

**CONFINED SPACE ENTRY PROGRAM
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CONFINED SPACE ENTRY PROGRAM

I. INTRODUCTION

The Occupational Safety and Health Administration has established a specific rule regarding confined spaces found at 29 CFR 1910.146, *Permit-Required Confined Spaces* (see Appendix A for a complete copy of the standard). OSHA also references confined spaces in several other standards including, but not limited to: 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals; 29 CFR 1910.120, HAZWOPER; 29 CFR, Subpart Q, Welding, Cutting and Brazing; 1910.156, Fire Brigades; and 29 CFR 1926.353, Ventilation and Protection in Welding, Cutting, and Heating. This program has been developed in accordance with these standards. In the event of a conflict among any of these standards, the most stringent has been applied.

II. SCOPE

This confined space entry program is designed to reduce the possibility of injury and/or damage to the University of Oklahoma (OU) and all ancillary campus locations, employees, and property resulting from accidents associated with confined space work. All OU employees performing work in confined spaces must follow these procedures.

III. DEFINITIONS

- A. **Attendant:** An employee designated to remain outside the confined space and maintain constant communication with those inside.
- B. **Atmospheric Testing Equipment:** Equipment used to monitor levels of oxygen, flammable, combustible and toxic gases prior to and periodically during work in a confined space.
- C. **Authorized Entrant:** A person who is approved or assigned by the department head in charge of the entry to perform a specific duty or duties.
- D. **Confined Space:** A space that:
 - 1. is large enough and so configured that an employee can bodily enter and perform assigned work;
 - 2. has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, vaults, and pits are spaces that may have limited means of entry); and
 - 3. is not designed for continuous employee occupancy.
- E. **Confined Space with No Entry Allowed:** A confined space that, due to limitations (equipment and/or rescue capabilities), no OU employee is allowed entry into these spaces. If entry into one of these spaces is required for maintenance or repair activities, a competent

contractor experienced in confined space entry shall be used to perform such activities.

- F. **Emergency:** Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants to the confined space.
- G. **Entry:** The action by which a person passes through an opening into a permit required confined space. Entry is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the confined space.
- H. **Entry Permit:** The written or printed document provided by entry supervisor that must be completed before entry into a permit required confined space.
- 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 from one or more of the following causes:
 - 1. flammable gas, vapor or mist in excess of 10 percent of its lower flammable limit (LFL);
 - 2. airborne combustible dust at a concentration that meets or exceeds its LFL;
 - 3. atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
 - 4. atmosphere concentration of any substance for which a dose or a permissible exposure limit (PEL) is published in Subpart G, of OSHA Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances and that could result in employee exposure in excess of either; and
 - 5. any other atmospheric condition that is immediately dangerous to life or health.
- J. **Hot Work:** Any work involving burning, welding or similar fire producing operations or operations that produce a source of ignition, such as grinding, drilling, or heating.
- K. **Hot Work Permit:** OU's written authorization to perform operations capable of providing a source of ignition in a confined space.
- L. **Immediately Dangerous to Life or Health (IDLH):** Means any condition that poses an immediate or delayed threat to life or would cause irreversible adverse health effects or interfere with an individuals ability to escape unaided from a permit space.
- M. **In-plant Rescue Team:** A group of two or more employees designated and trained to perform rescues in permit spaces in their facility.

