Confined Space Entry Policy

1. **APPLICABLE DOCUMENTS**
   a. 29 CFR Part 1910.146 "Permit-Required Confined Spaces"
   b. "Confined Space Entry Program Guide" published by the Indiana Bureau of Safety Education and Training of the Indiana Department of Labor

2. **PURPOSE**
   a. This standard establishes the minimum requirements for Confined Space entry on Manchester College property. These requirements pertain to, but are not limited to, confined spaces such as tanks, boilers, pits, transformer vaults, or utility manholes.

3. **POLICY**
   a. Confined space entries at Manchester College shall be under the supervision of the Physical Plant. The Physical Plant shall implement the procedures outlined in this document. All Manchester College employees shall follow this policy.
   b. Confined spaces at Manchester College are of two types: non-permit-required and permit-required. The known permit-required confined spaces at Manchester College are listed in Attachment A.
   c. Prior to entering a non-permit-required confined space, the confined space is to be checked for any perceivable hazards (see "Confined Space and Permit-Required Defined Space Recognition Form"). If hazards appear to be present, the confined space will be treated as though it were a "Previously Unidentified Permit-required Confined Space." The entry supervisor will then determine the hazards present, the equipment to be used, and the appropriate procedures to use. The hazards, equipment, and procedures will be documented and used in a reclassification of the space to a permit-required space for future entries.
   d. Prior to entering a permit-required confined space the entry supervisor is to fill out a "Confined Space Entry Permit" and the "Confined Space Hazards, Equipment, Procedures Checklist" for the particular confined space. A check of the confined space will be performed (including atmospheric testing) by the entry supervisor. Prior to entry, the "Confined Space Hazard, Procedures, and checklist" document pertaining to the space will be read by the entry supervisor, attendant, and all authorized entrants. The supervisor is to make sure all required equipment is present and used properly.
   e. If the confined space exhibits no potential hazards, it may be reclassified by the entry supervisor as a non-permit-required confined space. To be reclassified as a non-permit-required confined space, the entry supervisor must fill out a "confined space reclassification form."
   f. Before any welding or cutting is preformed in a confined space, a "Welding/Cutting Permit for Confined Spaces" must be filled out by the entry supervisor, in addition to any permits for entering the confined space.
   g. Entry permits and permit procedures are to be reviewed at least yearly by the Director of the Physical Plant and the Director of the Department of Safety and Security. At this time, any necessary changes to entry procedures will be made. If an entry must be aborted for any reason, the Director of the Department of Safety and Security will review the documents for the particular confined space and, in conjunction with the Director of the Physical Plant, make any modifications necessary to entry documents. All permits or documents pertaining to a confined space entry will be maintained on file at the Physical Plant Office for a period of at least one year. Any permits or documents turned in to the Director of Safety and Security will be put on file in the Physical Plant Office after being reviewed.

   h. Training will be provided on at least a yearly basis. Each trainee will be trained in all aspects of permit-required confined space entry. New employees must receive training before participating in any confined space entries.
   i. All practices established by this standard are expected to be retained and demonstrated by each member of the entry team.

4. **DEFINITIONS**

a. ATTENDANT - an individual stationed outside the permit-required confined space, who had specific training, and who monitors the authorized entrants inside the space.

b. AUTHORIZED ENTRANT - An employee who is trained and authorized by Manchester College to enter a permit-required space.

c. CONFINED SPACE - a space that meets all the following criteria:
   - i. is large enough to bodily enter and perform work;
   - ii. has limited means of entry and egress; and
   - iii. is not designed for continuous employee occupancy.

d. CONFINED SPACE RECLASSIFICATION FORM - a form required to be filled out by an entry supervisor to reclassify a permit-required confined space as a non-permit-required confined space. The duration of the reclassification is only for one entry. The form is used to document the testing of the confined space prior to the reclassification. This document must be taken to the Security Office after the entry is concluded.

e. ENGULFMENT - surrounding and effective capture of a person by a liquid or finely divided solid substance.

f. ENTRY - The act of a person intentionally passing though an opening into a permit-required confined space.

g. ENTRY PERMIT - a written or printed document provided by Manchester College to allow and control entry into a permit space. The document is available from the Physical Plant. The document must be returned to the Physical Plant Office after expiration of the permit.

h. ENTRY SUPERVISOR - person responsible for:
   - i. filling out the necessary permits and forms;
   - ii. determining if acceptable conditions are present before entering a permit space;
   - iii. for authorizing entry;
   - iv. designating the attendant and any authorized entrants;
   - v. overseeing entry operations; and
   - vi. terminating entry.

i. HAZARDOUS ATMOSPHERE - an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness.

j. IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH) - any condition that poses an immediate or delayed threat to life, or that would cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a permit space.

k. LOWER EXPLOSIVE LIMIT (LEL) - the lowest concentration of gas or vapor, expressed in percent by volume in air, that burns or explodes if an ignition source is present at room temperature.

l. NON-PERMIT-REQUIRED CONFINED SPACE - a confined space which exhibits no potential hazards as listed in the "Confined Space and Permit-required Confined Space Recognition Form." Continual monitoring of the conditions are required to assure that the space still poses no hazard to the authorized entrants.

m. OXYGEN DEFICIENT ATMOSPHERE - an atmosphere containing less that 19.5 % oxygen.

n. PERMIT-REQUIRED CONFINED SPACE - a confined space that has one or more of the following characteristics:
   - i. contains or has a reasonable potential for hazardous atmospheres;
   - ii. contains a material that has the potential for engulfment;
   - iii. is internally configured so an employee could become trapped or asphyxiated by inwardly converging walls or a floor that slopes downward into a smaller cross section; or
   - iv. contains any other recognized serious safety or health hazard.

o. PROHIBITED CONDITION - any condition in a permit space that would deny entry into the confined space.

p. RESCUE SERVICE - any service called to the confined space by the 911 operator.

q. TESTING - process by which hazards are identified and evaluated that may affect entrants of a permit space.

r. WELDING/CUTTING PERMIT - written authorization to perform operations that can provide a source of ignition (e.g., welding, cutting, burning, or heating) or a hazardous atmosphere.

