CONFINED SPACE PROGRAM

OVERVIEW

The purpose of this program is to inform interested persons, including employees, that the City of Mebane is complying with the Occupational Safety and Health Administration (OSHA) Confined Space Standard, Title 29 Code of Federal Regulations 1910.146.

The City has established the need for written procedures and programs for the evaluation of confined spaces, and where permit-required spaces are identified, development and implementation of a permit-required confined space entry program. The program applies to all municipal and contracted operations in the City of Mebane where employees must enter a confined space as part of their job duties.

In addition the Confined Space Program is designed to protect City of Mebane employees who must enter confined spaces and may be exposed to hazardous conditions. It describes the measures necessary to prevent unauthorized entry into permit-required confined spaces, identify and evaluate permit space hazards, implement the means, procedures, and practices necessary for safe entry operations, and rescue services.

PURPOSE

The program provides confined space guidance for municipal employees in the City of Mebane. Under this program, the City identifies permit-required spaces in the jurisdiction, and provides training for municipal employees according to their responsibilities in the permit space. These employees receive instructions for safe entry into specific type of confined spaces, including testing and monitoring, appropriate personal protective equipment, rescue procedures, and attendant responsibilities.

The procedures contained herein shall be reviewed at least annually, and, based on the ever changing work and natural growth of the City of Mebane so shall these documents be modified to reflect such growth and change. (*Copies of the written program may be obtained through Human Resources.*)

RESPONSIBILITY

The Human Resources Director, or designee, has overall responsibility for coordinating safety and health programs in the City of Mebane, including having overall responsibility for the Confined Space Program. Responsibilities include review and update of the program, annually and as necessary.

The City of Mebane has the expectation of each employee to understand his or her right to ask questions and seek more information if a program or task is not clear or well understood. If an employee has questions regarding the safety and health programs they should contact their supervisor for clarification. It is the responsibility of every employee to not only read, but also understand the information in this program. Each employee of the City of Mebane should consider it a personal responsibility to engage in daily activity that is safe and consistent with these programs.

The programs contained herein shall serve as a minimum guideline for entities conducting business/services within the jurisdiction of the City of Mebane. Prior to conducting any project the entity shall establish compliance with the guidance set forth in this document.

GENERAL REQUIREMENTS

Confined Spaces vs. Permit Required Confined Spaces

Confined Spaces are defined as all of the following:

- Is large enough and so configured that an employee can bodily enter and perform work;
- Has limited or restricted means of entry or exit (tanks, vessels, silos, hoppers, vaults, manholes and pits are examples), and
- Is not designed for continuous employee occupancy.

Permit Required Confined Spaces, are defined as follows:

- A Confined Space that also has any of the following characteristics:
- Contains or has a potential to contain a hazardous atmosphere,
- Contains a material that has the potential of engulfing an entrant
- 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
- Contains other recognized serious safety and health hazard.

Changes in Space Use or Configuration

When there are changes in the use and configuration of a non-permit confined space that might increase the hazards to entrants, the space is reevaluated and, if necessary, reclassified as a permit-required confined space.

Confined Space Reclassification

A permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

- If the space poses no actual or potential atmospheric hazards and the hazards are eliminated without entry, and as long as the non-atmospheric hazards remain eliminated.
- Entry into the space to eliminate the hazards is under an authorized permit and testing and inspection during the entry demonstrate the hazards were eliminated without requiring continuous forced air ventilation.
- A written certification is documented showing the hazards were eliminated. This should be maintained on file.
- If hazards arise within a permit space that has been declassified to a non-permit space, each employee must exit the space and the space is re-evaluated to determine if it must be reclassified as a permit space.

PERMIT REQUIRED CONFINED SPACE

This permit-required confined space program is designed to prevent unauthorized entry into permit spaces, identify and evaluate hazards and establish procedures and practices for safe entry including testing and monitoring conditions. The program requires: an attendant stationed outside permit spaces during entry; procedures to summon rescuers and prevent unauthorized personnel from attempting rescue; and a system for preparing, issuing, using and canceling entry permits.

The following means, procedures, and practices necessary for safe permit space entry operations have been implemented:

- *Acceptable Entry Conditions:*
  All permit space entrants protected from atmospheric hazards including oxygen deficiency (less than 19.5%) or increased oxygen concentration (greater than 23.5%), toxic materials (above the exposure limit), flammable gases and vapors, asphyxiating, and engulfment, configuration or any other recognized hazards.

- *Isolating the Permit Space:*
  All hazardous energy sources associated with permit spaces which may expose entrants to potential injury are isolated, locked out and/or tagged out prior to entry:

- *Purging, Inerting, Flushing, or Ventilating Permit Spaces:*
  All permit entry spaces are thoroughly purged, inerted, flushed, and/or ventilated as necessary to ensure the elimination and/or control of all hazards which may cause entrants injury and/or illness.