- N. **Lower Explosive Limit (LEL):** Minimum concentration of a flammable gas or vapor in air which will ignite if an ignition source is present.
- O. **Lifeline:** Line attached to the employee in a confined space to remove him or her if unconscious or disabled.
- P. **Non-Permit Required Confined Space:** A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain, any hazard capable of causing death or serious physical harm.
- Q. **Oxygen Deficient Atmosphere:** An atmosphere that contains less than 19.5 percent oxygen by volume.
- R. **Oxygen Enriched Atmosphere:** An atmosphere that contains more than 23.5 percent oxygen by volume.
- S. **Permit-Required Confined Space:** Means a 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 a smaller cross-section, or
 - 4. contains any other recognized serious safety or health hazard.
- T. **Personal Protective Equipment (PPE):** Equipment to protect eyes, face, head, and extremities, safety glasses, hard-hats, respirators, gloves, and protective clothing.
- U. **Permissible Exposure Limit (PEL):** Concentration of a substance to which an individual may be exposed repeatedly without adverse effect.
- V. **Power Ventilator:** Explosion proof electrically powered fan and duct system which supplies fresh air into a confined space, and lowers the concentration of hazardous gasses and vapors.
- W. **Retrieval line:** A line or rope secured at one end to the worker by chest-waist or full-body harness, and with its other end secured to either a lifting (or other retrieval) device, or to an anchor point located outside the entry.
- X. **Self-contained Breathing Apparatus (SCBA):** Respirator which supplies clean air to an employee, and must be worn during a confined space rescue.

Y. WRITTEN PERMIT SYSTEM

- Z. A written permit system has been established which provides for the proper preparation, issuance, and implementation of entry permits. Copies of permits may be found in Appendix C. Currently, written permits exist for the Steam and Chilled Water Plant (SCWP) Water Well Reservoir and Salt Reservoir at the Health Sciences Center. For all other spaces, employees and supervisors are required to contact the EHSO for permits when needed.
- AA. No entry into a permit required confined space will be allowed without a permit. This permit is designed to assure that employees identify conditions that could endanger confined space entrants and attendants.
- BB. All permits must be retained for at least one year after the entry permit has been canceled:
 - 1. for OUHSC, by the SCWP Manager or Assistant Director of Operations for Construction and Maintenance;
 - 2. for OU-Tulsa, by the Assistant Director of Operations for Construction and Maintenance after the entry permit has been canceled; and
 - 3. for OU-Norman, the supervisor of each shop issuing the permit.

IV. RESPONSIBILITIES

- A. The Environmental Health and Safety Office (EHSO) is responsible for:
 - 1. conducting training and initial air monitoring in the event of a confined space entry,
 - 2. conducting awareness level training for employees who may encounter a confined space during the performance of their daily duties,
 - 3. conducting detailed training for authorized entrants into a permit required spaces,
 - 4. conduct detailed training for approved attendants in the proper operation of air testing equipment,
 - 5. assisting supervisors in identifying confined spaces on OU campus.
 - 6. providing, maintaining and calibrating the air testing equipment used during confined space entry, and
 - 7. evaluating and identifying an emergency rescue service.
- B. Supervisors are responsible for:

1. identifying confined spaces on the OU campus and reporting those identified spaces to the EHSO,
 2. ensuring that all employees required to perform any confined space entry procedure have received the appropriate level of training,
 3. obtaining and completing the appropriate confined space entry permit,
 4. providing necessary personal protective equipment to employees,
 5. ensuring that all employees perform their assigned duties as outlined in this program, and
 6. taking appropriate disciplinary action whenever an employee under his or her direction fails to follow safety precautions outlined in this program.
- C. Entry supervisors in charge must:
1. knows the hazards which may be faced during entry,
 2. determine that the entry permit is completed before authorizing or allowing entry;
 3. determine that the necessary procedures, practices, and equipment for safe entry are in effect before allowing entry (see section VII, Entry Preparation Procedures Permit-Required Confined Space);
 4. determine, at appropriate intervals, that entry operations remain consistent with the terms of the entry permit, and that acceptable entry conditions are present;
 5. cancel the entry authorization and terminate entry whenever acceptable conditions are not present;
 6. take the necessary actions when terminating an entry operation, such as closing off a permit space and canceling the permit, once the work authorized by the permit has been completed; and
 7. take appropriate measures to remove unauthorized personnel who are in or near entry permit spaces.
- D. Authorized entrants must:
1. know the hazards which may be faced during entry;
 2. be able to recognize the signs and symptoms of exposure to a hazard;