5. **THE PERMIT-REQUIRED CONFINED SPACES PROGRAM**

a. The Permit-required Confined Space Entry Program consists of procedures to communicate the program requirements to all Manchester College employees, as well as contractors. The program consists of the following elements:

i. Confined Space Entry Requirements as outlined in this document;
ii. Confined Space Entry Permit (for College personnel);
iii. Contractor's Confined Space Entry Permit;
iv. Confined Space Hazards, Equipment and Procedures Checklists;
v. Confined Space Reclassification Form;
vi. Confined Space and Permit-Required Confined Space Recognition Form; and
vii. Welding/Cutting Permit for Confined Spaces.

b. Entry Requirements, Procedures, and Techniques

i. The purpose of this program is to ensure the proper entry, work practices and exit from confined spaces.

ii. Labeling Requirements

(1) Where reasonable, each permit-required confined space should be labeled, indicating that special precautions must be taken prior to entering the space. The sign for each space will read: "**DANGER Confined Space Enter by Permit Only**"

(2) Some variation will be allowed as long as the general message is clearly conveyed.

iii. Atmospheric Requirements Prior to Entry

(1) Before entering, the following atmospheric conditions must be met:

(a) oxygen level between 19.5% and 23.5%;
(b) flammable gas, vapor, or mist below 10% of its LEL;
(c) airborne combustible dusts which exceed their lower flammable limit. This limit is approximated as a condition in which dust obscures vision at a distance of 5 feet;
(d) carbon monoxide below 35 parts per million (PPM); and
(e) hydrogen sulfide level below 10 parts per million (PPM).

(2) Entry into a permit-required space will not be allowed if testing and monitoring indicates deficiency in any of these categories. Respirators or a self contained breathing apparatus (SCBA) are not to be used to allow entry into deficient atmospheres except for rescues and only by entrants who have been given special training by qualified trainers. To achieve and maintain a safe atmosphere, it may become necessary to take some action to render the space safe for human occupancy. This may include:

(a) Isolation - precautions taken to prevent release of material and/or energy into the space. This can be achieved through blinding, blanking, disconnecting, lockout/tagout, or removal of incoming pipes or related energy sources.

(b) Ventilation - purging, inerting, flushing or otherwise ventilating the space with fresh air. The fresh air will displace the contaminated air allowing for safe entry. This can be accomplished by removing ports and openings or by mechanically ventilating the space. Mechanical ventilation should be directed toward the immediate area where the entrants are or will be.

Once mechanical ventilation is started, it must be maintained for the duration of the entry. Atmospheric testing must be conducted continually during the entry period while ventilation is taking place.

(c) Verification - conditions within the permit space must remain acceptable throughout the duration of entry. Manchester College will require the entry supervisor to place an oxygen/LEL meter in the space during the duration of the entry.

(d) Separation - where there is a possibility of external hazards, the space may require barricades to protect the entrants from falling objects or from unauthorized entry.

iv. Evaluation of the Hazards

(1) Before granting entry, the entry supervisor should be aware of the following possible hazards specific to a particular permit-required confined space:

(a) oxygen deficiency;

(b) combustible, flammable or explosive atmospheres. Toxic gases or vapors;

(c) physical hazards, including, but not limited to engulfment, internal configuration, moving parts or machinery;

(d) corrosive chemicals;

(e) biologicals;

(f) exposure to live electrical parts; and

(g) unknowns.

(2) The "Confined Space and Permit-required Confined Space Recognition Form" may help identity hazards.

(3) Note: Before entry, hazardous atmospheric conditions must be rendered harmless. Residual and physical hazards can be minimized by personal protective equipment. The entry supervisor should contact the Director of the Physical Plant or Director of the Department of Safety and Security with any questions pertaining to entry.

v. Personal Protective Equipment (PPE)

(1) When physical, chemical and/or biological hazards exist, the space should be rendered safe for entry without the use of PPE. If this is not possible, the entry supervisor must outfit the entrants with the appropriate gear. Most PPE is available through the Physical Plant. Contact the Physical Plant Office with questions regarding the use of PPE.

vi. Monitoring

(1) Prior to entry, each permit space must be tested for the following atmospheric conditions in the listed order:

(a) oxygen level (must be between 19.5% and 23.5%);

(b) lower explosive limit (cannot exceed 10%);

(c) hydrogen sulfide (cannot exceed 10 ppm);

(d) carbon monoxide (cannot exceed 35 ppm);

(e) airborne combustible dusts which obscures vision at a distance of 5 feet;

(f) and other toxic gas levels.

(2) Note: The oxygen level is sampled first because most combustible gas meters are oxygen dependent. Monitoring in an oxygen deficient atmosphere may result in erroneous readings. Combustible gases are sampled next because the threat of fire or explosion is both more immediate and more life threatening.

(3) All initial testing will be done by the Entry Supervisor. The Attendant, Authorized Entrant, or Entry Supervisor will conduct continuous testing for oxygen, LEL, hydrogen sulphide, carbon monoxide, and airborne combustible dusts throughout

the entry. If a hazardous condition is detected by testing, entry will not be allowed or the entry must be immediately aborted.

(4) All atmospheric testing units are required to be calibrated every year. The calibration will be done by the Physical Plant.

vii. Communication

(1) Each entry team is required to establish and maintain communication with its members during the course of work. In instances where distance or surrounding noise prohibit visual or audible communication, two-way radios will be used. Radio and telephone communication must be readily available to the attendant for emergencies. The attendant is responsible for establishing and maintaining a means of communication, via radio, telephone, or cellular telephone.

viii. Multiple Entrants

(1) Multiple entrants may enter using the same attendant as long as the following conditions are met:

(a) all entrants are working on the same project;

(b) visual or audible contact is maintained between entrants and attendant; and

(c) for Manchester College supervised entries involving Manchester College employees and contractors, the attendant must be a member of the Manchester College Physical Plant.