- *External Hazards:*
  Pedestrian, vehicle, or other barriers are provided as necessary to protect entrants from external hazards.

- *Verifying Acceptable Conditions:*
  Conditions in permit spaces are tested and monitored throughout entry as necessary to ensure that they are acceptable for the duration of the authorized entry.

Certification

According to 1910.146(c)(5)(ii)(H), Mebane employees verify that the space is safe for entry and that the pre-entry measures required by 1910.146(c)(5)(ii) have been taken, through a written certification that contains the date, location of the space, and signature of the person providing the certification. At the City of Mebane, supervisors are responsible for verifying these procedures. The certification is made before entry and is available to each employee entering the space.

Preventing Unauthorized Entry

To provide a safe work environment and to prevent exposed employees from accidentally entering a permit space, we have implemented the following procedures to inform all employees of the existence, location, and danger posed by permit spaces in City of Mebane.

- All affected employees have been informed through initial safety training about the characteristics and presence of permit spaces.
- Some permit spaces are also posted with danger signs to supplement the safety training. However, the posting of danger signs is not all inclusive and each employee must know what a permit space is, the usual hazards involved, and what precautions are required to ensure safe entry so they can help ensure their own protection.

Evaluating Conditions

Hazard Evaluation for Permit Spaces

To determine if there are permit-required confined spaces in City of Mebane, departments have conducted hazard evaluations of municipal workplaces. This evaluation has provided the City with the information necessary to identify the existence and location of permit-required confined spaces in the jurisdiction that must be covered by the Confined Space Entry Program.

Permit space conditions are evaluated (tested/monitored) when entry operations are conducted as follows:

Testing and Monitoring

- The entry conditions in the permit space are tested to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a steam tunnel or sewer), in such case, pre-entry testing is performed to the extent feasible before entry and entry conditions continuously monitored in work areas.
- The tests and monitoring are conducted in permit spaces as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
- When conducting tests for atmospheric hazards, oxygen tests are conducted first, combustible gases and vapors second, then for toxic gases and vapors. The tests are conducted in order to ensure that test instruments function properly since an oxygen deficient atmosphere may adversely affect the test results.

EQUIPMENT

To ensure the safety and health of city employees, City of Mebane provides appropriate equipment to all employees who work in or near our permit spaces. According to 1910.146(k)(3)(i), each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which City of Mebane can establish presents a profile small enough for the successful removal of the entrant. Wristlets may be used instead of the chest or full body harness if City of Mebane can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

The following equipment is provided at no cost to employees, maintained properly, and used properly to ensure the safety of employees entering permit spaces.

- Testing and monitoring equipment
- Ventilating equipment
- Communications equipment
- Personal protective equipment
- Lighting equipment
- Barriers and shields
- Ingress and egress equipment
- Rescue and emergency equipment

PERMIT SYSTEM

The entry permit is a vital part of the permit space entry program that documents the required measures have been taken to ensure entrant safety. All pertinent safety requirements must be recorded on the permit

including the isolation, ventilation, tests and monitoring, personal protective equipment and other equipment necessary for entrant safety.

Requirements

The following requirement must be recorded (documented) on the entry permit.

- Permit space to be entered, purpose of the entry, and the date and authorized duration of the entry permit;
- Names of authorized entrants (or other suitable tracking system);
- Current attendant's names;
- Entry supervisor's name (signature), including original authorizing supervisor,
- Hazards of the space;
- Measures used to isolate the space and to eliminate or control the space hazards, before entry;
- Acceptable entry conditions;
- Results of initial and periodic tests accompanied by the names, or initials, of the testers and time of the tests;
- Available rescue and emergency services and how to summon them;
- Communication procedures used by entrants and attendants to maintain contact during entry;
- Equipment, such as personal protective equipment, alarm systems and rescue equipment, to be provided;
- Any other pertinent information necessary to ensure entrant safety; and
- Additional permits, such as hot work that have been issued to authorize work in the space.

ATTENDANTS

At least one attendant is required outside the permit space into which entry is authorized for the duration of the entry operation.