3. understand the consequences of exposure to a hazard;
4. maintain contact with the attendant;
5. notify the attendant when the entrant's self-initiate evacuation of a permit space;
6. be familiar with the personal protective equipment needed for safe entry and exit such as retrieval lines, respirators, or clothing;
7. use the necessary personal protective equipment properly; and
8. exit the permit space unless physically impossible to do so when:
 - a. the attendant orders evacuation,
 - b. an automatic alarm is activated, or
 - c. the authorized entrants perceive that they are in danger.

E. Attendants must:

1. be stationed and remain outside the permit space(s) at all times during entry operations;
2. continuously maintain an accurate count of all persons in the space;
3. be able to recognize potential permit space hazards;
4. monitor activities inside and outside the permit space to determine if it is safe for entrants to remain in the space
5. maintain effective and continuous contact with authorized entrants during entry;
6. order authorized entrants to evacuate the permit space immediately when:
 - a. a condition is observed which is not allowed in the entry permit,
 - b. behavioral effects or symptoms of hazard exposure are detected,
 - c. a situation inside or outside the space is detected which could endanger the entrants,
 - d. rescue must occur from another space being monitored by that same attendant, or
 - e. the attendant must leave the work station.
7. summon rescue and other emergency services as soon as the attendant determines that escape is required from the space:
 - a. warn the unauthorized persons away from the space,

- b. request the unauthorized persons to exit immediately if they have entered the permit space, and
 - c. inform the authorized entrants and entry supervisor if unauthorized persons have entered the permit space.
- 8. not enter the permit space to attempt rescue of entrants, and
 - 9. properly use any emergency rescue equipment provided for that use and perform any other assigned rescue and emergency duties without entering the permit space.

V. ENTRY PREPARATION PROCEDURES-PERMIT REQUIRED CONFINED SPACES

- A. Before each entry into a permit required confined space a new entry permit must be completed by the designated entry supervisor.
- B. The person authorizing entry is responsible for communicating the contents of the permit to all parties involved.
- C. All items on the permit must be checked and completed before any person is allowed to enter a permit space.
- D. The legible name and signature of the supervisor authorizing entry must be on the permit before the entry begins. By signing this form, the supervisor authorizing entry verifies that all actions and conditions necessary for safe entry have been performed.
- E. The supervisor authorizing entry shall revoke the permit when conditions or work activity are different than those specified on the permit which could introduce a new hazard to the permit space. The EHSO must be contacted to develop a new permit.
- F. An attendant is required for each entry and shall be located outside the entry space at all times. The permit must remain in the possession of the attendant at all times while entry activities are underway.
- G. Atmospheric testing utilizing direct reading instruments must be performed by the EHSO before entry into a permit required confined space.
 - 1. Initial monitoring of the atmosphere inside the confined space shall be conducted from a safe distance outside the space by a trained EHSO employee utilizing air sampling instruments that have been properly calibrated.
 - 2. Monitoring shall occur simultaneously or in the following sequence: oxygen, flammability, carbon monoxide, other toxic gasses.
 - 3. If the confined space is vacated for any significant period of time, the atmosphere of the confined space shall be retested before re-entry is permitted.