(2) Communication equipment needs to be given to the attendant. However, if the entrants are at distances greater than what would allow for clear communication, the equipment will be provided to entrants as well. This decision must be made by the entry supervisor before the commencement of work.

ix. Notification of Entry and Termination of Entry

(1) Just prior to entry, the entry team is required to notify the Physical Plant Office (or Security if the Physical Plant Office is not open) as to the location, time of entry, and number of personnel entering the permit-required space. The entry team must notify the Physical Plant Office (or Security if the Physical Plant Office is not open) when entry activities are complete.

x. Confined Space Permit Procedures

(1) Confined space entry permits (copies of which may be found toward the end of this document) are required for entering any confined space. To obtain a permit, the entry supervisor must first confirm that work cannot be accomplished without entering the space. If work requires entry, a permit will be obtained from the Physical Plant and completed by the entry supervisor. At the same time, a "Confined Space Hazards, Equipment and Procedures Checklist" will be issued.

(2) The entry supervisor must make all determinations regarding the safe entry into the space. Following all requirements set forth in this document, the entry supervisor will grant or refuse entry into the space after reviewing the monitoring results.

(3) If entry is granted, the completed permit will be turned over to the attendant, and it will be posted or otherwise made readily accessible to all authorized entrants. All authorized entrants will review the "Confined Space Hazards, Equipment and Procedures Checklist," the "Confined Space Entry Permit," and put on any personal protective equipment required before entering the space. The entry supervisor or attendant will contact Security just prior to entering the space.

(4) Permits are only valid for the period of time necessary to complete the assigned task.

(5) The entry supervisor or attendant (if the supervisor is an entrant) is required to terminate an entry or cancel the permit when the job is complete or a prohibited

condition arises in the work area. Upon termination/cancellation, Security must be notified that the entry team(s) has emerged from the space. The permit and any reclassification form are then to be mailed or delivered to the Director of the Department Safety and Security. All permits will be retained for a minimum of one (1) year.

xi. Training

(1) Training will be provided to all employees who must enter confined spaces. Each employee will be provided with the understanding, knowledge, and skills necessary to carry out their duties, as well as the functions of this program. Each employee will be trained in all aspects of entry responsibilities, including those of the attendant, entrant, and entry supervisor. Each employee shall be made aware that the nature of his work or his very presence in a confined space can change a non-permit-required confined space into a permit-required confined space.

(2) Initial training will be provided by the Physical Plant. Refresher training will be performed by the employee's supervisor or designee. Refresher training must be conducted under the following circumstances:

(a) When there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;

(b) Whenever the Director of the Physical Plant or Director of the Department of Safety and Security has reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

(3) Records of training will be kept by the Physical Plant. These records are to include the name of the trainer, the individuals trained, and the date of the training.

xii. Confined Space Rescue

(1) For confined space rescues, all participants of the entry should adhere to the requirements of section 7 - Emergency Procedures.

(2) To facilitate rescues, a full body harness and retrieval lines will be used for all entries where the use of such equipment does not create other potential hazards, such as entanglements. Each member of the team will be trained in the proper operation of this piece of equipment.

xiii. Contractor Coordination

(1) No contractor may perform a confined space entry on campus without permission from the College. The contractor must inform the Project Manager of any necessary confined space entries.

(2) The Project Manager will inform any contractor of the Manchester College Confined Space Entry Program and its requirements. Contractors are responsible for following all requirements set forth in this document.

(3) If any work requires a contractor's personnel to enter permit-required spaces without the help of College personnel, the College requires submittal of the contractor's confined space entry plan before the commencement of work. In addition, the contractor is to fill out a “Contractor’s Confined Space Entry Permit” and obtain a “Confined Space Hazards, Equipment and Procedures Checklist” for the particular confined space. These documents are available in the Office of the Physical Plant. All regulatory requirements of 1910.146 "Permit-Required Confined Spaces" will be followed by the contractor. The contractor must furnish all equipment required for entry.

(4) In instances where both Manchester College employees and contractors are serving as entrants, Manchester College will perform all duties prior to entry. In addition, Manchester College will furnish communication equipment and personnel to serve

as attendant and entry supervisor. The qualified entrants for the contractor are to follow the instructions given by any Entry Supervisor or Attendant provided by the College.

(5) After completing all work in the confined space, the project manager will debrief the contractor regarding the entry, and identify any hazards encountered or created during the job. Details of any problems will be forwarded to the Director of the Department of Safety and Security.

(6) A contractor performing an entry without the aid of College personnel, assumes all responsibility for the confined space entry.

xiv. Annual Review of Confined Spaces

(1) The Manchester College Confined Space Entry Program will be reviewed annually to determine its effectiveness. Utilizing canceled permits and other available information the Director of the Department of Safety and Security, in conjunction with the Director of the Physical Plant, will determine if additional hazards have been identified within a given space; additional measures should be taken to protect the entrants; additional spaces should be included within the program; and some locations can be removed from the program. All confined space entry permits returned to the Physical Plant Office or the Director of the Department of Safety and Security will be retained for a period of one year to help facilitate the annual review of the Confined Space Entry Procedures.

6. **PERSONNEL REQUIREMENTS AND RESPONSIBILITIES**

a. The following are the requirements for each member of the entry team:

i. ATTENDANT

(1) Know and recognize hazards that may be faced during entry, by reading the "Confined Space Hazards, Equipment and Procedures Checklist."

(2) Be aware of behavioral effects of exposure to hazardous atmospheres.

(3) Maintain accurate counts and means to identify all entrants.

(4) Remain outside the space unless relieved by another qualified attendant.

(5) Monitor activities inside and outside the space.

