Title: Confined Space Entry Program		Print Date: **7/18/2018**
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1. Purpose - The purpose of this program is to provide safety requirements to enter and occupy confined spaces for the University of Utah in compliance with the Occupational Safety and Health Administration (OSHA) confined space and telecommunication standards.

2. Rule - This Confined Space Entry Program applies to all confined spaces at the University of Utah and include Research Park and University Hospital. All University employees and contractors are subject to this policy.

OSHA requires employers develop a confined space entry program to protect workers who enter confined spaces. The University of Utah's program is designed to apply the standard in a way that minimizes confusion yet meets all requirements of the standard. The general requirements for confined space entry are contained in the main body of this procedure. The appendices contain specific instructions for each type of confined space as well as a listing of all confined spaces on campus. The Entry Permit/Log for LEVEL II or III spaces and its step-by-step instructions are also located in the appendices.

3. Definitions

Acceptable entry conditions - the conditions that must exist in a LEVEL II or III confined space to allow entry and to ensure that employees involved in the entry can safely enter into and work within the space.

Attendant - an individual stationed outside one or more LEVEL III spaces who monitors the authorized entrants and who performs all attendant's duties assigned

Authorized entrant - an employee who is authorized to enter a LEVEL II or III space.

Confined space - a space that is:

1. Large enough for the whole body to enter and work in
2. Has a limited means of entry and exit
3. Is not intended for continuous occupancy

Confined Space (Permit required) – 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 material that has the potential to engulf an entrant.
3. Has walls that converge inward or floors that slope downward and taper into a smaller area
4. Contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress.

Department - Any University department, which oversees entry into a confined space.

Departmental Confined Space Administrator - A person designated in a Department who is responsible for all aspects of the confined space program.

Engulfment - the surrounding and effective capture of a person by a liquid or finely divided 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 LEVEL II or III 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 /Log - the form that contains the Entry Permit for LEVEL III confined space entry or Entry Log for LEVEL II confined space entry, permits entry into a LEVEL II or LEVEL III space and provides spaces for entry information and access rosters

Entry Permit - Sections 1, 3, 5, 6 and 7 of the Entry Permit /Log, which describes controls, documents testing and authorization, and provides access and attendant rosters for LEVEL III confined space entry.

Entry Log - Sections 1, 2, 4 and 7 of the Entry Permit/Log which documents testing and prerequisites, and provides access rosters for LEVEL II confined space entry.

Entry supervisor - the person responsible for determining if acceptable entry conditions are present at a LEVEL III space when entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry.

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

1. flammable gas, vapor or mist in excess of 10% of its lower flammable limit (LFL);
2. airborne combustible dust at a concentration that meets or exceeds its LFL, which can be approximated as a condition which the dust obscures the vision at a distance of 5 feet or less;
3. atmospheric oxygen concentration below 19.5% or above 23.5 %;
4. atmospheric concentration of any substance for which a dose or permissible exposure limit (PEL) is published by OSHA and which could result in employee exposure in excess of its dose or PEL;
5. Any other atmospheric condition that is immediately dangerous to life or health.

Isolation - the process by which a LEVEL III 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 lines, pipe, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

LEVEL I Confined Space - a 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. These spaces require no prior approval nor documentation for entry.

LEVEL II Confined Space - a permit required confined space in which the only hazard posed is atmospheric and it can be controlled by forced air ventilation alone. Entry into these spaces does not require an entry supervisor nor attendant. The rescue team need not be available. The "Entry Log" portion of the Entry Permit/Log will be used to document entry and testing within these spaces.

LEVEL III Confined Space - a confined space that has one or more of the following characteristics:

1. Contains, or has a 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 smaller cross-section; or
4. Contains any other recognized serious safety or health hazard

These spaces require an Entry Permit, attendant and entry supervisor.

Oxygen deficient atmosphere - an atmosphere containing less than 19.5 % oxygen.

Oxygen enriched atmosphere - an atmosphere containing more than 23.5% oxygen.

Personal Protective Equipment (PPE) - Specialized clothing or equipment worn by employees for protection against health and safety hazards. Is designed to protect many parts of the body, i.e., eyes, head, face, hangs, feet, and ears.

Prohibited condition - any condition in a LEVEL III space that is not allowed by the Entry Permit during the period when entry is authorized.

Specific entry procedures - the procedures required to be followed when entering a particular LEVEL II or III confined space. These procedures are located in Appendix A or are generated by the Department. If the procedures are generated by the Department, then they may be annotated in Sections 3 and 7 of the Entry Permit without the use of a separate document.

4. Roles and Responsibilities:

(OEHS) Occupational Environmental Health and Safety responsibilities:

1. Providing assistance and guidance for program development and compliance
2. Providing information on the hazards of confined spaces and the requirements of all applicable OSHA regulations
3. Providing assistance in identifying confined spaces, determining hazard potential, establishing safe entry procedures, and selecting personal protective equipment and rescue equipment
4. Assigning classifications to confined spaces
5. Providing assistance and guidance to units in defining trainingrequirements
6. Annual review of the program in conjunction with affected units (Districts/Aux, etc.)

Unit responsibilities:

1. Identifying and knowing the potential hazards of confined spaces within their areas of responsibility.
2. Ensuring that staff receives appropriate training in accordance with this program.
3. Posting appropriate warning signs in accordance with this program.
4. Maintaining program documentation, training records, and canceled permits.
5. Alerting OEHS whenever conditions arise which may affect the classification of a confined space.
6. Alerting OEHS whenever a new confined space is identified for inclusion in the master database.
7. Providing appropriate PPE and rescue equipment for confined space entry operations (see specific entry procedure)
8. Ensuring medical evaluations and fit testing are completed for personnel who will be wearing respirators in accordance with OSHA requirements.
9. Providing feedback to OEHS regarding program improvement.
10. Acquiring and maintaining all necessary monitoring equipment and ensuring appropriate calibration. Departments which do not normally enter confined spaces are not required to purchase this equipment.
11. Enforcement of this program.

5. Procedure

A. Evaluation of spaces

All University grounds and facilities including those at the University Hospital and Research Park shall be evaluated for the presence of confined spaces. Each space shall be classified as LEVEL I, II, or III corresponding to one of the different types of confined space as defined in the OSHA standard. Facilities Management personnel (District Managers, Hospital F&E, Real Estate Admin, etc.) are responsible for identifying any confined space in their area and ensuring those spaces are included in the master list maintained by OEHS (app. E). OEHS shall provide assistance to units as needed. OEHS is responsible for final determination of confined space classification. LEVEL II or III spaces may be downgraded as appropriate according to the guidelines established in the Reclassifying a Confined Space section of this document.

Introducing hazards in a confined space may change its classification. The unit with the assistance of OEHS shall reevaluate the space anytime new hazards are introduced in accordance with the Introduction of Hazards section of this document.

Appendix B contains a flow chart to assist units in the identification and classification of confined spaces.

B. PREVENTION OF UNAUTHORIZED ENTRY

Barricades, signs, and other devices must be used to warn others from coming near the permit-required confined space. They must be placed in appropriate locations whenever there is a likelihood of a release of harmful gases, an exposed area that someone could fall into, or any other potential hazards that could affect workers or bystanders.

LEVEL I Confined Spaces - no additional entry requirements

LEVEL II Confined Spaces - Any individual in the course of their duties who could reasonably be expected to enter a LEVEL II space will be trained on their identification and entry requirements.

LEVEL III Confined Spaces - All permanent LEVEL III confined spaces shall be posted with danger signs to prevent unauthorized entry. The signs shall be posted at the entrance and read “DANGER LEVEL III Confined Space - DO NOT ENTER (permit required).”

If a unit decides that employees will not enter a particular LEVEL III confined space, they must take effective measures to prevent employees from entering it. This may include the use of locks, barriers and/or

signs.

C. LEVEL I CONFINED SPACE ENTRY

LEVEL I confined spaces are spaces that do not contain, or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm. These spaces do not require any specific controls for entry unless they are being downgraded from LEVEL III or II spaces. Specific requirements for downgrading LEVEL III or II spaces can be found in the Reclassifying a Confined Space section of this document.

At no time shall work be done that introduces hazards into a LEVEL I space such that it no longer can be classified as LEVEL I. This may include, but is not limited to, the use of paints, solvents, toxic chemicals, or welding equipment. The unit with the assistance of OEHS shall reevaluate the space anytime new hazards are introduced in accordance with the Introduction of Hazards section of this document.

Note: All elevator shaft pits are considered LEVEL I confined spaces as long as proper lockout and tagout procedures have been implemented.

D. LEVEL II CONFINED SPACE ENTRY

LEVEL II confined spaces are essentially LEVEL III spaces in which the only actual or potential hazard posed is atmospheric which can be controlled by forced air ventilation alone. Entry into these spaces does not require an entry supervisor or attendant.

The "Entry Log" portion (section 1, 2, 4 and 7) of the Entry Permit/Log is used to document that acceptable entry conditions are present in and around a LEVEL II confined space prior to entry. It also documents initial and periodic atmospheric sampling data. This data shall be made available to each employee who enters the space. The Entry Log is required to be kept for a minimum of three years after the date of entry. Data compiled in Entry Logs can be used to establish that forced ventilation is controlling any potential atmospheric hazard for a specific LEVEL II space. Refer to Appendix C for specific instructions on how to use the Entry Permit/Log.