- H. The atmosphere of the confined space shall be considered unacceptable for entry whenever the following conditions are noted:
1. the atmospheric oxygen concentration is below 19.5 percent or above 22 percent,
 2. a flammable gas, vapor, or mist is present in a concentration in excess of 10 percent of its Lower Explosive Limit (LEL) or Lower Flammability Limit (LFL),
 3. airborne combustible dusts are present at a concentration that obscures vision at a distance of 5 feet or less,
 4. atmospheric concentrations of other substances for which a permissible exposure limit (PEL) is published by OSHA or a threshold limit value (TLV) is published by the American Conference of Governmental Industrial Hygienists (ACGIH) are above these recognized exposure limits, or
 5. any atmospheric condition recognized as immediately dangerous to life or health.
- I. Whenever atmospheric testing of the confined space indicates unacceptable conditions for entry, controls such as providing additional ventilation shall be implemented to modify the atmospheric conditions to acceptable levels or appropriate personal protective equipment will be utilized. These procedures will be performed under the direction of the EHSO.
- J. All energy sources and pipelines which enter the workspace will be locked out according to the *OU Physical/Mechanical Hazards Program*.
- K. Any temporary lighting or portable power tool to be used in a permit required confined space where there is a potentially explosive atmosphere shall be explosion proof.
- L. Any temporary lighting or portable power tool to be used in a permit required confined space where there is a potential of electrical shock shall be battery operated or served through a ground fault circuit interrupter.
- M. Rescue provisions and a system of effective and continuous communication between the attendant and the authorized entrants must be established prior to entry.
- N. Personal protective equipment that will be required for entry will be determined by the supervisor with the advice of the EHSO. This may include respirators, coveralls, gloves, head protection, foot protection, and/or hearing protection. This information will appear on the permit.
- O. Any employee required to wear respiratory equipment must receive additional training on respirator use, a fit test on the respirator to be used, and a physical examination to ensure that the employee is capable of wearing the respirator without undue physical distress.

- P. Upon completion of the entry permit, and after all entrants have exited the permit space, the supervisor signing the permit must cancel the permit.

VI. TRAINING

- A. Training is required to ensure that attendants, authorized entrants, and supervisors can work safely in and around the permit space. Training should be provided to each affected employee before the employee is first assigned duties in a confined space area. The EHSO will conduct this training.

- A. Training shall include as a minimum:

1. duties and responsibilities of each participant in entry procedures,
1. hazard recognition of all hazards which may be faced during entry,
2. how to recognize the signs and symptoms of exposure to a hazard,
3. the potential consequences of exposure to a hazard,
4. proper communication procedures,
5. procedures for evacuation of a permit space,
6. proper use and limitations of protective equipment,
7. proper procedures for rescue, and
8. training shall be reinforced at least annually through additional training sessions.

VII. EQUIPMENT

- A. The appropriate supervisor must provide, ensure maintenance of, and ensure the proper use of the equipment necessary for safe entry, including rescue, atmosphere monitoring equipment, communication equipment, and personal protective equipment.
- B. The EHSO will provide instruction on the proper use of atmospheric testing and monitoring equipment.
- C. Equipment utilized by outside rescue teams will be the responsibility of that rescue team.
- D. Any use of respirators for confined space entry will be performed under the requirements of the *OU Respirator Program*.
- E. Any use of hot work equipment during confined space entry must comply with the *OU Hot*

Work Program.

VIII. RESCUE

- A. The EHSO should evaluate and identify the most appropriate rescue service prior to any OU employee entering a permit required confined space.
 - 1. The municipal fire department for each campus may be contacted to provide off-site emergency response personnel to respond to emergencies occurring in confined spaces at OU. The EHSO should ensure that fire department personnel are notified sufficiently in advance of any entry into permit required confined spaces (except special permits as outlined in this program) so that rescue personnel may make themselves available on-call.
 - 2. If municipal fire department personnel are not available, no entry shall be made, or other means of rescue must be procured.
- B. The EHSO shall provide rescue personnel with sufficient information regarding OU Policy and Procedures to respond to such emergencies, including information regarding the potential hazards which may be encountered during entry or rescue from the confined spaces.
- C. The supervisor authorizing entry will ensure that attendants are provided with a means of immediately communicating to the rescue team when the need for response is indicated.