(6) Monitor status of entrants and initiate evacuation if:

(a) prohibited conditions are detected;

(b) present situation may endanger the entrant;

(c) determines that an entrant may be exhibiting signs of exposure to a hazardous atmosphere; or

(d) attendant cannot effectively and safely perform duties.

(7) Know proper method of summoning rescue services before entry.

(8) Retain a copy of the "Confined Space Hazards, Equipment and Procedures Checklist" and the "Confined Space Entry Permit" which can be presented to rescue services when needed.

(9) Establish a means of communication, via radio, with Security, and check that the cell phone he/she has been issued works properly.

(10) If rescue services are needed, contact Security by radio (or use the cell phone to dial 911 if the radio fails).

(11) Keep unauthorized persons out of and away from the entry space.

(12) Perform non-entry vertical rescues using a winch.

(13) Perform no other duties.

b. AUTHORIZED ENTRANT

i. Know and recognize hazards that may be faced during entry, by reading the "Confined Space Hazards, Equipment and Procedures Checklist."

ii. Obtain and properly use necessary personal protective equipment.

iii. Communicate as necessary with the attendant.
iv. Alert attendant when hazardous conditions are detected, identified or suspected.
v. Exit the space immediately whenever:
(1) ordered to do so by other members of the entry team;
(2) warning signs/symptoms are identified;
(3) prohibited conditions are identified; or
(4) evacuation alarm is activated.

c. ENTRY SUPERVISOR
i. Know and recognize hazards that may be faced during entry by having read the "Confined Space Hazards, Equipment and Procedures Checklist."
ii. Fill out the "Confined Space Entry Permit" and the "Confined Space Hazards, Equipment and Procedures Checklist."
iii. Have the authorized entrants read both the "Confined Space Hazards, Equipment and Procedures Checklist" and the "Confined Space Entry Permit."
iv. Present both the "Confined Space Hazards, Equipment and Procedures Checklist" and the "Confined Space Entry Permit" to the attendant for safe keeping during the entry.
v. Verify that tests are completed and procedures and equipment are in place.
vi. Reclassify the confined space as a "non-permit-required confined space" if no hazards are present and provide the document to the attendant.
vii. Know the proper method of summoning rescue services before entry and verify with the attendant the operation of the emergency communication equipment.
viii. Ensure that responsibilities are safely and effectively transferred.
ix. Ensure entrants have all necessary personal protective equipment.
x. Authorize entry to begin, if safe entry can be achieved.
xi. Cancel the permit when the job is complete or unacceptable conditions arise.
xii. If the entry supervisor also enters the confined space, while he/she is in the confined space, he/she is to follow the requirements for an authorized entrant and cannot refuse to abort the entry when so directed by the attendant.
xiii. Fill out a Welding/Cutting Permit for Confined Spaces if the work requires it.

7. **EMERGENCY PROCEDURES**
a. Any event that causes injury or death to an entrant is an emergency situation. The attendant may deem other events to be an emergency situation.
b. For an emergency situation, the attendant shall immediately contact the Physical Plant Office, by radio, and inform them of the situation. The attendant should request the Physical Plant Office to summon rescue services. In the event the radio fails, he/she is to use a phone and dial 911 (if it is a campus phone dial 9-911), and then Maintenance and the Security emergency phone, 5999. In the event that the Physical Plant Office is closed, Security should handle the call.
c. After the emergency services arrive, they are in charge of the scene.
d. The attendant shall not enter the confined space for any purpose, neither before nor after emergency services arrive.
e. Immediately after the emergency services arrive, the attendant shall provide the emergency services with a copy of the Confined Space Hazards, Equipment and Procedures Checklist" and the "Confined Space Entry Permit." In addition, he/she is to inform emergency services of the time of the event, the number of entrants involved and any other conditions which may be necessary for the emergency services to know about. If the entrants were working with a particular substance for which Material Safety Data Sheets (MSDS) were required, the MSDS must be made available to the treating health care professionals.
f. The attendant shall keep individuals from entering the space if they are not part of the emergency services.
g. After the emergency services arrive, the attendant shall remain on the scene and be available for any help the emergency services may need.

h. No injured or incapacitated entrant should be removed before the emergency services arrive if their life is not in immediate danger. If the entrant's life is in immediate danger, the attendant, with the help of others, may use the safety lanyards to attempt to remove the entrants from the confined space, providing this does not pose a threat to the life of any other entrant. Attempting to remove an entrant should not take priority over summoning help from the emergency services. Attempting to remove an entrant should not involve entry by anyone not already in the confined space. No authorized entrant should attempt removal if it could place him/her in jeopardy.

i. Both the entry supervisor and the attendant are to report the details of the incident to both the Director of the Physical Plant and the Director of the Department of Safety and Security immediately after emergency services leave the scene.

j. It is recommended that College emergency equipment be on site for any permit required confined space entry. This includes the tripod, winch, and SCBA equipment. SCBA equipment should not be used by anyone not properly trained in its use.

8. **THE NON-PERMIT-REQUIRED CONFINED SPACES PROGRAM**

a. A non-permit-required confined space can be changed into a permit-required confined space due to the nature of the work being done in the confined space (i.e., spray painting) or the very presence of the entrant (i.e., depletion of oxygen). All confined spaces where hazardous materials (or other hazards) are introduced by the work shall be treated as permit-required confined spaces. Such redefined confined spaces shall be evacuated and reentered only as a permit-required confined space. Redefined confined spaces shall use the Confined Space Hazards, Equipment and Procedures Checklist #CS23.

b. No less than two workers shall be involved in a non-permit-required confined space entry.

c. Documentation, attendants, and entry supervisor shall not be required as long as a confined space remains non-permit-required and poses no hazards to the entrants.

d. For a non-permit-required confined space entry, personnel protective equipment may be reduced or eliminated if not needed. However, a full body harness is required in those spaces where it would be helpful in removing an injured entrant from the confined space. A full body harness will not be required if it poses the possibility of entanglement (i.e., a pipe chase for a restroom where the entrant must climb around and under pipes). It is not necessarily to have a safety lanyard if the entry supervisor determines its lack does not pose a hazard.

e. Radios are to be issued to each entrant during a non-permit-required space entry. At the first sign of a hazard, or other problem, the workers should abort the entry. The workers of an aborted entry shall contact the Physical Plant Office or Security by radio and advise them of their problem.

f. A "Confined Space Reclassification Form" reclassifies the confined space as non-permit-required for only the duration of one entry. The confined space reverts to a permit-required confined space after the entry has been concluded.