Many confined spaces at the University of Utah are LEVEL II spaces due to the potential for oxygen deficiency and/or a hot environment. A confined space may have an oxygen deficient atmosphere at the time of entry or one may develop while work is being performed. Many confined spaces are hot from the presence of steam or high temperature water piping. It is therefore imperative that LEVEL II spaces be ventilated in accordance with the ventilation section prior to entry in order to ensure oxygen is at an adequate level and ambient temperatures are acceptable. Continuous forced ventilation is also required so a hazardous condition does not develop.

General requirements prior to entry into a LEVEL II space are (see specific requirements in applicable appendices):

1. Any condition making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
2. When entrance covers are removed, the opening must be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee in the space from foreign objects entering the space.
3. The space must be ventilated for as long as required by the Ventilation section prior to entry.
4. Before a worker enters the space, the internal atmosphere shall be tested with a quad gas meter, for oxygen content, for flammable gases or vapors, and for potential toxic air contaminants, in that order. Various levels and areas must be tested.
5. The space must contain acceptable entry conditions prior to entry. Specific values for atmospheric hazards are printed on the Entry Log.
6. The person making the initial survey shall sign the Entry Log.

General requirements during entry into a LEVEL II space are (see specific requirements in applicable appendices):

1. The maximum time an Entry Log can be used is eight hours. If work is not completed when the current Entry Log has expired, a new Entry Log must be issued.
2. Continuous forced ventilation must be used anytime the space is occupied in accordance with the ventilation section.
3. The atmosphere within the space must be tested hourly to ensure that the continuous force ventilation is preventing the accumulation of a hazardous atmosphere. Spaces are provided on the Entry Log to accommodate this data.
4. If a hazardous atmosphere is detected during entry each worker shall leave the space immediately. OEHS and the unit supervisor must be contacted and an investigation as to how the hazardous atmosphere developed. Workers must not be allowed to reenter the space until the hazard can be eliminated.
5. Upon completion of work, the space must be cleared, the entrance placed in its original condition and the Entry Logs(s) filed with the Department.

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E. LEVEL III CONFINED SPACE ENTRY

LEVEL III confined spaces are permit required confined spaces as described in the OSHA standard. They are characterized by meeting the definition of a confined space as well as having one or more of the following hazards:

1. Contains, or has a 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 smaller cross-section; or
4. Contains any other recognized serious safety or health hazard.

All permit-required confined spaces in your work environment must be identified by a sign, placard, or effective means to prevent unauthorized entry. If there is any doubt on your part whether something in your work area qualifies as a permit-required confined spaced, check with your immediate supervisor or OEHS personnel.

These spaces require an entrant(s), attendant and entry supervisor. Four (4) members of the rescue team are also required to be available during the entire time entry is made. The entry supervisor, who may also act as an entrant, authorizes the entry and ensures all necessary requirements are met prior to and during the entry. The attendant is stationed outside of one or more adjacent LEVEL III spaces and monitors the entrants and performs all duties described below.

The hazards in a LEVEL III space must be identified, evaluated and controlled prior to entry. Appropriate PPE must be worn during entry to protect the worker from any potential hazard. The hazards, controls and required PPE must be written on the Entry Permit. The Permit contains blocks for this purpose. Controlling the hazards means that the procedures and/or practices that permit safe entry are in place. These include, but are not limited to the following:

1. Specifying acceptable entry conditions (OEHS can assist in this determination)
2. Posting the Entry Permit at the entrance to the confined space which identifies the hazards and controls so that each entrant is aware of them
3. Allowing the entrants to observe any monitoring or testing of the spaces
4. Isolating the LEVEL III space (see definition of isolation)
5. Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards
6. Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards
7. Verifying that conditions in the LEVEL III space are acceptable for entry throughout the duration of an authorized entry

A pre-job briefing given by the entry supervisor is required prior to entering any LEVEL III space. All persons involved are required to attend including all authorized entrants, authorized attendants and the entry supervisor. The rescue team must be briefed as to the nature and location of the entry and be in communication with the on-duty authorized attendant or Facilities Operations dispatch.

General requirements <u>prior</u> to entry a LEVEL III space are (see specific requirements in applicable appendices):

1. The entry supervisor shall ensure that all hazards are controlled as specified above.
2. The entry supervisor shall fill out sections 1 and 3 of the Entry Permit to the extent possible. This includes identifying all authorized attendants and entrants.
3. The entry supervisor shall give a pre-job briefing as required above.

4. Any condition making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
5. When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee in the space from foreign objects entering the space.
6. Retrieval equipment shall be in place. If the space has a greater than five foot vertical drop then a tripod type retrieval system must be used.
7. The space must be ventilated for a least as long as the specific instructions require prior to entry in accordance with Ventilation section of this document.
8. The attendant shall be stationed outside of but near entrance of confined space.
9. Before an authorized entrant enters the space, the internal atmosphere shall be tested, with a quad gas meter, for oxygen content, for flammable gases or vapors, and for potential toxic air contaminants, in that order. Various levels and areas must be tested.
10. The space should contain acceptable entry conditions prior to entry. Specific values for atmospheric hazards are printed on the Entry Permit. If these values cannot be met then ventilation shall continue until acceptable entry condition are met if possible. If acceptable conditions cannot be met, appropriate PPE shall be worn.
11. The person making the initial survey shall sign the Entry Permit.
12. Immediately provide the initial test result to the entrant(s).
13. The entry supervisor shall authorize entry by signing and dating the Entry Permit.

General requirements during entry into a LEVEL III space are (see specific requirements in appendices for an individual space):

1. The maximum time an Entry Permit can be used is eight hours. If work is not completed when the current Entry Permit has expired, a new Entry Permit must be issued.
2. Continuous forced ventilation must be used as long as the space is occupied in accordance with the ventilation section.
3. All entrants must wear an appropriate quad gas monitor while in the confined space. Additionally, the atmosphere within the space must be tested hourly by the attendant from outside the confined space to ensure that the continuous forced ventilation is preventing the accumulation of a hazardous atmosphere. Spaces are provided on the Entry Permit to accommodate this data.
4. If a hazardous atmosphere is detected during entry each worker shall leave the space immediately. OEHS and the unit shall be contacted and an investigation as to how the hazardous atmosphere developed begun. Workers shall not be allowed to reenter the space until the hazard can be eliminated.
5. The attendant shall be stationed the entire time of entry. The attendant shall only be relieved by another authorized attendant with the knowledge of the entry supervisor.
6. Upon completion of work, the space shall be cleared, the entrance placed in its original condition and the Entry Permit(s) filed with the unit.

F. VENTILATION

As specified elsewhere in this program, confined spaces may be required to be ventilated prior to entry and/or ventilated continuously while entry operations are taking place. The following requirements apply to ventilation:

1. If ventilation is required prior to entry then the space shall be ventilated for a least 15 minutes if it is less than 1500 ft^3, 30 minutes if it is between 1500 ft^3 and 3000 ft^3, or 45 minutes if it is between 3000 ft^3 and 4500 ft^3. This assumes that the blower used has a capacity of at least 800 ft^3/min. If a blower is used that has a capacity less than 800 ft^3/min then ventilation times should be readjusted to provide at least 10 volume air changes. The current model used by Facilities Management as a nominal capacity of 973 ft^3/min.

2. If continuous ventilation is required then it shall be directed as to ventilate the immediate areas where a worker is or will be present.

3. Continuous ventilation must be from a blower or fan that has a capacity to provide at least 10 volume air change per hour.
   IMPORTANT: The above requirement assumes there is no atmospheric hazards are introduced during work activities in the space such as from welding, the use of solvents, glues, painting, etc. If hazards are to be introduced, OEHS must reevaluate ventilation needs.

4. The air supply must be from a clean source and may not increase the hazards of the space. For example, a running vehicle must not be parked near the blower intake.

G. ISOLATING THE SPACE

Blanking, locking out, and tagging all supply lines and sources of energy are needed to neutralize additional hazards. This is called isolating the space. This includes:

1. Locking out and tagging electrical power as close to the source as possible.
2. Blocking and bleeding all chemical, pneumatic and hydraulic lines.
3. Disconnecting belt and chain drives and mechanical linkages on shaft-driven equipment where possible.
4. Once you have properly locked out and tagged the sources, check the start buttons, on-off switches, and other appropriate means to make sure you have properly isolated the source.

H. REQUIRED EQUIPMENT

Departments must provide the following equipment as required to facilitate safe entry into LEVEL II or III spaces:

1. Testing and monitoring equipment as specified by OEHS.
2. Ventilating equipment needed to obtain and maintain acceptable entry conditions
3. Equipment necessary for communication between attendant and Facility Operations dispatch and attendant and entrant
4. All necessary PPE
5. Lighting equipment needed to enable entrants to work safely
6. Barriers and shields to prevent objects from entering occupied LEVEL II or III spaces or to prevent people from falling into open spaces
7. Equipment, such as ladders, needed for safe egress by authorized entrants
8. All required rescue and emergency equipment
9. Any other equipment necessary for safe entry into and rescue from LEVEL II or III spaces.