APPENDIX A

**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) PERMIT-REQUIRED
CONFINED SPACES FOR GENERAL INDUSTRY; FINAL RULE**

Please see the following

http://www.osha-slc.gov/OshStd_data/1910_0146.html

http://www.osha-slc.gov/OshStd_data/1910_0146_APP_A.html

http://www.osha-slc.gov/OshStd_data/1910_0146_APP_B.html

http://www.osha-slc.gov/OshStd_data/1910_0146_APP_C.html

http://www.osha-slc.gov/OshStd_data/1910_0146_APP_D.html

APPENDIX B
IDENTIFICATION OF CONFINED SPACES

APPENDIX B IDENTIFICATION OF CONFINED SPACES

A survey of the OUHSC IX.Steam and Chilled Water Plant (SCWP) was performed to identify confined spaces in the work area. Also, a survey of the OU-Tulsa campus areas has been completed by the Assistant Director of Operations for Construction and Maintenance. If additional confined spaces are identified, they will be added to this program. OU-Norman , the survey is in progress at this time. At the completion of the survey they will be posted in this program.

I. CONFINED SPACES WITH NO ENTRY ALLOWED

- A. The following confined spaces (SCWP) were identified that under no circumstances will OUHSC employees be allowed to enter:
 - 1. water softeners,
 - 2. compressed air tanks,
 - 3. expansion tanks (chilled water),
 - 4. steam condensers,
 - 5. sulfuric acid tanks,
 - 6. turbine exhaust stacks, and
 - 7. chillers.
- B. Signs must be posted at each of these locations to identify them as confined spaces with no entry allowed.
- C. Unauthorized entry into these spaces will be prevented through information and/or training of all employees, signage, and appropriate barriers.
- D. If entry into one of these spaces is required for maintenance or repair activities, a competent contractor experienced in confined space entry will be utilized to perform such activities. This contractor will be provided with all available information on the hazards of the space, OUHSC efforts to comply with the OSHA Standard, and any other workplace hazards that may be encountered (such as noise), safety rules and emergency procedures necessary for the contractor to perform the work in a safe and healthy manner and to comply with applicable OSHA Standards.

II. PERMIT REQUIRED CONFINED SPACES

- A. The following confined spaces were identified as periodically requiring entry and will be
-
-

classified as permit required confined spaces at OUHSC:

1. well water reservoir (SCWP),
2. salt reservoir (SCWP),
3. crawl space in the College of Health Building between floors 4 and 5, and
4. various small steam/chill tunnels around the Service Center Building.

B. The following confined spaces were identified as periodically requiring entry and will be classified as permit required confined spaces at OU-Tulsa.

1. mud drums,
2. steam drums,
3. fire boxes,
4. electrical vaults, and
5. deaerator/surge tanks.

C. The following confined spaces were identified as low-hazard permit spaces at OUHSC:

1. deaerator/surge tanks (SCWP);
2. mud drums (SCWP);
3. steam drums (SCWP);
4. crawlspaces in John Keyes Center West mechanical room and student lounge areas;
5. air intake pits at Basic Sciences Education Building, Biomedical Sciences Building, Research Building, and Dean McGee Eye Institute;
6. elevator shafts and pits in all buildings; and
7. crawlspaces in the College of Health building on east and west sides between the 5th floor and the roof.

D. The following confined spaces were identified as low-hazard permit spaces at OU-Tulsa:

1. chilled water/steam line vaults,

2. sand filter,
 3. water meter vaults,
 4. steam tunnels, and
 5. elevator shafts and pits in all buildings.
- E. Signs must be posted at the entrance of each of these confined spaces to notify employees what hazards may be present and that only authorized entrants may enter the permit space.
- F. Unauthorized entry into these spaces will be prevented through information and/or training of all employees, signage, and appropriate barriers.

III. **NON-PERMIT REQUIRED CONFINED SPACE**

- A. The following confined spaces were identified as non-permit required confined spaces at OU-Tulsa:
1. cooling towers, and
 2. primary air intake filter boxes.