9. **Working in Streets**

a. Work in confined spaces with entry from a street may proceed as long as the following conditions are met:

i. an entry team vehicle shall be parked in such a manner to not obstruct traffic, yet provide protection for the employees;

ii. running vehicles used by entry personnel (or anyone else) shall be parked so that the exhaust does not enter the confined space; and

iii. easily visible traffic safety cones shall be placed around the entry team vehicle and manhole.

10. **APPROVAL**

a. The Confined Space Entry Standard is effective immediately. All Manchester College employees shall fulfill their responsibilities as designated within this written standard.

April 30, 2002

Appendix A

Manchester College
List of Permit-required Confined Spaces

1. The pit which was west of the old girls gymnasium. cs1
2. The pit east of PERC used for the irrigation equipment. cs2
3. The fire box of boiler #1 (the north boiler). cs3
4. The water drum of boiler #1 (the north boiler). cs4
5. The fire box of boiler #2 (the south boiler). cs5
6. The water drum of boiler #2 (the south boiler). cs6
7. The transformer vault south of Winger. cs7
8. The transformer vault south of Cordier Auditorium. cs8
9. The transformer vault west of the Science Building. cs9
10. The Union transformer vault. cs10
11. The transformer vault south of the Library. cs11
12. The transformer vault south of the Power House. cs12
13. Any sewage pits, sewage pipes, or sewage manholes large enough for a worker. cs13
14. The sewage ejector pit. cs14
15. The sump pump pit in the tunnel. cs15
16. The pit in the south mechanical room of Schwalm Hall. cs16
17. The hot water storage tanks. cs17
18. The receiver tank in the Power House. cs18
19. The aerator tank in the Power House. cs19
20. The Science Building mechanical room pit. cs20
21. The Helman Hall exterior service pit. cs21
22. The Helman Hall mechanical room pit. cs22
23. Previously unidentified permit-required confined spaces. cs23

CONFINED SPACE ENTRY PERMIT

(Entry using College Personnel)

Location of Space:_____

Number of the Confined Space Hazards, Equipment and Procedures Checklist:_____i.e., CS3

Entry Date:_____ Entry Time:_____AM/PM

Purpose of Entry:_____

Entry Supervisor:_____

Entry Attendant:_____

Authorized Entrants (list name and check appropriate items):

Name	Confined Space Training	CPR Trained	First Aid Trained
1._____	_____	_____	_____
2._____	_____	_____	_____
3._____	_____	_____	_____
4._____	_____	_____	_____
5._____	_____	_____	_____
6._____	_____	_____	_____

Was all the equipment on the Confined Space Hazards, Equipment and Procedures Checklist Present?
_____Y/N If not explain why on the back of this form.

Were all the procedures on the Confined Space Hazards, Equipment and Procedures Checklist Used?
_____Y/N If not explain why on the back of this form.

Results of Initial Atmosphere Testing:

Oxygen_____ Acceptable Levels: 19.5% to 23.5%

Combustible Gases_____ Acceptable Level: below 10 %

Airborne Combustible Dusts_____Acceptable Level: no less than 5 foot obscuration

Carbon Monoxide_____ Acceptable Level: below 35 PPM

Hydrogen Sulphide_____ Acceptable Level: below 10 PPM

Was continual atmospheric testing required? _____Y/N

Date Entry Terminated:_____ Time Entry Terminated:_____AM/PM

CONTRACTOR'S CONFINED SPACE ENTRY PERMIT

(No College personnel involved)

Location of Space:_____

Entry Date:_____ Entry Time:_____AM/PM

Purpose of Entry:_____

Entry Supervisor:_____

Entry Attendant:_____

Authorized Entrants (list name and check appropriate items):

Name	Confined Space Training	CPR Trained	First Aid Trained
1._____	_____	_____	_____
2._____	_____	_____	_____
3._____	_____	_____	_____
4._____	_____	_____	_____
5._____	_____	_____	_____
6._____	_____	_____	_____

Were you provided a "Confined Space Hazards, Equipment and Procedures Checklist"? _____Y/N
If not, request one. You must have obtained and read one for the space before any entry is permitted.

What was the number of the "Confined Space Hazards, Equipment and Procedure Checklist"? _____
The form should contain a number such as CS1, CS2, etc.

Do you understand that the College requires all its contractors to follow the OSHA guidelines for permit-required confined spaces? _____Y/N

Do you understand that you are to report to the College any hazards not listed on the "Confined Space Hazards, Equipment and Procedure Checklist"? _____Y/N

Do you understand that the College assumes no liability for a permit-required confined space entry after the College has informed you of the known hazards? _____Y/N

Company Name (print):_____

Signed:_____ Date:_____

Printed Name:_____

CONFINED SPACE RECLASSIFICATION FORM

Location of Space:_____

Number of Confined Space Hazards, Procedures and Checklist Form:_____

Entry Date:_____ Entry Time:_____AM/PM

Purpose of Entry:_____

Entry Supervisor:_____

Results of Initial Atmosphere Testing:

Oxygen_____	Acceptable Levels: 19.5% to 23.5%
Combustible Gases_____	Acceptable Level: Less than 10%
Airborne Combustible Gasses_____	Acceptable Level: Less than 5 ft visible obscuration
Carbon Monoxide_____	Acceptable Level: Less than 35 PPM
Hydrogen Sulphide_____	Acceptable Level: Less than 10 PPM

Was atmospheric testing performed continually? _____Y/N

If not, why not?_____

Were any of the hazards described on the Confined Space Hazards, Procedures and Checklist Form Present?
_____Y/N If Yes, the confined space may not be reclassified

Did the entry need to be aborted due to any noted hazards? _____Y/N

If yes, describe the hazards:

_____

_____

Date Entry Terminated:_____ Time Entry Terminated:_____AM/PM

Signature of Entry Supervisor:_____

Welding/Cutting Permit For Confined Spaces

Any confined space in which welding or cutting is taking place must be considered a permit-required confined space. Thus a confined space entry permit is required as well.