I. ENTRY PERMIT/LOG

The Entry Permit/Log is used to document that all prerequisites are completed, verify the hazards have been controlled and record the results of periodic atmospheric testing for LEVEL II and III confined space entry. LEVEL I spaces do not require an Entry Permit/Log. Sections 1, 2, 4 and 7 constitute an Entry Log and are required for LEVEL II entry. Sections 1, 3, 5, 6 and 7 constitute an Entry Permit and are required for LEVEL III entry. Rosters for LEVEL II entrants and LEVEL III entrants and attendants are on the back of the form. A space is also provided on the back to explain any special controls; the methods used to isolate the space, and/or the justification for changing the classification of a confined space.

The Entry Permit must be posted at the confined space entrance. Units must develop a system for issuing and filing Entry Permits/Logs. They must be stored for a period of three years after the date that the Entry Permit/Log has expired.

J. INTRODUCTION OF HAZARDS

If hazards are to be introduced into a confined space, which would change its classification, then the unit with the assistance of OEHS shall conduct a formal review of the procedure and reclassify the space and/or implement additional controls as necessary. The new procedure shall be in writing and have the program administrators or their designee signature and date.

K. ABNORMAL CONDITIONS

If conditions in a confined space are abnormal or are not accounted for in the specific entry procedure then the space must be reevaluated by the unit with the assistance of OEHS prior to entry. For example, a flooded confined space would probably require pumping prior to entry.

L. STORAGE IN CONFINED SPACES

Confined spaces shall not be used as storage areas for equipment, chemicals, refuse, or anything else that can produce a tripping, atmospheric, or fire hazard.

M. RECLASSIFYING A CONFINED SPACE

Program administrators or their designee, with OEHS concurrence, may reclassify a LEVEL III space to a LEVEL I space as long as the following conditions are met:

1. The LEVEL III space has no actual or potential atmospheric hazards
2. All other hazards have been eliminated in the confined space without actually entering the confined space
3. If entry is required to eliminate the hazard, it will be done in accordance with a normal LEVEL III entry
4. Program administrators or their designee must certify on the back of the Entry Permit that all hazards have been eliminated.

Program administrators or their designee, with OEHS concurrence, may reclassify a LEVEL III space to a LEVEL II space as long as the following conditions are met:

1. All hazards with the exception of those atmospheric hazards that can be controlled by forced ventilation alone have been eliminated without actually entering the confined space.
2. If entry is required to eliminate the non-atmospheric hazard, it will be done in accordance with a normal LEVEL III entry.
3. Program administrators or their designee must certify on the back of the Entry Permit that all hazards have been eliminated.

Note: Storm drains will normally be reclassified from LEVEL III spaces to LEVEL II spaces prior to entry if conditions permit (see specific instructions). OEHS concurrence is not required in such cases.

Note: Elimination of a hazard means that the hazard no longer exists whereas controlling a hazard means that although the hazard may still exit, steps have been taken to ensure acceptable entry conditions.

Program administrators or their designee, with OEHS concurrence, may reclassify a LEVEL II space to a LEVEL I space if it can be shown by historical data that all actual or potential atmospheric hazards are eliminated without the use of ventilation. For example, if oxygen deficiency is the only potential atmospheric hazard in a particular LEVEL II space and it can be shown that it has enough natural ventilation as to not allow an oxygen deficient atmosphere to build while workers are inside, then it can be reclassified. Program administrators or their designee must justify on the back of the Entry Log that the LEVEL II space can be reclassified.

Some confined spaces on campus may be reclassified to LEVEL I permanently if certain conditions are met prior to entry. The Departmental Confined Space Administrator must authorize the reclassification. A sign

detailing the prerequisites for entry must be posted near the confined space entry point.
The permanently reclassified confined spaces on campus are:

1. The walk-in cage washers at the Comparative Medicine Center
2. The walk-in autoclave at the Barrier Facility

N. CONTRACTOR LEVEL II OR III ENTRY

The following requirements apply to entry into LEVEL II or III confined spaces by contractors to the University:

1. The contractor must use a confined space program that meets the requirements of OSHA standard 1910.146 or must comply with the requirements of this program.
2. The host unit shall apprise the contractor of all hazards of the space and the controls required for entry into it as specified in the appendices.
3. The host unit shall coordinate with the contractor when they both will be working in or near a LEVEL II or III space.
4. The contractor shall debrief the unit at the conclusion of entry operations regarding any hazards confronted or created during entry operations.
5. The contractor must specify who will provide rescue services for LEVEL III entry.

O. DUTIES OF AUTHORIZED ENTRANTS

Entrants into LEVEL II or III confined spaces must:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure
2. Know the proper use of all equipment required for the entry to include rescue equipment and PPE.
3. Ensure that they have signed in and out of the space on Section 4 of the Entry Permit/Log for LEVEL II entry or Section 6 of the Entry Permit for LEVEL III entry.
4. Communicate with the attendant at least every two minutes (LEVEL III).
5. Alert the attendant whenever: (LEVEL III)
    a. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
    b. The entrant detects a prohibited condition.
6. **Exit from the space as quickly as possible whenever:**
    a. An order to evacuate is given by the attendant or the entry supervisor; (LEVEL III)
    b. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
    c. The entrant detects a prohibited condition;
    d. Any evacuation alarm is activated.

P. DUTIES OF AUTHORIZED ATTENDANTS

Attendants for LEVEL III confined spaces must:

1. Know the hazards that may be faced during entry, including information on the mode, signs or

symptoms, and consequences of exposure;

2. Be aware of possible behavioral effects of hazard exposure in entrants;
3. Continuously maintain an accurate count by name of authorized entrants in the in Section 6 the Entry Permit;
4. Remain outside of the space during entry operations until relieved by another authorized attendant;
   Note: An attendant should NEVER enter the permit-required confined space to attempt a rescue.
5. Sign in and out of the attendant log
6. Communicate with authorized entrants at least every two minutes to monitor entrant status.
7. Monitor the space and alert entrants of the need to evacuate the space if:
   a. The attendant detects a prohibited condition;
   b. The attendant detects a situation outside the space that could endanger the authorized entrants;
   c. The attendant detects the behavioral effects of hazard exposure in an authorized entrant;
   d. The attendant cannot effectively and safely perform all the duties required by authorized attendants;
8. Summon the rescue team and Salt Lake City Fire Department as soon as the attendant determines that entrants may need assistance to escape from the space.
9. Take the following actions when unauthorized persons approach or enter a LEVEL III space while entry is underway:
   a. Warn the unauthorized persons that they must stay away from the space;
   b. Advise the unauthorized persons that they must exit immediately if they have entered the space;
   c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the
   d. Perform no other duty that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Note: The attendant has the authority and responsibility to order all workers to exit the permit-required confined space at the first recognition of intoxicated behavior, or if contaminants or contaminations levels in the confined space reach unsafe levels.

Note: The attendant is to remain at his or her post at all times, never leaving except to save their own life, or unless replaced by an equally qualified individual while the entry continues. If the attendant must leave and there is no replacement, all workers in the permit-required confined space must exit.

Q. DUTIES OF ENTRY SUPERVISORS

Entry supervisors for LEVEL III confined spaces must:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of exposure.
2. Verify that all controls specified on the Permit are in place before endorsing the Permit.

3. Terminate or cancel the Permit if a prohibited condition arises.
4. Verify that the rescue team is on campus throughout the duration of entry.
5. Ensure that Safety Data Sheets are on hand for any substance for which one is required.
6. Remove unauthorized individuals who enter or who attempt to enter the space during entry.
7. Determine that entry operations remain consistent with terms of the Entry Permit and that acceptable entry conditions are maintained. They must visually check the operations prior to entry and once every four hour period thereafter for the duration the space is occupied

R. SELF RESCUE

The best rescue option is a self-rescue by which the entrant recognizes symptoms of exposure or is injured and immediately exits the confined space if possible without the aid of the attendant nor any rescue device. The non-entry rescue team and Salt Lake City Fire shall be called if any type of rescue is required: self-rescue (if serious injury is involved), attendant non-entry rescue or rescue team rescue. Salt Lake City Fire shall take control of all rescues once they arrive on scene.

S. ATTENDANT NON-ENTRY RESCUE

If the entrant becomes unable to perform a self-rescue, the attendant shall attempt to rescue the entrant by use of a mechanical device from outside the space if such a rescue will not further injure the entrant or the attendant. If, for example, it is apparent that the entrant has become incapacitated due to presence of a hazardous atmosphere, the attendant may perform a non-entry rescue. If, on the other hand, there is no possible atmospheric hazard and if it the entrant may experience a potential back injury then the attendant shall wait for the Salt Lake City Fire to make the extraction.

Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrants back near shoulder level, above the entrants head or at a place, which presents a small enough profile for the successful removal of the entrant. A space that has at least a five-foot vertical entrance must have a tripod and winch retrieval setup. If it has a horizontal entrance then it should have, at a minimum, a rope attached to the harness so that the attendant can pull the entrant out.

T. PROGRAM REVIEW

Units shall review this program annually and submit recommendations for improvement to OEHS. Program administrators or their designee shall actively seek input from workers for suggestions.