APPENDIX C
WRITTEN PERMITS

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Pre-Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Well Water Reservoir, Northeast Corner of SCWP Property

Purpose of Entry: Cleaning of Residual Water

Has rescue service been notified prior to staging for entry: Yes No By: _____

ISOLATION CHECKLIST	Yes	No	N/A	Time	Inspected by:
Electrical					
Pumps off and locked out					
Lines disconnected, blinded or blocked					
Valves shut and locked/tagged out					

VENTILATION CHECKLIST	Yes	No	Time On	Inspected by:
Mechanical				
Natural ventilation only				

EHSO AIR MONITORING	Time	Result	Within Safe Parameters		Signature
			Yes	No	
Oxygen					
Flammable gasses (LEL)					
Carbon Monoxide					
Instrument Calibration					

Warning: If any "No" block is checked, entry is permitted only by approval of authorizing supervisor and EHSO

Authorizing Supervisor's signature: _____

Authorizing EHSO signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Well Water Reservoir, Northeast Corner of SCWP Property

Purpose of Entry: Cleaning of Residual Water

Entrant(s): _____

Attendant(s): _____

SPECIAL PRECAUTIONS REQUIRED FOR ENTRY		
Action	Check	Initial
Notify Environmental Health and Safety Office 3 days in advance of project		
Obtain (2) two-way radios from Site Support		
Are all employees involved properly trained?		
Assign one person to wear personal monitoring devices for oxygen, LEL and carbon monoxide		
Shut down water wells. Lock out and tag out per SWCP Lock Out/Tag Out Program		
Drain reservoir with SCWP water pumps		
Open access hatch, insert 10" round duct attached to double inlet, forward curve fan as far back into the space as possible		
Has area been ventilated for at least 10 minutes prior to entry		

Authorizing Supervisor Name: _____

Authorizing Supervisor Signature: _____

Completion of Project Date: _____ Time: _____

Supervisor Signature of Permit Cancellation: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Attendant Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Well Water Reservoir, Northeast Corner of SCWP Property

Two-way radio communication check with rescue service. Time: _____ By: _____

ENTRANT(S)	Time		Initial
	In	Out	

ATTENDANT AIR MONITORING	Oxygen	Flammable Gasses (Lel)	Carbon Monoxide	Initial
Time:				
Time:				
Time:				
Time:				
Time:				
Time:				
Time:				

Warning: There can be no hazardous atmospheres within the confined space whenever a employee is inside. If a hazardous atmosphere is detected while in the workspace, each employee must leave the confined space immediately.

Attendant(s) Signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Pre-Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Salt Reservoir

Purpose of Entry: Cleaning of Tank Contents and Residue

Has rescue service been notified prior to staging for entry: Yes No By: _____

ISOLATION CHECKLIST	Yes	No	N/A	Time	Inspected by:
Electrical					
Pumps off and locked out					
Lines disconnected, blinded or blocked					
Valves shut and locked/tagged out					

VENTILATION CHECKLIST	Yes	No	Time On	Inspected by:
Mechanical				
Natural ventilation only				

EHSO AIR MONITORING	Time	Result	Within Safe Parameters		Signature
			Yes	No	
Oxygen					
Flammable gasses (LEL)					
Carbon Monoxide					
Instrument Calibration					

Warning: If any "No" block is checked, entry is permitted only by approval of authorizing supervisor and EHSO

Authorizing Supervisor's signature: _____

Authorizing EHSO signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Salt Reservoir

Purpose of Entry: Cleaning of Tank Contents and Residue

Entrant(s): _____

Attendant(s): _____

SPECIAL PRECAUTIONS REQUIRED FOR ENTRY		
Action	Check	Initial
Notify Environmental Health and Safety Office 3 days in advance of project		
Obtain (2) two-way radios from Site Support		
Are all employees involved properly trained?		
Assign one person to wear personal monitoring devices for oxygen, LEL and carbon monoxide		
Open access hatch, insert 6" round duct attached to double inlet, forward curve fan as far back into the space as possible		
Has area been ventilated for at least 10 minutes prior to entry		
Place a 10 foot ladder into the pit for entrant access		
Ensure that all entrants wear protective equipment to include, at a minimum, rubber boots		

