE GASES, AND TOXIC VAPORS</td>
<td>ALWAYS USE GAS DETECTOR PRIOR TO ENTRY AND CONTINUOUSLY THROUGHOUT ENTRY</td>
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<td>ENGULFMENT ENTRAPMENT</td>
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<tr>
<td>OTHER</td>
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</tbody>
</table>

Notes Specific to this confined space:

_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________
_________________________________________________________________________________________________________

Date Reviewed: __________