U. TELECOMMUNICATIONS

The following requirements supersede all other requirements of this program when applicable. It only applies to members of the telecommunications department or their representatives when working in and around

telecommunications vaults or manholes.

When covers of manholes or vaults are removed, the opening must be promptly guarded by a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.

If there is cause to believe that a safety hazard exists while work is being performed in the manhole then a person holding current basic first aid certification shall be immediately available to render assistance. Examples of manhole work site hazards which shall be considered to constitute a safety hazard include, but are not limited to:

1. Manhole work sites where a safety hazard is created by traffic patterns that cannot be corrected by the use of cones or barriers.
2. Manhole work sites that are subject to unusual water hazards that cannot be abated by conventional means.
3. Manhole work sites that are occupied jointly with power utilities as required below

Before a worker enters a manhole or unvented vault, the following steps must be taken:

1. The internal atmosphere must be tested for combustible gas and oxygen deficiency using a triple gas meter.
2, When unsafe conditions are detected by testing or other means, the space shall not be entered until ventilated as specified in the Ventilation section of this document. The space shall be retested and ventilation continued until safe conditions are met.

The space shall be continuously ventilated in accordance with the Ventilation section of this document under the following circumstances:

1. Where combustible or explosive gas vapors have been initially detected and subsequently reduced to a safe level by ventilation.
2. Where organic solvents are used in the work procedure.
3. Where open flame torches are used in the work procedure.
4. Where the manhole is located in that portion of a public right of way open to vehicular traffic and/or exposed to a seepage of gases.
5. Where a toxic gas or oxygen deficiency is found.

While work is being performed in a manhole occupied jointly by an electric conduits and telecommunications conduits, a worker holding basic first aid certification shall be available in the immediate vicinity to render emergency assistance as required. This person is not precluded from occasionally entering the manhole to provide non-emergency assistance.
A qualified person may, for brief periods of time, enter a manhole alone where energized cables or equipment are in service for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely. For these purposes, a qualified person means someone who is trained in basic electrical safety and is recognized by the telecommunications department as

being trained in its operating procedures. If exposed wires greater than fifty volts are in the space, then a qualified person is someone who has achieved journeyman level status as an electrician.

6. TRAINING

Each University unit is responsible for assuring required training is completed for individuals who perform work under this program. All training must be documented with the title of the class, date and the names of the instructors and students. Training documentation must be kept for a minimum of three years from the date of the training. Training requirements and periodicity are summarized below.

All persons subject to this policy - (annually) anyone who acts as an entrant, attendant, entry supervisor or is part of the non-entry rescue team must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.
2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. How to respond to emergencies during confined space entry
5. The use of all personal protective equipment required for entry into a particular space

All persons associated with a LEVEL II or LEVEL III confined space entry - (annually) anyone who acts as an entrant, attendant, entry supervisor or is part of the non-entry rescue team during a LEVEL II or III entry must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.
2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. All the procedures in the emergency action plan
5. How to respond to emergencies during confined space entry
6. The use of all personal protective equipment required for entry into a particular space
7. The use of quad gas meter and/or other atmospheric monitoring equipment deemed necessary by OEHS
8. The use of rescue equipment including retrieval devices
9. The use of portable ventilation equipment
10. The recognition of heat stress and it's first aid

Authorized Entrants - (annually) anyone who acts as an entrant into a LEVEL II or III confined space

must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.
2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. How to respond to emergencies during confined space entry
5. The use of all personal protective equipment required for entry into a particular space
6. The duties of an entrant
7. The particular potential hazards of a confined space entry (as needed). If new hazards are introduced in the space during entry, the entrant must leave the work area in a safe condition and exit. The entrant must then be trained on the precautions and controls for the new hazard prior to reentry.
8. Communication procedures with attendants
9. Performing self-rescue
10. Recognizing possible behavioral effects of hazard exposure in themselves and other authorized entrants

Authorized Attendants - (annually) anyone who acts as an attendant during LEVEL III entry must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.
2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. All the procedures in the emergency action plan
5. How to respond to emergencies during confined space entry
6. The use of all personal protective equipment required for entry into a particular space
7. The duties of an attendant
8. The particular potential hazards of a confined entry space (as needed)
9. Communication procedures with entrants and Facilities Management dispatch
10. Performing non-entry rescues
11. Recognizing possible behavioral effects of hazard exposure in authorized entrants

Entry Supervisors - (annually) anyone who acts as an entry supervisor for LEVEL III confined space must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.

2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. How to respond to emergencies during confined space entry
5. The use of all personal protective equipment required for entry into a particular space
6. The duties of an entry supervisor
7. The particular potential hazards of a confined space entry (as needed)

Non-entry Rescue Team Members - (annually) anyone who is a member of this team must be trained in the following areas:

1. The application of this program and all requirements therein to include the use of the confined space Entry Permit/Log.
2. The recognition of potential confined space hazards
3. The identification of confined spaces to include recognition of LEVEL III space signs and what constitutes a LEVEL I or LEVEL II space
4. How to respond to emergencies during confined space entry
5. The use of all personal protective equipment required for entry into a particular space
6. Confined space non-entry rescue including use of all necessary equipment
7. Cardiopulmonary resuscitation (CPR)
8. First aid (certified)

Note: A practical training exercise must be conducted annually simulating an actual rescue of a person or suitable mannequin in an actual or representative LEVEL III space.

7. References:

OSHA 1910.146

8. University of Utah Contacts:

Jennifer C. Stones, Occupational Safety Manager, OEHS
James Stubbs, Associate Director, OEHS

APPENDIX A

SPECIFIC ENTRY PROCEDURES FOR INDIVIDUAL SPACES

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: COAL BUNKERS

DESCRIPTION: The coal bunkers at the High Temperature Water Plant require periodic inspection for the purpose of determining coal level. Entry may be necessary for maintenance. Past sampling has detected Carbon Monoxide buildup in the bunkers.

POTENTIAL HAZARDS:
engulfment by coal
entrapment by shape
Oxygen deficiency
Carbon Monoxide

ENTRY TYPE: LEVEL III (Entry Permit - sections 1, 3, 5, 6 and 7): entry into the coal bunkers will always require a permit even when empty of coal. The hazards presented by the shape of the bunker cannot be eliminated.

PERSONNEL REQUIRED:
1. authorized entrant(s)
2. attendant
3. entry supervisor (the entry supervisor may also act as the attendant or the authorized entrant)

EQUIPMENT REQUIRED:
1. suitable lighting
2. ventilation blower
3. radio or cellular phone to communicate with emergency services
4. gas monitor
5. PPE (harness, lifeline, respirators)
6. rescue device (tripod)

ENTRY PROCEDURES:
1. Obtain a valid entry pemit (sections 1, 3, 5, 6 and 7)
2. Lockout/tagout conveyor belt
3. Assemble entry team and hold pre-job briefing.
4. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
5. Setup rescue equipment (tripod)
6. Post permit at the entrance
7. Remove access cover
8. Setup blower and ventilate the bunker for 45 minutes. Keep the ventilation on during the entire entry directed near the area of the worker.
9. Test atmosphere with the gas monitor for Oxygen content, flammability, and Carbon Monoxide. Test at various levels and locations. Record results on entry permit.
10. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25 ppm, and Hydrogen Sulfide is less than 10 ppm.
11. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air bottles.
12. Don necessary PPE, harnesses and lifelines
13. Attendant shall monitor the bunker continuously during entry and record results.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

14. The attendant shall communicate verbally with the entrant at least every two minutes.
14. Finish work, cancel permit, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas meter activates (if entrants are not wearing air supplying respirators)
2. the gas monitor fails
3. ventilation or air supply fails
4. entrants show any signs of exposure
5. any violations of the permit conditions occur
6. a hazardous condition arises outside the space

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Attendant Non-entry Rescue: The attendant must order the entrant to evacuate immediately under any of the following conditions:

1. if the attendant detects a prohibited condition
2. if the attendant detects the behavioral effects of hazard exposure in an authorized entrant
3. if the attendant detects a situation outside the space that could endanger the authorized entrants
4. if the attendant cannot effectively and safely perform all the duties required

In the event that an entrant cannot self-rescue, the attendant is to immediately call for emergency assistance. Call Facility Operations dispatch on the radio to summon the on-site rescue team and to summon Salt Lake City Fire Department. If you have a cell phone, call dispatch at 1-7221, and call 911 for emergency services.

The attendant will attempt to remove the entrant by use of the lifeline and lifting device. The attendant must not enter the space unless he/she has been properly trained and is relieved by another qualified attendant.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: HTW Generators and Grate Hopper

DESCRIPTION: The High Temperature Water Generators at the High Temperature Water Plant require occasional entry to service components and clean out ash. There is a 3x3 access manhole on each generator.

POTENTIAL HAZARDS: Oxygen Deficiency
Hazardous or explosive atmosphere from natural gas
Pinch from grate hopper mechanism

WARNING - Gas lines penetrating the HTW Generators must be double blocked and bled, blanked, or have sections of pipe removed prior to entering the tanks. The coal auger and conveyor belt must be tagged out.

ENTRY TYPE: LEVEL II (Entry Log - sections 1, 2, 4 and 7): If gas lines and the coal auger mechanism are double locked/tagged then there is no significant hazard that warrants an entry permit.