Authorizing Supervisor Name: _____

Authorizing Supervisor Signature: _____

Completion of Project Date: _____ Time: _____

Supervisor Signature of Permit Cancellation: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Attendant Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Salt Reservoir

Two-way radio communication check with rescue service. Time: _____ By: _____

ENTRANT(S)	Time		Initial
	In	Out	

ATTENDANT AIR MONITORING	Oxygen	Flammable Gasses (Lel)	Carbon Monoxide	Initial
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				

Warning: There can be no hazardous atmospheres within the confined space whenever a employee is inside. If a hazardous atmosphere is detected while in the workspace, each employee must leave the confined space immediately.

Attendant(s) Signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Pre-Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #1

Purpose of Entry: Clean mud drum, check tubes and repair refractory

Has rescue service been notified prior to staging for entry: Yes No By: _____

ISOLATION CHECKLIST	Yes	No	N/A	Time	Inspected by:
Electrical					
Pumps off and locked out					
Lines disconnected, blinded or blocked					
Valves shut and locked/tagged out					

VENTILATION CHECKLIST	Yes	No	Time On	Inspected by:
Mechanical				
Natural ventilation only				

EHSO AIR MONITORING	Time	Result	Within Safe Parameters		Signature
			Yes	No	
Oxygen					
Flammable gasses (LEL)					
Carbon Monoxide					
Instrument Calibration					

Warning: If any "No" block is checked, entry is permitted only by approval of authorizing supervisor and EHSO

Authorizing Supervisor's signature: _____

Authorizing EHSO signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #1

Purpose of Entry: Clean mud drum, check tubes and repair refractory

Entrant(s): _____

Attendant(s): _____

SPECIAL PRECAUTIONS REQUIRED FOR ENTRY		
Action	Check	Initial
Notify Environmental Health and Safety Office 3 days in advance of project		
Obtain (2) two-way radios from Site Support		
Are all employees involved properly trained?		
Has area been ventilated for at least 10 minutes prior to entry		
Assign one person to wear personal monitoring devices for oxygen, LEL and carbon monoxide		
Ensure gas lines are locked out and tagged out		
Ensure blowdown valve is locked closed while employees are inside		

Authorizing Supervisor Name: _____

Authorizing Supervisor Signature: _____

Completion of Project Date: _____ Time: _____

Supervisor Signature of Permit Cancellation: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Attendant Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #1

Two-way radio communication check with rescue service. Time: _____ By: _____

ENTRANT(S)	Time		Initial
	In	Out	

ATTENDANT AIR MONITORING	Oxygen	Flammable Gasses (Lel)	Carbon Monoxide	Initial
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				

Warning: There can be no hazardous atmospheres within the confined space whenever a employee is inside. If a hazardous atmosphere is detected while in the workspace, each employee must leave the confined space immediately.

Attendant(s) Signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Pre-Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #2

Purpose of Entry: Clean mud drum, check tubes and repair refractory

Has rescue service been notified prior to staging for entry: Yes No By: _____

ISOLATION CHECKLIST	Yes	No	N/A	Time	Inspected by:
Electrical					
Pumps off and locked out					
Lines disconnected, blinded or blocked					
Valves shut and locked/tagged out					

VENTILATION CHECKLIST	Yes	No	Time On	Inspected by:
Mechanical				
Natural ventilation only				

EHSO AIR MONITORING	Time	Result	Within Safe Parameters		Signature
			Yes	No	
Oxygen					
Flammable gasses (LEL)					
Carbon Monoxide					
Instrument Calibration					

Warning: If any "No" block is checked, entry is permitted only by approval of authorizing supervisor and EHSO

Authorizing Supervisor's signature: _____

Authorizing EHSO signature: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #2