Location of Space:_____

Reason for welding/cutting? _____

Entry Date:_____ Entry Time:_____AM/PM

Entry Supervisor:_____

Entry Attendant:_____

Authorized Entrants (list name and check appropriate items):

Name	Confined Space Training	CPR Trained	First Aid Trained
1._____	_____	_____	_____
2._____	_____	_____	_____
3._____	_____	_____	_____
4._____	_____	_____	_____
5._____	_____	_____	_____
6._____	_____	_____	_____

Do you understand that ventilation is required continually in any confined space in which cutting or welding is taking place? _____Y/N

Do you understand that entrants must not be allowed to breath the fumes from welding/cutting materials?_____Y/N

Do you understand that entrants may have a delayed fatal reaction to breathing fumes from welding/cutting galvanized materials?_____Y/N

Do you understand that you are to remove or protect all sources of ignition before working?_____Y/N

Signature of Entry Supervisor:_____

CONFINED SPACE AND PERMIT-REQUIRED CONFINED SPACE RECOGNITION FORM

Part I - Is it a Confined Space?

1) Is the space large enough so an employee can bodily enter and perform work? Y/N

2) Does the space have limited or restricted means for entry and exit? Y/N

3) Is the space designed for occupancy? Y/N

If the answer is no to any of the above items, the space is not considered a confined space and no further action is needed.

Part II - Is it a Permit-required Confined Space

1) Does the space contain or potentially contain a hazardous atmosphere? Y/N

2) Does the space contain any chemicals or chemical residues? Y/N

3) Does the space contain any flammable combustible substances? Y/N

4) Does the space contain or potentially contain any decomposing organic matter? Y/N

5) Does the space have any pipes which bring chemicals into it? Y/N

6) Does the space have any materials that can trap or potentially trap, engulf, or drown an entrant? Y/N

7) Is Vision obscured by dust at 5 feet or less? Y/N

8) Does the space contain any mechanical equipment servicing the space? Y/N

9) Does the space have converging walls, sloped floors or tapered floor to smaller cross-sections which could trap or asphyxiate an entrant (Entrapment Hazard)? Y/N

10) Does the tank or vessel contain rusted interior surfaces? Y/N

11) Does the space contain thermal hazards (e.g.; extreme hot or cold)? Y/N

12) Does the space contain excessive noise levels which could interfere with communication with an attendant? Y/N

13) Does the space present any slip, trip, or fall hazards? Y/N

14) Are there any operations conducted near the space opening which could present a hazard to entrants? Y/N

15) Are there any hazards from falling objects? Y/N

16) Are there lines under pressure servicing the space? Y/N

17) Are cleaning solvents or paints going to be used in the space? Y/N

18) Is welding, cutting, brazing, riveting, scraping, or sanding going to be performed in the space? Y/N

19) Is electrical equipment located in or required to be used in the space? Y/N

20) Does the space have poor natural ventilation which would allow an atmospheric hazard to develop? Y/N

21) Are there any corrosives which could irritate the eyes in the space? Y/N

22) Are there any conditions which could prevent any entrants' self rescue from the space? Y/N

23) Are there any substances used in the space which have acute hazards? Y/N

24) Is mechanical ventilation needed to maintain a safe environment? Y/N

25) Is air monitoring necessary to ensure the space is safe for entry due to a potential hazardous atmosphere? Y/N

26) Will entry be made into a diked area where the dike is 5 feet or more in height? Y/N

27) Are residues going to be scraped off the interior surfaces of the vessel? Y/N

28) Are non-sparking tools required to remove residues? Y/N

29) Does the space restrict mobility to the extent it could trap an entrant? Y/N

30) Is respiratory protection required because of a hazardous atmosphere? Y/N

31) Is there exposure to uninsulated primary electrical voltages? Y/N

32) Does the space present a hazard other than those noted above which would make it a permit-required space? Y/N

Note: If any of the questions in Part II have been answered yes, the confined space is a permit-required confined space.

Confined Space
Hazards, Equipment and Procedures Checklist

CS1

Description of the confined space:

The pit which was west of the old girls gymnasium.

Description of Known Hazards:

1. Possible carbon monoxide from nearby vehicles.
2. Possible oxygen deficient atmosphere.
3. Possible levels of excessive heat.
4. Possible exposure to steam.
5. Possible electrocution if the confined space does not have a dry floor.
6. Possible electrocution if electrical faults are present in either the outlets, electrical panel, sump pump, or primary electric lines.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____5. Check for water in the space or a wet floor

If there is water in the space (such as for a failed sump pump), it must be pumped out before entry. If the floor is wet, a careful check for electrical hazards must be made.

_____6. Check for steam in the space

If steam is present, the source of the steam must be valved off at the source (not in the space) and the temperature must be reduced to an acceptable level.

_____7. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____8. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breaker in the panel under the bridge by Cordier Auditorium which supplies the electrical panel in the space, or by de-energizing the primary electrical lines by opening the appropriate cutouts in the Power Electrical Vault. This should only be done by workers qualified for work on primary voltages..

_____9. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS2

Description of the confined space:

The pit east of PERC used for the irrigation equipment.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible electrocution if the confined space does not have a dry floor.
3. Possible electrocution if electrical faults are present in either the outlets, electrical panel, or sump pump.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____5. Check for water in the space or a wet floor

If there is water in the space (such as for a failed sump pump), it must be pumped out before entry. If the floor is wet, a careful check for electrical hazards must be made.