PERSONNEL REQUIRED: 1. authorized entrant(s)

EQUIPMENT REQUIRED: 1. gas monitor
2. PPE (respirators will always be used while entering the HTW Generators if there is a significant amount of ash present to prevent uptake of heavy metals)

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Allow generator to cool to ambient.
3. Natural gas supply lines must be double blocked and bled, blanked, or have sections of pipe removed. Lockout/tagout conveyor belt (only the drop down portion) and coal auger (if coal is in the bunker). Lockout the motor controller for the grate hopper mechanism.
4. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
5. Remove cover.
6. Setup blower and ventilate the space for 45 minutes. Keep the ventilation on during the entire entry directed near the area of work.
7. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
8. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm, Hydrogen Sulfide is less than 10ppm and there is minimal ash present.
9. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
10. Don necessary PPE.

11. Monitor space for atmospheric hazards periodically while inside and record

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

hourly.
12. Finish work, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACES:	Flash Tank
POTENTIAL HAZARDS:	Oxygen deficiency steam
DESCRIPTION:	The HTW and the steam generator plants have one flash tank located in the each facility. Steam and water lines penetrate the tanks. There is manhole access on the side. Entry into these tanks is rare. Maintenance and cleaning should be done from outside of the tank if possible.
ENTRY TYPE:	LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the flash tanks will not require full permit procedures when atmospheric hazards can be eliminated by forced air ventilation. WARNING - Steam and water lines penetrating the flash tanks must be double blocked and bled, blanked, or have sections of pipe removed prior to entering the tanks.
Personnel Required:	1. authorized entrant(s)
Equipment Required:	1. gas monitor 2. PPE

Entry Procedures:

1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Steam and water lines penetrating the flash tanks must be double blocked and bled, blanked, or have sections of pipe removed.
3. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
4. Remove cover.
7. Setup blower and ventilate the space for 30 minutes. Keep the ventilation on during the entire entry directed near the area of work.
8. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
9. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm and Hydrogen Sulfide is less than 10ppm.
10. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
11. Don necessary PPE.
12. Monitor space for atmospheric hazards periodically while inside and record hourly.
13. Finish work, close and secure the space.

Emergency Exits: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACES:	Treated Water Tank
POTENTIAL HAZARDS:	Oxygen deficiency water engulfment
DESCRIPTION:	The HTW plant has one treated water tank located on the 3rd floor of the facility. Personnel occasionally need to enter this tank to perform work. The access is on the top of the tank via a ladder on the side of the tank. There is no ladder inside of the tank.
ENTRY TYPE:	LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the flash tanks will not require full permit procedures when atmospheric hazards can be eliminated by forced air ventilation. WARNING - Water lines penetrating the Treated Water Tank must be double blocked and bled, blanked, or have sections of pipe removed prior to entering the tank.
PERSONNEL REQUIRED:	1. authorized entrant(s)
EQUIPMENT REQUIRED:	1. gas monitor 2. PPE 3. ladder or other suitable device for entry and exit
ENTRY PROCEDURES:	1. Obtain a valid entry log (sections 1, 2, 4 and 7). 2. Water lines penetrating the tank must be double blocked and bled, blanked, or have sections of pipe removed. 3. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor. 4. Remove cover. 5. Setup blower and ventilate the space for 30 minutes. Keep the ventilation on during the entire entry directed near the area of work. 6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results. 7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2% and Carbon Monoxide is less than 25ppm. 8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III. 9. Install means for entering or exiting the tank 10. Don necessary PPE if required. 11. Monitor space for atmospheric hazards periodically while inside and record hourly. 13. Finish work, close and secure the space.
EMERGENCY EXITS:	Exit the space immediately if:

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: EXPANSION DRUMS

POTENTIAL HAZARDS: Oxygen deficiency
high temperature water/steam engulfment

DESCRIPTION: The HTW plant has two expansion tanks for the HTW system. They are in parallel with a crossover pipe between them Personnel occasionally need to enter these tanks to perform work. The tanks have two access ports, one on either side of the drum.

ENTRY TYPE: LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the expansion drums will not require full permit procedures when atmospheric hazards can be eliminated by forced air ventilation.

WARNING - Water/steam lines penetrating the expansion drums must be double blocked and bled, blanked, or have sections of pipe removed prior to entering the tank.

PERSONNEL REQUIRED: 1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Water lines penetrating the tank must be double blocked and bled, blanked, or have sections of pipe removed.
3. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
4. Remove cover.
5. Setup blower and ventilate the space for 30 minutes. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm and Hydrogen Sulfide is less than 10ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: CYCLONE SEPARATOR

POTENTIAL HAZARDS: Oxygen deficiency

DESCRIPTION: The HTW plant has three cyclone separators located on the 2nd floor of the facility. They are at the base of the smoke stacks. Access is via side panels that are raised off the ground.

ENTRY TYPE: LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the cyclone separators will not require full permit procedures when atmospheric hazards can be eliminated by forced air ventilation.

PERSONNEL REQUIRED:
1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE
3. scaffolding or other suitable device for access.

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
3. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
4. Remove side panel
5. Setup blower and ventilate the space for 30 minutes. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm and Hydrogen Sulfide is less than 10ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: STEAM MANHOLES

POTENTIAL HAZARDS: Oxygen deficiency
heat injuries
steam burns

DESCRIPTION: The University has a dedicated steam system supplying a few of the older buildings on campus. Many components of the system are accessed via man holes. Most of the manholes can be cooled to near ambient temperatures with ventilation. This procedure does not apply to the following situations:

1. if the manhole, because of its configuration, cannot be cooled by forced ventilation to a level that is comfortable to the workers or has the potential for heat injuries (heat stress monitoring may be necessary on a case by case basis)
2. the manhole has a known steam leak
3. if the steam system is to be breeched during entry

ENTRY TYPE: LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into these steam manholes will not require full permit procedures when forced air ventilation can eliminate atmospheric hazards and can control temperature.

PERSONNEL REQUIRED: 1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE if required (gloves and long sleeves if piping is hot)
3. ventilation blower and associate equipment

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Remove manhole cover.
4. Set up manhole barrier.
5. Setup blower and ventilate the manhole for the time specified in the ventilation section base upon it's size. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm and Hydrogen Sulfide is less than 10ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.
10. If the temperature of the space cannot be maintained at a point which is comfortable to work in using forced ventilation then evacuate the space and

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

contact the Department and EHS for space reevaluation. Heat stress monitoring may be required on a case by case basis.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: STEAM MANHOLES THAT:

1. BECAUSE F THEIR CONFIGURATION, CANNOT BE COOLED BY FORCED VENTILATION TO A LEVEL THAT IS COMFORTABLE TO THE WORKERS OR HAS THE POTENTIAL FOR HEAT INJURIES.
2. HAVE A KNOWN STEAM LEAKS WHICH MAY POSE A DANGER.
3. REQUIRE THE STEAM SYSTEM TO BE BREECHED DURING ENTRY.

POTENTIAL HAZARDS:

Oxygen deficiency
heat injuries
steam burns

DESCRIPTION:

The University has a dedicated steam system supplying a few of the older buildings on campus. Many components of the system are accessed via man holes. This procedure applies to the following situations:

1. If the manhole, because of its configuration, cannot be cooled by forced ventilation to a level that is comfortable to the workers or has the potential for heat injuries. Heat stress monitoring may be necessary on a case by case basis.
2. The manhole has a known steam leaks.
3. If the steam system is to be breeched during entry.

ENTRY TYPE:

LEVEL III (Entry Permit - sections 1, 3, 5, 6 and 7): entry into steam manholes under these conditions will always require a permit due to the potential for steam burns or heat injuries.

WARNING - Steam lines penetrating the manhole that are leaking or that must be breeched must be double blocked and bled, blanked, or have sections of pipe removed prior to entering the manhole.

WARNING - Another means of protection from heat injuries will be required if the temperature in the manhole cannot be brought to an acceptable level prior to entry. This may include an entry time limit, the use of approach suits and/or heat stress monitoring.

PERSONNEL REQUIRED:

1. authorized entrant(s)
2. attendant
3. entry supervisor (the entry supervisor may also act as the attendant or the authorized entrant)

EQUIPMENT REQUIRED:

1. suitable lighting
2. ventilation blower
3. radio or cellular phone to communicate with emergency services and radio dispatch
4. gas monitor
5. PPE (harness, lifeline, respirators) (gloves and long sleeves if piping is hot)

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

6. rescue device (tripod)
7. heat stress monitor (if required)
8. a means to communicate between attendant and entrant(s)

ENTRY PROCEDURES:

1. Obtain a valid entry pemit (sections 1, 3, 5, 6 and 7).
2. Assemble entry team and hold pre-job briefing.
3. Isolate the manhole (double block and bleed the steam line to be breeched or repaired if applicable).
4. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
4. Setup rescue/lowering equipment (tripod) at the entrance.
5 Post permit at the entrance.
6. Remove manhole cover.
7. Set up manhole opening barrier.
8. Test atmosphere with the gas monitor for Oxygen content, flammability, and Carbon Monoxide. Test at various levels and locations. Record results on entry permit.
9. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25 ppm and Hydrogen Sulfide is less than 10 ppm.
11. Don appropriate PPE.
10. Attendant shall monitor the manhole continuously during entry and record results hourly.
11. The attendant shall communicate verbally with the entrant at least every two minutes.
12. Finish work, cancel permit, close and secure the space.