- To know the hazards that may be faced during entry, including information on the mode, signs or symptoms and consequences of the exposure;
- To be aware of possible behavioral effects of hazard exposure in entrants;
- To continuously maintain an accurate count of entrants in the permit space and ensures a means to accurately identify authorized entrants;
- To remain outside the permit space during entry operations until relieved by another attendant (once properly relieved, they may participate in other permit space activities.
- To communicate with entrants frequently to monitor entrant status and alert entrants of the need to evacuate;
- To monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the entrants to immediately evacuate if: the attendant detects a prohibited condition, detects entrant behavioral effects of hazard exposure, detects a situation outside the space that could endanger the entrants; or if the attendant cannot effectively and safely perform all the attendant duties;
- To summon rescue and other emergency services as soon as the attendant determines that entrants need assistance to escape the permit space hazards;

- To take the following action when unauthorized persons approach or enter a permit space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the permit space,
  - Advise the unauthorized persons that they must exit immediately if they have entered the space, and
  - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;
- To perform non-entry rescues as specified by that rescue procedure and entry supervisor; and not to perform duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

ENTRANTS

All entrants must be authorized by the entry supervisor to enter permit spaces, have received the required training, use the proper equipment, and observe the entry procedures and permit. The following entrant duties are required:

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Properly use the equipment required for safe entry;
- Communicate with the attendant frequently to enable the attendant to monitor the status of the entrants and to enable the attendant to alert the entrants of the need to evacuate the space if necessary:
- Alert the attendant whenever: the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or any prohibited condition is detected; and
- Exit the permit space as quickly as possible whenever: the attendant or entry supervisor gives an order to evacuate the permit space, the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, the entrant detects a prohibited condition, or an evacuation alarm activated.

ENTRY SUPERVISORS

Entry supervisors are responsible for the overall permit space entry and must coordinate all entry procedures, tests, permits, equipment and other relevant activities. The following entry supervisor duties are required:

- Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure;
- Verifies, by checking that the appropriate entries have been made on the permit, all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;
- Terminate the entry and cancel the permit when the entry is complete or there is a need for terminating the permit;
- Verify that rescue services are available and that the means for summoning them are operational;
- Have unauthorized persons removed who enter or attempt to enter the space during entry operations; and
- Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space and that entry operations remain consistent with the permit terms and that acceptable entry conditions are maintained.

TESTERS AND MONITORS

The accuracy of testing and monitoring equipment may be significantly affected under certain conditions of humidity, pressure, or temperature or by the presence of interfering chemicals. However, if the equipment is properly selected calibrated, and maintained and operated by well-trained employees, the confined space testing and monitoring needs can be effectively met. All persons performing tests and monitoring for permit space entry have been properly trained in the use of and limitations of the following testing and monitoring equipment.

Procedures for Atmospheric Testing

Atmospheric testing is required for two distinct purposes: evaluation of the hazards of the permit space and verification that acceptable entry conditions for entry into that space exists.

- Evaluation Testing: The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that a appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data, and development of the entry procedure, is performed by, or reviewed by, a technically qualified professional (e.g., certified industrial hygienist, registered safety engineer, certified safety professional, etc.) based on evaluation of all serious hazards.
- Verification Testing: The atmosphere of a permit space which may contain a hazardous atmosphere is tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) are recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.
- Duration of Testing: Measurement of values for each atmospheric parameter is made for at least the minimum response time of the test instrument specified by the manufacturer.
- Testing Stratified Atmospheres: When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope is be tested a distance of approximately 4 feet (1.22m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress is slowed to accommodate the sampling speed and detector response.

CONTRACTORS

In some cases contractors and other non-employees may enter permit spaces to perform work. When contractors and others enter permit spaces the following procedures are followed:

City of Mebane Responsibility (Contracting Department's Project Manager)

- Contractors are to be informed that the workplace contains permit spaces and that they must follow a permit space entry program per OSHA standard 29 CFR 1910.146 and use an authorized permit for entry.
- Apprise the contractor of the elements, including the hazards identified and the experience with the space making it a permit space;
- Apprise the contractor of the precautions or procedures implemented for protection of employees in or near permit spaces; and
- Debrief the contractor at the conclusion of the entry regarding the permit space program followed and

regarding any hazards confronted or created in the space(s) during entry operations.

Contractor Responsibility

All contractors performing permit space entry are required to:

- Obtain and use the available information provided;
- Coordinate entry operations with other working in or near permit spaces; and
- Inform the host employer during debriefing or entry of the permit space program that will be followed, and any hazards confronted or created in the space(s).

RESCUE SERVICES

Alamance County Rescue provides rescue and emergency services (on-site and/or off-site). The rescue unit can be summoned by calling 911. The Mebane Fire Department and Alamance County Emergency Medical Services will respond accordingly as a support function and provide assistance to Alamance County Rescue. Department Heads who have employees performing Confined Space entries must provide the following to Alamance County Rescue, the primary response agency:

- Information concerning the hazard they may confront when Rescue is called to perform rescues; and
- Access to all permit spaces from which rescue may be necessary so they can develop appropriate rescue plans and practice rescue operations.

Alamance County Rescue (*Include information in agreement between rescue agency and the City)*

The Chief will insure that members of the unity who participate in confined space entry rescues adhere to the following minimum training and equipment standards.