_____6. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the switch in the panel in the upper mechanical room in PERC.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS3

Description of the confined space:

The fire box of boiler #1 (the north boiler).

Description of Known Hazards:

1. Possible carbon monoxide.
2. Possible oxygen deficient atmosphere.
3. Possible levels of excessive heat.
4. Possible exposure to steam.
5. Possible natural gas

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the power to the boiler and "lock out"
_____5. Valve off the gas and "Lock out"
_____6. Check the atmosphere with the four gas meter and record the readings.
Do permit entry if the meter shows an alarm condition. Test continually during the entire entry.
_____7. Ventilate the space for at least 15 minutes prior to entry and during the entire entry.
_____8. Check for ambient temperatures above 100 deg. F.
If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.
_____9. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS4

Description of the confined space:

The water drum of boiler #1 (the north boiler).

Description of Known Hazards:

2. Possible oxygen deficient atmosphere.
3. Possible levels of excessive heat.
4. Possible exposure to steam.
5. Possible natural gas.
6. Possible electrocution if lighting is used.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment
_____6. GFCI protection for lighting

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the power to the boiler and "lock out"
_____5. Valve off the gas and "Lock out"
_____6. Use GFCI equipment to protect entrant from possible shocks from electric lighting.
_____7. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Test continually during the entire entry.

_____8. Ventilate the space for at least 15 minutes prior to entry and during the entire entry.
_____9. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____10. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS5

Description of the confined space:

The fire box of boiler #2 (the south boiler).

Description of Known Hazards:

1. Possible carbon monoxide.
2. Possible oxygen deficient atmosphere.
3. Possible levels of excessive heat.
4. Possible exposure to steam.
5. Possible natural gas

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the power to the boiler and "lock out"
_____5. Valve off the gas and "Lock out"
_____6. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Test continually during the entire entry.

_____7. Ventilate the space for at least 15 minutes prior to entry and during the entire entry.
_____8. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____9. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS6

Description of the confined space:

The water drum of boiler #2 (the south boiler).

Description of Known Hazards:

2. Possible oxygen deficient atmosphere.
3. Possible levels of excessive heat.
4. Possible exposure to steam.
5. Possible natural gas.
6. Possible electrocution if lighting is used.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment
_____6. GFCI protection for lighting

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the power to the boiler and "lock out"
_____5. Valve off the gas and "Lock out"
_____6. Use GFCI equipment to protect entrant from possible shocks from electric lighting.
_____7. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Test continually during the entire entry.

_____8. Ventilate the space for at least 15 minutes prior to entry and during the entire entry.
_____9. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____10. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS7

Description of the confined space:

The transformer vault south of Winger.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting cables for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The primary voltage switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. Short out the primary lines with shorting cables. Watch out for capacitor discharge when applying the shorting cables.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary voltage switch is turned off, lock out the switch. Watch out for capacitor discharge when applying the shorting cables.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS8

Description of the confined space:

The transformer vault south of Cordier Auditorium.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting jumpers for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. The primary lines are to be shorted out with shorting jumpers until the entry is complete Watch for capacitor discharge when the shorting jumpers are applied.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary switches are turned off, lock out the primary switches. Watch out for capacitor discharge when applying the shorting jumpers.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS9

Description of the confined space:

The transformer vault west of the Science Building.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting jumpers for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. The primary lines are to be shorted out with shorting jumpers until the entry is complete Watch for capacitor discharge when the shorting jumpers are applied. Check to make sure none of the cutouts are open to the capacitor bank. If so, use jumper cables on each of the capacitors.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary switches are turned off, lock out the primary switches. Watch out for capacitor discharge when applying the shorting jumpers. Check to make sure none of the cutouts are open to the capacitor bank. If so, use jumper cables on each of the capacitors.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS10

Description of the confined space:

The Union transformer vault.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting jumpers for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. The primary lines are to be shorted out with shorting jumpers until the entry is complete Watch for capacitor discharge when the shorting jumpers are applied.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary switches are turned off, lock out the primary switches. Watch out for capacitor discharge when applying the shorting jumpers.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS11

Description of the confined space:

The transformer vault south of the Library.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting jumpers for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. The primary lines are to be shorted out with shorting jumpers until the entry is complete Watch for capacitor discharge when the shorting jumpers are applied.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary switches are turned off, lock out the primary switches. Watch out for capacitor discharge when applying the shorting jumpers.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS12

Description of the confined space:

The transformer vault south of the Power House.

Description of Known Hazards:

1. Possible electrocution if the confined space does not have a dry floor.
2. Possible electrocution due to exposed primary voltages.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. High voltage stick
_____7. Shorting jumpers for the primary lines
_____8. Ear protection for each entrant
_____9. Face shield for each entrant
_____10. Helmet for each entrant
_____11. High voltage protective sleeves

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Entry should only be made with the aid of a worker qualified to work on primary voltages.
_____5. Check for water in the space or a wet floor

If there is water in the space, the primary voltage should be turned off. The switches to turn off the primary voltage are on the pole south of Winger. Lock out the primary voltage switches. The primary lines are to be shorted out with shorting jumpers until the entry is complete Watch for capacitor discharge when the shorting jumpers are applied.

_____6. If work must be done within close proximity of the primary voltage equipment, either a suitable barrier must be erected to protect the workers from the primary voltage or the primary voltage must be turned off and the primary lines shorted out with shorting jumpers until the entry is complete. If the primary switches are turned off, lock out the primary switches. Watch out for capacitor discharge when applying the shorting jumpers.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS13

Description of the confined space:

Any sewage pits, sewage pipes, or sewage manholes large enough for a worker.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
3. Possible sewage fumes..