Purpose of Entry: Clean mud drum, check tubes and repair refractory

Entrant(s): _____

Attendant(s): _____

SPECIAL PRECAUTIONS REQUIRED FOR ENTRY		
Action	Check	Initial
Notify Environmental Health and Safety Office 3 days in advance of project		
Obtain (2) two-way radios from Site Support		
Are all employees involved properly trained?		
Has area been ventilated for at least 10 minutes prior to entry		
Assign one person to wear personal monitoring devices for oxygen, LEL and carbon monoxide		
Ensure gas lines are locked out and tagged out		
Ensure blowdown valve is locked closed while employees are inside		

Authorizing Supervisor Name: _____

Authorizing Supervisor Signature: _____

Completion of Project Date: _____ Time: _____

Supervisor Signature of Permit Cancellation: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Attendant Checklist

Date: _____ Time: _____

Location and Description of Confined Space: Schusterman Center, Boiler #2

Two-way radio communication check with rescue service. Time: _____ By: _____

ENTRANT(S)	Time		Initial
	In	Out	

ATTENDANT AIR MONITORING	Oxygen	Flammable Gasses (Lel)	Carbon Monoxide	Initial
Time:				
Time:				
Time:				
Time:				
Time:				
Time:				
Time:				

Warning: There can be no hazardous atmospheres within the confined space whenever a employee is inside. If a hazardous atmosphere is detected while in the workspace, each employee must leave the confined space immediately.

Attendant(s) Signature: _____

APPENDIX D
BLANK PERMITS

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Pre-Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: _____

Purpose of Entry: _____

Has rescue service been notified prior to staging for entry: Yes No **By:** _____

ISOLATION CHECKLIST	Yes	No	N/A	Time	Inspected by:
Electrical					
Pumps off and locked out					
Lines disconnected, blinded or blocked					
Valves shut and locked/tagged out					

VENTILATION CHECKLIST	Yes	No	Time On	Inspected by:
Mechanical				
Natural ventilation only				

EHSO AIR MONITORING	Time	Result	Within Safe Parameters		Signature
			Yes	No	
Oxygen					
Flammable gasses (LEL)					
Carbon Monoxide					
Instrument Calibration					

Warning: If any “No” block is checked, entry is permitted only by approval of authorizing supervisor and EHSO

Authorizing Supervisor’s signature: _____

Authorizing EHSO signature: _____

The University of Oklahoma
CONFINED SPACE ENTRY PERMIT AND CHECKLIST
Entry Checklist

Date: _____ Time: _____

Location and Description of Confined Space: _____

Purpose of Entry: _____

Entrant(s): _____

Attendant(s): _____

SPECIAL PRECAUTIONS REQUIRED FOR ENTRY		
Action	Check	Initial
Notify Environmental Health and Safety Office 3 days in advance of project		
Obtain (2) two-way radios from Site Support		
Are all employees involved properly trained?		
Has area been ventilated for at least 10 minutes prior to entry		
Assign one person to wear personal monitoring devices for oxygen, LEL and carbon monoxide		

Authorizing Supervisor Name: _____

Authorizing Supervisor Signature: _____

Completion of Project Date: _____ Time: _____

Supervisor Signature of Permit Cancellation: _____

**The University of Oklahoma
 CONFINED SPACE ENTRY PERMIT AND CHECKLIST**

Attendant Checklist

Date: _____ Time: _____

Location and Description of Confined Space: _____

Two-way radio communication check with rescue service. Time: _____ By: _____

ENTRANT(S)	Time		Initial
	In	Out	

ATTENDANT AIR MONITORING	Oxygen	Flammable Gasses (Lel)	Carbon Monoxide	Initial
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				
Time: _____				

Warning: There can be no hazardous atmospheres within the confined space whenever a employee is inside. If a hazardous atmosphere is detected while in the workspace, each employee must leave the confined space immediately.

Attendant(s) Signature: _____