EMERGENCY EXITS:

Exit the space immediately if:

1. the alarm on the gas monitor activates (if entrants are not wearing air supplying respirators)
2. the gas monitor fails
3. ventilation or air supply fails
4. entrants show any signs of exposure
5. any violations of the permit conditions occur
6. a hazardous condition arises outside the space
7. if the air supply to the respirators fails

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Attendant Non-entry Rescue: The attendant must order the entrant to evacuate

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

immediately under any of the following conditions:

1. if the attendant detects a prohibited condition
2. if the attendant detects the behavioral effects of hazard exposure in an authorized entrant
3. if the attendant detects a situation outside the space that could endanger the authorized entrants
4. if the attendant cannot effectively and safely preform all the duties required

In the event that an entrant cannot self-rescue, the attendant is to immediately call for emergency assistance. Call Facility Operations dispatch on the radio to summon the on-site rescue team and to summon Salt Lake City Fire Department. If you have a cell phone, call dispatch at 1-7221, and call 911 for emergency services.

The attendant will attempt to remove the entrant by use of the lifeline and lifting device. The attendant must not enter the space unless he/she has been properly trained and is relieved by another qualified attendant.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: HIGH TEMPERATURE WATER MANHOLES

POTENTIAL HAZARDS:
Oxygen deficiency
heat injuries
burns

DESCRIPTION:
The University has a high temperature water system that provides hot pressurized water to several steam generators on campus for the purpose of heating buildings. Several manholes provide access to various parts of the system. These manholes have two entrance points to facilitate cooling.

ENTRY TYPE:
LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the high temperature water manholes will not require full permit procedures when forced air ventilation can eliminate atmospheric hazards and can control temperature.

PERSONNEL REQUIRED:
1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE if required (gloves and long sleeves if piping is hot)
3. ventilation blower and associate equipment

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Remove manhole covers
4. Set up manhole barriers
5. Setup blower and ventilate the space for the time specified in the ventilation section base upon the size of the manhole. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, and Carbon Monoxide (in that order). Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III. Contact the Department and EHS for space reevaluation.
9. Don necessary PPE if required.
10. If the temperature of the space cannot be maintained at a point which is comfortable to work in using forced ventilation then evacuate the space and contact the Department and EHS for space reevaluation. Heat stress monitoring may be required on a case by case basis.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

EMERGENCY EXITS:

Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: EMERGENCY ENTRY INTO HIGH TEMPERATURE WATER MANHOLES

POTENTIAL HAZARDS:
Oxygen deficiency
heat injuries
burns

DESCRIPTION:
In order to enter the manhole in a timely manner, ventilation will not be required prior to entry. It is assumed that the manhole will be very hot. The use of air-supplied respirators and approach suits is therefore required for all entrants.

WARNING - This procedure is only applied in emergency situations where the need to rapidly enter a HTW manhole is required to protect life and to prevent major property damage. It may be required due to a HTW leak in order to isolate a section of the system.

ENTRY TYPE:
Modified LEVEL III (Entry Permit - sections 1, 3, 5, 6 and 7): Due to the rapid nature of this entry, the entry permit will be filled out after the entry is made. Entry Supervisor (or HTW manager) authorization can be made verbally.

PERSONNEL REQUIRED:
1. authorized entrant(s)
2. attendant
3. entry supervisor (the entry supervisor may also act as the attendant or the authorized entrant)

EQUIPMENT REQUIRED:
1. approach suit
2. ventilation blower
3. radio or cellular phone to communicate with emergency services and radio dispatch
4. gas monitor
5. PPE (harness, lifeline, air-supplied respirators) (gloves and long sleeves if piping is hot)
6. rescue device (tripod)
7. a means to communicate between attendant and entrant(s)

ENTRY PROCEDURES:
1. Assemble entry team and hold pre-job briefing.
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Setup rescue/lowering equipment (tripod) at the entrance
4. Don necessary PPE to include air supplied respirators and approach suit
5. Remove manhole covers.
6. Enter the space and complete work as quickly as possible.
7. The attendant shall communicate verbally with the entrant at least every two minutes.
8. Finish work, cancel permit, close and secure the space.

EMERGENCY EXITS:
Exit the space immediately if:

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

1. air supply fails
2. entrants show any signs of exposure
3. a hazardous condition arises outside the space

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Attendant Non-entry Rescue: The attendant must order the entrant to evacuate immediately under any of the following conditions:

1. if the attendant detects a prohibited condition
2. if the attendant detects the behavioral effects of hazard exposure in an authorized entrant
3. if the attendant detects a situation outside the space that could endanger the authorized entrants
4. if the attendant cannot effectively and safely preform all the duties required

In the event that an entrant cannot self-rescue, the attendant is to immediately call for emergency assistance. Call Facility Operations dispatch on the radio to summon the on-site rescue team and to summon Salt Lake City Fire Department. If you have a cell phone, call dispatch at 1-7221, and call 911 for emergency services.

The attendant will attempt to remove the entrant by use of the lifeline and lifting device. The attendant must not enter the space unless he/she has been properly trained and is relieved by another qualified attendant.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: STORM DRAIN MANHOLES

POTENTIAL HAZARDS: Oxygen deficiency
water engulfment

DESCRIPTION: The University storm drain system is accessed via several manholes located throughout campus

ENTRY TYPE: LEVEL III (Entry Permit - sections 1, 3, 5, 6 and 7): entry into the storm drain manholes will require a permit unless the possibility of water engulfment is remote. In such cases, the program administrator or designee has discretion to downgrade the space to a LEVEL II entry (Entry Log - sections 1, 2, 4 and 7).

LEVEL III ENTRY PROCEDURES

PERSONNEL REQUIRED:

1. authorized entrant(s)
2. attendant
3. entry supervisor (the entry supervisor may also act as the attendant or the authorized entrant)

EQUIPMENT REQUIRED:

1. suitable lighting
3. radio or cellular phone to communicate with emergency services
4. gas monitor
5. PPE (harness, lifeline, respirators)
6. rescue device (tripod)

ENTRY PROCEDURES:

1. Obtain a valid entry permit (sections 1, 3, 5, 6 and 7).
2. Assemble entry team and hold pre-job briefing.
3. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
4. Setup rescue equipment (tripod)
5. Isolate the space to the extent possible and post permit at the entrance.
   NOTE: Storm drains cannot normally be fully isolated.
6. Remove manhole cover.
7. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Test at various levels and locations. Record results on the permit.
8. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25 ppm and Hydrogen Sulfide is less than 10 ppm.
9. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air bottles.
10. Don necessary PPE, harnesses and lifelines.
11. Attendant shall monitor the bunker continuously during entry and record results.
12. The attendant shall communicate verbally with the entrant at least

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

every two minutes.
13. Finish work, cancel permit, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates (if entrants are not wearing air supplying respirators)
2. the gas monitor fails
3. ventilation or air supply fails
4. entrants show any signs of exposure
5. any violations of the permit conditions occur
6. a hazardous condition arises outside the space
7. there is any sign of inclement weather

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Attendant Non-entry Rescue: The attendant must order the entrant to evacuate immediately under any of the following conditions:

1. if the attendant detects a prohibited condition
2. if the attendant detects the behavioral effects of hazard exposure in an authorized entrant
3. if the attendant detects a situation outside the space that could endanger the authorized entrants
4. if the attendant cannot effectively and safely preform all the duties required

In the event that an entrant cannot self-rescue, the attendant is to immediately call for emergency assistance. Call Facility Operations dispatch on the radio to summon the on-site rescue team and to summon Salt Lake City Fire Department. If you have a cell phone, call dispatch at 1-7221, and call 911 for emergency services.

The attendant will attempt to remove the entrant by use of the lifeline and lifting device. The attendant must not enter the space unless he/she has been properly trained and is relieved by another qualified attendant.

LEVEL II ENTRY PROCEDURES (RECLASSIFIED FROM LEVEL III)

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

PERSONNEL REQUIRED:

1. authorized entrant(s)

EQUIPMENT REQUIRED:

1. gas monitor
2. PPE if required
3. ventilation blower and associated equipment

ENTRY PROCEDURES:

1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Program administrator or designee must certify that the possibility for water engulfment is remote and reclassify the space to LEVELII. EHS is not required to give concurrence in this specific case.
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Remove manhole covers.
4. Set up manhole barriers.
5. Setup blower and ventilate the space for the time specified in the ventilation section base upon the size of the manhole. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS:

Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES:

Self Rescue: The best rescue is a self rescue. The authorized entrant must

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: SEWER MANHOLES

POTENTIAL HAZARDS:
Oxygen deficiency
Hydrogen Sulfide (If sewer is leaking)

DESCRIPTION:
The University sewer system is accessed via manholes located throughout campus. The sewer is a piped system.

ENTRY TYPE:
LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the sewer manholes will not require full permit procedures when forced air ventilation can eliminate atmospheric hazards.