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____5. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____6. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS14

Description of the confined space:

Any sewage ejector pit.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible sewage fumes.
3. Possible electrocution if the sewage ejector for the confined space is not off.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the electric to the sewage ejector. Lock out the electric to the sewage ejector.
_____5. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____6. Check the atmosphere with the four gas meter and record the readings.
Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.
_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS15

Description of the confined space:

The sump pump pit in the tunnel.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible electrocution if the sump pump is on.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Turn off the electric to the sump pump. Lock out the electric to the sump pump.
_____5. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____6. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____7. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS16

Description of the confined space:

The pit in the south mechanical room of Schwalm Hall.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible sewage fumes.
3. Possible levels of excessive heat.
5. Possible electrocution if the confined space does not have a dry floor.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____5. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____6. Check for water in the space or a wet floor

If there is water in the space (such as for a sewage ejector pump), it must be pumped out before entry. If the floor is wet, a careful check for electrical hazards must be made.

_____7. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breakers associated with the power source. Be sure they are locked out.

_____8. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS17

Description of the confined space:

The hot water storage tanks.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible exposure to steam.
4. Possible electrocution if lighting is used.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Four gas monitor
_____3. Ventilation equipment
_____4. GFCI protection for lighting

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Use GFCI equipment to protect entrant from possible shocks from electric lighting.
_____5. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____6. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____7. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____8. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS18

Description of the confined space:

The receiver tank at the Power House.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible electrocution if lighting is used.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Four gas monitor
_____3. Ventilation equipment
_____4. GFCI protection for lighting

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Use GFCI equipment to protect entrant from possible shocks from electric lighting.
_____5. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____6. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____7. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____8. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS19

Description of the confined space:

The deaerator tank at the Power House.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible electrocution if lighting is used.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Four gas monitor
_____3. Ventilation equipment
_____4. GFCI protection for lighting

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Use GFCI equipment to protect entrant from possible shocks from electric lighting.
_____5. Ventilation must be started at least 15 minutes before the entry. Ventilation must be maintained during the entire entry.
_____6. Check the atmosphere with the four gas meter and record the readings.

Continual monitoring of the atmosphere must be maintained. Do permit entry if the meter shows an alarm condition. Abort the entry if an alarm condition occurs at any time during the entry.

_____7. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____8. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS20

Description of the confined space:

The Science Building Mechanical Room Pit.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible exposure to steam.
4. Possible electrocution if the confined space does not have a dry floor.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____7. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breakers associated with the power source. Be sure they are locked out.

_____8. Check for steam in the space

If steam is present, the source of the steam must be valved off at the source (not in the space) and the temperature must be reduced to an acceptable level.

_____9. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____10. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS21

Description of the confined space:

The Helman Hall exterior service pit.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible exposure to steam.
4. Possible electrocution if the confined space does not have a dry floor.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____7. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breakers associated with the power source. Be sure they are locked out.

_____8. Check for steam in the space

If steam is present, the source of the steam must be valved off at the source (not in the space) and the temperature must be reduced to an acceptable level.

_____9. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____10. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS22

Description of the confined space:

The Helman Hall Mechanical Room Pit.

Description of Known Hazards:

1. Possible oxygen deficient atmosphere.
2. Possible levels of excessive heat.
3. Possible exposure to steam.
4. Possible electrocution if the confined space does not have a dry floor.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____7. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breakers associated with the power source. Be sure they are locked out.

_____8. Check for steam in the space

If steam is present, the source of the steam must be valved off at the source (not in the space) and the temperature must be reduced to an acceptable level.

_____9. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____10. After completing the entry, return all necessary forms to Security.

Confined Space
Hazards, Equipment and Procedures Checklist
CS23

Description of the confined space:

Previously unidentified permit-required confined spaces.

Description of Known Hazards:

Check the attached "Confined Space and Permit-required Confined Space Recognition Form" for possible hazards present in the space.

Check List for Equipment:

_____1. Radio and cell phone for attendant
_____2. Full body harness for each entrant
_____3. Lanyard for each full body harness
_____4. Four gas monitor
_____5. Electrical gloves
_____6. Ventilation equipment
_____7. Any other equipment that might be necessary for the particular hazards

Procedure Checklist:

_____1. Fill out a Confined Space Entry Form.
_____2. Designate an attendant and qualified entrants.
_____3. Review all procedures with attendant and qualified entrants.
_____4. Check the atmosphere with the four gas meter and record the readings.

Do permit entry if the meter shows an alarm condition. Ventilate for 15 minutes if an alarm condition was present and check the atmosphere again with the four gas meter while the ventilation equipment is running. If the confined space does not show any alarm conditions, entry may proceed, but ventilation is required during the entire entry and testing must be continual during the entry. If the alarm condition persists, entry may not be authorized.

_____5. Check for water in the space or a wet floor

If there is water in the space (such as for a failed sump pump or leaking pipe), it must be pumped out before entry. If the floor is wet, a careful check for electrical hazards must be made.

_____6. Check for steam in the space

If steam is present, the source of the steam must be valved off at the source (not in the space) and the temperature must be reduced to an acceptable level.

_____7. Check for ambient temperatures above 100 deg. F.

If the temperature is above 100 deg. F. and below 120 deg. F, continual ventilation must be provided and an entrant allowed out for at least five minutes after a period of ten minutes in the space. Entry should not be allowed if the ambient temperature is 120 deg. F. or above.

_____8. Check for electrical hazards

If electrical hazards are present, the hazard must be eliminated by turning off the breaker in the panel under the bridge by Cordier Auditorium which supplies the electrical panel in the space, or by de-energizing the primary electrical lines by opening the appropriate cutouts in the Power Electrical Vault. This should only be done by workers qualified for work on primary voltages.

_____9. If possible, eliminate any other hazards that are present before entry. If it is not possible to eliminate the hazard, provide necessary personal protective equipment and take any other safety measures to protect the entrants.

_____10. After completing the entry, return all necessary forms to Security.