WARNING: If the sewer is leaking the potential for hydrogen sulfide buildup can exist. This would then become a LEVEL III.

PERSONNEL REQUIRED:
1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE if required
3. ventilation blower and associated equipment

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Remove manhole covers.
4. Set up manhole barriers.
5. Setup blower and ventilate the space for the time specified in the ventilation section base upon the size of the manhole. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.
10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS:
Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

CONFINED SPACE: ELECTRICAL VAULTS (UNVENTED) AND ELECTRICAL MANHOLES

POTENTIAL HAZARDS:
Oxygen deficiency
electrical shock

DESCRIPTION:
The University has several vaults and manholes for the electrical distribution system.

NOTE: This procedure only applies to unvented electrical vaults and manholes. If the vault has an exhaust fan then it will be considered a LEVEL I space and no specific entry procedures are required except as described in the following two notes.

NOTE: Electrical vaults and manholes that contain exposed energized parts are required to be locked. In order to work on or near the exposed energized parts, the worker must have a journeyman level accreditation as an electrician.

NOTE: Workers must be protected against accidental contact with exposed energized parts (not associated with the maintenance) in confined spaces by using protective shields, protective barriers, or insulating materials as necessary.

ENTRY TYPE:
LEVEL II (Entry Log - sections 1, 2, 4 and 7): entry into the unvented electrical vaults and electrical manholes will not require full permit procedures when forced air ventilation can eliminate atmospheric hazards and the entrant is qualified.

PERSONNEL REQUIRED:
1. authorized entrant(s)

EQUIPMENT REQUIRED:
1. gas monitor
2. PPE if required
3. ventilation blower and associated equipment if required

ENTRY PROCEDURES:
1. Obtain a valid entry log (sections 1, 2, 4 and 7).
2. Obtain and verify working condition of necessary equipment. Also, verify the yearly calibration of the gas monitor.
3. Remove manhole covers if applicable
4. Set up manhole barriers if applicable
5. Setup blower and ventilate the space for the time specified in the ventilation section base upon the size of the manhole. Keep the ventilation on during the entire entry directed near the area of work.
6. Test atmosphere with the gas monitor for Oxygen content, flammability, Carbon Monoxide and Hydrogen Sulfide. Record results.
7. Entry without respiratory protection is allowed if Oxygen content is more than 19.5% and less than 23.5%, flammability is less than 2%, Carbon Monoxide is less than 25ppm and Hydrogen Sulfide is less than 10 ppm.
8. If ventilation does not eliminate the atmospheric hazards, entry must be made by entrants wearing air supplying respirators with emergency air packs. This entry would then become LEVEL III.
9. Don necessary PPE if required.

WARNING: IF HAZARDS ARE INTRODUCED INTO A SPACE SUCH AS FROM WELDING, USING SOLVENTS OR OTHER VOLATILE CHEMICALS, BY THE PRESENCE OF EXPOSED ELECTRICAL CONNECTIONS OR OTHER ABNORMAL CONDITIONS THEN THE SPACE MUST BE REEVALUATED AND THIS PROCEDURE MODIFIED TO ADDRESS THESE ISSUES.

10. Monitor space for atmospheric hazards periodically while inside and record hourly.
11. Finish work, close and secure the space.

EMERGENCY EXITS: Exit the space immediately if:

1. the alarm on the gas monitor activates
2. the gas monitor fails
3. ventilation fails
4. entrants show any signs of exposure

Re-entry cannot take place until the space is evaluated to determine how a hazardous atmosphere developed and measures taken to protect employees.

RESCUE PROCEDURES: Self Rescue: The best rescue is a self rescue. The authorized entrant must exit from the permit space as quickly as possible whenever:

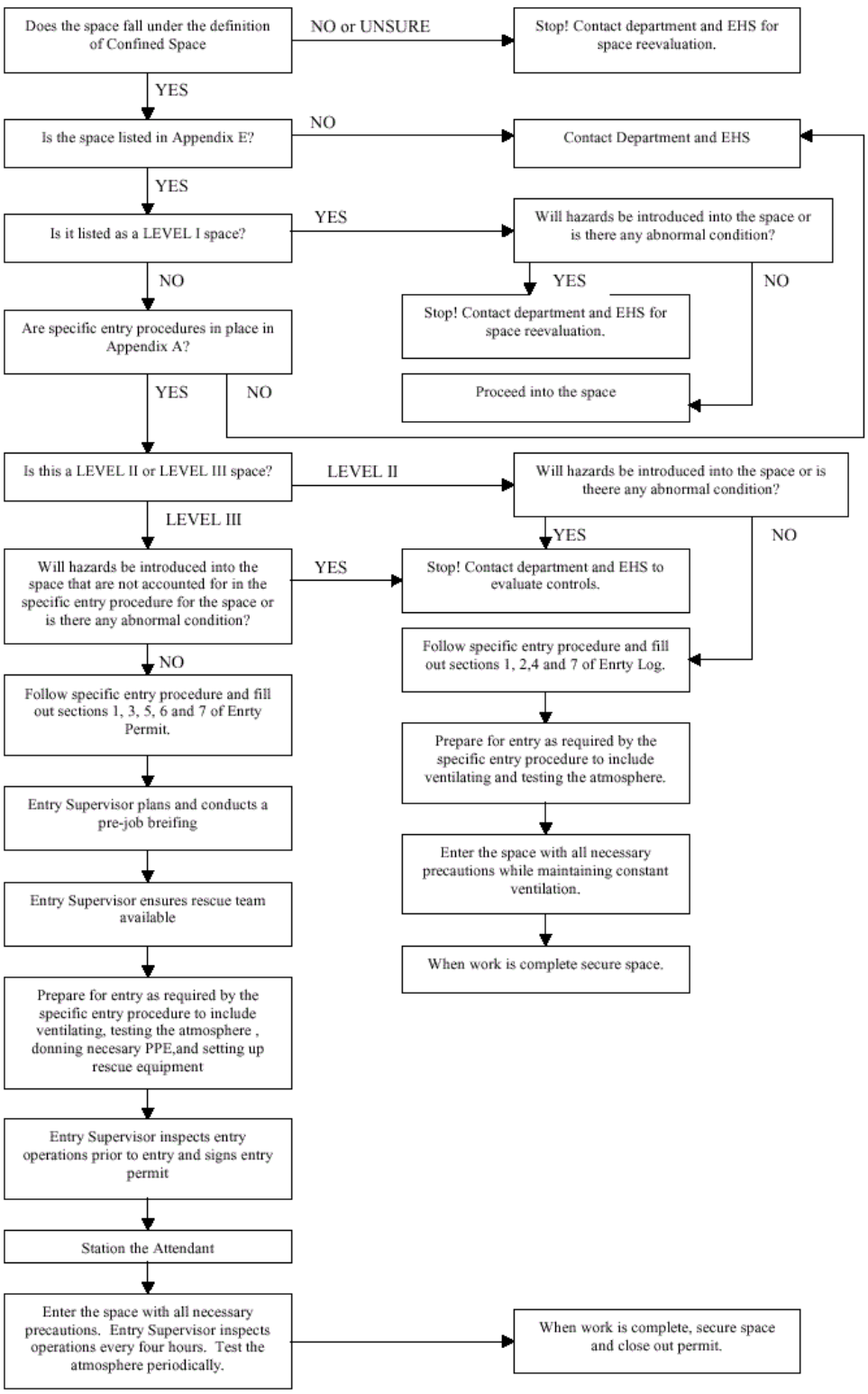
1. an order to evacuate is given by the attendant or entry supervisor
2. the entrant recognizes any warning sign or symptom of exposure to a dangerous situation
3. the entrant detects a prohibited condition

Stand-by rescue services are not required in a LEVEL II entry.

APPENDIX B

CONFINED SPACE FLOWCHART

Confined Space Flowchart



APPENDIX C

ENTRY PERMIT/LOG INSTRUCTIONS

CONFINED SPACE ENTRY PERMIT/LOG INSTRUCTIONS

NOTE: The Entry Permit/Log form serves as an Entry Log for LEVEL II confined space entry and a Entry Permit for LEVEL III confined space entry. Sections 1, 2, 4 and 7 constitute an Entry Log and sections 1, 3, 5, 6 and 7 an Entry Permit.

NOTE: Additional sheets may be used if needed.

LEVEL II Entry - Entry Log Instructions

NOTE: An Entry Log is completed by the authorized entrant(s)

SECTION 1 - GENERAL INFORMATION

Space to be Entered	Identify the space to be entered by looking in Appendix E e.g. Steam Manhole S MH-1
Department	The Department which requires entry into the confined space
Location/Building	Where the confined space is located
Date of Entry	The actual date of entry
Log No.	The next log number in the Department's sequence (Departments are responsible for developing their own filing system)
Purpose of Entry	Reason entry into the confined space is needed e.g. repack valve
Contractor Job	If a contractor to the University is using the University's confined space program to enter the space mark "Yes".
Authorized Duration of Log	The time interval that the entry the Entry Log is active for. For an Entry Log the time stop can be completed when the job is completed. The time interval can not exceed 8 hours. If more time is required, a new Entry Log must be initiated.

SECTION 2 - ENTRY LOG DATA

NOTE: This section is for recording that the prerequisites are completed prior to entry and the atmospheric data collected.

Can this be a LEVEL II entry?	Do the specific instructions in Appendix A specify this confined spaces as a LEVEL II entry? If not circle "No" and proceed as a LEVEL III entry using Section 3 or contact the Department and EHS for space evaluation.
Barrier set up at entrance?	Is the barrier set up at the entrance once the cover is removed as required by LEVEL entry procedures?
Ventilated prior to entry?	Is the space ventilated prior to entry in accordance with the specific entry procedures and/or the ventilation section?
No introduced hazards?	Will hazards be introduced into the space that are not accounted for in the specific entry procedures? If so, space reevaluation and specific controls must be in place prior to entry.
Person making initial atmospheric survey	The person conducting the initial atmospheric survey must print and sign their name verifying acceptable entry conditions are present in the space prior to entry.
Initial survey	Initial atmospheric survey results. Spaces are provided for four different sample locations.
Survey data	Hourly atmospheric survey results. Each data point must be initialed by the entrant taking the measurement.
Temperature in the Space Acceptable?	The temperature in the space must be comfortable to work in. Heat stress monitoring may be necessary. Contact EHS for assistance.

SECTION 4 - ENTRY LOG

Entry log	Each entrant must print and sign their name and log the time of entry and exit. This must be done for each entry.

SECTION 7 - REMARKS

Remarks	Explain any special controls necessary for safe entry other than those specified in Section 2. If the space is being reclassified to a LEVEL I space then explain the justification. Note: If hazards are introduced into the space that are not accounted for in the specific entry procedures then the space requires reevaluation to institute special controls or may require reclassification.
Signature	The program administrator or their designee must authorize the space reclassification.
EHS concurrence given	EHS must concur with all reclassifications

LEVEL III Entry - Entry Permit Instructions

SECTION 1 - GENERAL INFORMATION

Space to be Entered	Identify the space to be entered by looking in Appendix E e.g. Steam Manhole S MH-1
Department	The Department which requires entry into the confined space
Location/Building	Where the confined space is located
Date of Entry	The actual date of entry
Log No.	The next permit number in the Department's sequence (Departments are responsible for developing their own filing system)
Purpose of Entry	Reason entry into the confined space is needed e.g. repack valve
Contractor Job	If a contractor to the University is using the University's confined space program to enter the space mark "Yes".
Authorized Duration of Permit	The time interval that the entry the Entry Permit is active for. The time interval can not exceed 8 hours. If more time is required, a new Entry Permit must be initiated.

SECTION 3 - ENTRY PERMIT DATA

Note: This section is completed by the program administrator or designee and/or entry supervisor

Potential Hazards Present	Check all potential hazards present. The normal hazards are listed in the specific entry procedures. If hazards other than those listed in the specific entry procedures are anticipated then the Department must reevaluate the space to ensure adequate controls are in place.
Controls in Place	Check if controls are in place to mitigate the potential hazards. Write a very brief description of the controls in the space provided e.g. lock out/tag out
Equipment	Check all equipment that is required for the entry. The specific entry procedure should also contain this information.
Hazards Introduced by Nature of Work	Check all hazards that will be introduced during the entry. Any introduced hazards require space reevaluation by the Department with the assistance of EHS.
Pre-job Requirements	Check each pre-job requirement as it is completed. Line out and initial any non applicable requirements.
Authorized Attendants/Entrants	All authorized attendants and entrants must be identified prior to entry.
Person making initial atmospheric survey	The person conducting the initial atmospheric survey must print and sign their name verifying acceptable entry conditions are present in the space prior to entry.
Survey data	Hourly atmospheric survey results. Each data point must be initialed by the entrant taking the measurement.

Temperature in the Space Acceptable?	The temperature in the space must be comfortable to work in. Heat stress monitoring may be necessary. Contact EHS for assistance.
Authorization by Entry Supervisor	The entry supervisor must verify that all entry prerequisites are completed, safety precautions are taken and acceptable entry conditions exist in the space prior to entry.

SECTION 5 - ATTENDANT LOG

Attendant log	Each attendant must print and sign their name and log the time of start and stop. This must be done for each period of duty. There can be no time gaps between attendant shifts. NOTE: An attendant can only be relieved by a qualified and authorized attendant.

SECTION 6 - ENTRY LOG

Entry log	Each entrant must print and sign their name and log the time of entry and exit. This must be done for each entry.

SECTION 7 - REMARKS

Remarks	Explain any special controls necessary for safe entry other than those specified in Section 3. If the space is being reclassified to a LEVEL I space then explain the justification. Note: If hazards are introduced into the space that are not accounted for in the specific entry procedures then the space requires reevaluation to institute special controls or may require reclassification.
Signature	The program administrator or their designee must authorize the space reclassification.
EHS concurrence given	EHS must concur with all reclassifications

APPENDIX D

ENTRY PERMIT/LOG

UNIVERSITY OF UTAH CONFINED SPACE ENTRY PERMIT/LOG

SECTION 1: GENERAL INFORMATION

Date of Entry: / /

Permit/Log No.

Space to be Entered:

Purpose of Entry:

Department:

Location/Building:

Contractor Job: (circle) Yes No

Authorized Duration of Permit/Log (8 hours max.) - Start Time: Stop Time:

SECTION 2: ENTRY LOG DATA (only applicable for those spaces identified as LEVEL II confined spaces)

Can this be a LEVEL II entry (see specific entry requirements for individual spaces)? If "NO" go to SECTION 3. (circle) Yes No

Barrier set up at entrance ☐ Ventilated prior to entry ☐ No introduced hazards ☐

Person conducting initial atmospheric survey: Print: Sign:

Acceptable Conditions	Initial Survey:				1st hr ■		2nd hr ■		3rd hr ■		4th hr ■		5th hr ■		6th hr ■		7thhr ■		8thhr ■	
O_2%																				
Flammability <10%																				
CO																				
H_2S																				

Is the initial temperature in the space acceptable?: (circle) Yes No

Access Log on Back

■ Initial of person making survey

SECTION 3: ENTRY PERMIT DATA AND AUTHORIZATION (applicable for those space identified as LEVEL III confined spaces)

Potential Hazard Present (see specific entry requirements for individual spaces)

☐ Oxygen Deficiency	<19.5%
☐ Oxygen Enrichment	>23.5%
☐ Flammable Gases or Vapors ☐ Airborne Combustible Dust ☐ Toxic Gases or Vapors	>10% of LEL
	>LEL
☐ Mechanical Hazards	>PEL
☐ Electrical Shock	or
☐ Materials Harmful to Skin	>25ppm CO
☐ Engulfment	or
☐ Entrapment	>10ppm H_2S
☐ Heat (use WGBT)	
☐ Other:_____	

Controls in Place

☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____
☐ _____

Hazards Introduced by Nature of Work

☐ Hot Work ☐ Toxic Chemical
☐ Solvents ☐ Mechanical Hazards
☐ Paints ☐ Other: _____

Authorized Entrants:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Prejob Requirements:

☐ Pre-job briefing
☐ Opening barricaded
☐ Ventilated for indicated time
☐ Communication between attendant and base
☐ Communication between attendant and entrant
☐ Lockout/tagout to greatest extent possible
☐ Initial atmospheric test complete
☐ Tripod and wench setup (>5ft vertical)
☐ Other mechanical retrieval device in place
☐ Rescue team available
☐ Required training up-to-date
☐ Respirator fit testing completed as appropriate
☐ Hot work permit obtained if appropriate

Other:

☐ _____
☐ _____
☐ _____
☐ _____
_____

Equipment:

Emergency information: IN THE EVENT THAT AN

☐ Airline-Respirator
☐ Air Purifying Respirator
☐ Hearing Protection
☐ Face Shield
☐ Safety Glasses
☐ Head Protection
☐ Gloves
☐ Other:_____

Other:

☐ Tripod and Wench
☐ Safety Harness
☐ Rope
☐ Flashlights
☐ Radios
☐ Barricades
☐ Signs
☐ Fire Extinguisher
☐ Other:_____

Authorized Attendants:

_____
_____
_____
_____
_____
_____
_____

SECTION 4:

LEVEL II CONFINED SPACE ENTRY LOG

	Name	Sign	Time In	Time Out		Name	Sign	Time In	Time Out
1					11				
2					12				
3					13				
4					14				
5					15				
6					16				
7					17				
8					18				
9					19				
10					20				

SECTION 5:

LEVEL III CONFINED SPACE ATTENDANT LOG

	Name	Sign	Time Start	Time Stop		Name	Sign	Time Start	Time Stop
1					11				
2					12				
3					13				
4					14				
5					15				
6					16				
7					17				
8					18				
9					19				
10					20				

SECTION 6:

LEVEL III CONFINED SPACE ENTRY LOG

	Name	Sign	Time In	Time Out		Name	Sign	Time In	Time Out
1					11				
2					12				
3					13				
4					14				
5					15				
6					16				
7					17				
8					18				
9					19				
10					20				

SECTION 7:

REMARKS

(explain any special controls, the methods use to isolate the space, and/or the justification for changing the classification of a confined space)

APPENDIX E

CONFINED SPACES LISTING

This report is in a separate file.