- Perform the assigned rescue duties;
- Correctly use personal protective equipment (PPE) required for the job;
- Establish proficiency as an authorized entrant, as provided by 1910.146(g) and (h); and
- Perform basic first-aid and cardiopulmonary resuscitation (CPR).

Additionally

- Each member must be trained as an authorized entrant, and as needed, as an attendant and supervisor.
- Supply and use non-entry retrieval systems whenever they do not increase the overall risk of the entry.
- Ensure that members practice making permit space rescues at least every twelve months by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from actual or representative permit spaces.
- Comply with Non Entry Rescue requirements, when that type of equipment is used.

Non-Entry Rescue

Retrieval systems and methods have been developed for entrants to use when entering permit spaces, when the equipment does not increase the overall risk of entry and would not contribute to the rescue of the entrant. The systems include tripods with retrieval winches.

- Each authorized entrant uses a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head.
- Wristlets are only used in lieu of the chest or full body harness when it has been demonstrated that use of the chest or full body harness is infeasible or creates a greater hazard and wristlet use is the safest and most effective alternative.
- Retrieval lines are attached to a mechanical device or a fixed point outside the space so rescue can begin immediately after the rescuer becomes aware that rescue is necessary.
- Mechanical devices are available to retrieve entrants from vertical type permit spaces more than 5 feet deep.

TRAINING

All entry supervisors, attendants, and entrants are properly trained initially and refresher training provided when duties and space hazards change or whenever an evaluation determines inadequacies in the employee's knowledge. The training provides employees with the necessary understanding, skills and knowledge to safely enter, work in and exit permit spaces. All training is documented with the employee's names, signature or initials of the trainer and training date. Use Appendix A.

Requirements

Specific training requirements include, but are not limited to:

- Each affected employee is trained;
- Training is provided:
  - Before employee is first assigned permit space entry duties;
  - Whenever there is a change in permit space operations that present a new hazard unknown by the employee;
  - Whenever there is reason to believe either there are deviations from the entry procedures or inadequacies in the employee's knowledge or use of the procedures;
- The training establishes employee proficiency in the required duties and introduces new or revised procedures, as necessary;
- The training is certified and contains each employee's name, signatures or initials of the trainers, and training dates.
- The training certification is available for inspection by employees and their authorized representatives by contacting the Department Heads office.

POST OPERATION PROCEDURES

Upon completion of work in a permit space, City of Mebane employees close off the confined space and cancel the permit.

Review Procedures

To ensure that all employees participating in entry operations are protected from permit space hazards, City of Mebane reviews the permit-required confined space entry program on a regular basis. Mebane employees use the retained canceled permits from the past 12 months within one year after each entry and revise the program as necessary. City of Mebane performs a single annual

review covering all entries performed during a 12-month period. If no entry is performed during a 12-month period, no review will be performed.

Enforcement

Constant awareness of and respect for permit-required confined space entry hazards, and compliance with all safety rules are considered conditions of employment. Supervisors reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this permit entry program.

Policy Review and Critique Form

Review by:

Danny C. Lineberry Jr.

EnviroSafe Consulting and Investigation

2012 Anthony Road

Burlington, N.C. 27215

Date:

1 / 28 / 2015

Type of review:

Annual: _X_ Post-Emergency: ____

Problems leading to review:

_____

Problems noted during review:

_____

Action to be taken:

_____

Reclassification Certificate: Permit Space to Non Permit Space

CAUTION!!! THIS IS NOT A CONFINED SPACE ENTRY PERMIT.

This form must be filled out and signed by a Confined Space Entry Supervisor or a Qualified Health and Safety Professional. Reclassification of a Permit Required Confined Space to a Non Permit Required Confined Space is valid for a single shift. The following evaluation is consistent with OSHA 29 CFR 1910.146(c)(7).

Entry Supervisor (or Health and Safety Professional) - Complete the following:

Space: **Location:**	**YES**	**NO**	**Method of Hazard Elimination**
Is the space free of actual or potential atmospheric hazards (including, but not limited to drifting vapors from tanks, pipes, or sewers)?			(ex. Air monitoring performed)
Considering industrial or other discharges, is this area likely to remain free of air contaminants while occupied? (Consider the potential of equipment failure, other activities happening near the space, etc.)?			
Have all sources of hazards been isolated from the confined space without personnel entry? (All hazardous energy is controlled; lockout tagout procedures are in use, etc.)?			

*Entry Supervisor must notify the Office of Environmental Health and Safety of the scheduled entry and reclassification prior to entry activities.

If the answer to any of the above questions is "No" then the space cannot be reclassified from Permit Required Confined Space to Non Permit Required Confined Space and entry must be performed under permit conditions.

A copy of this form must remain at the entry site for the duration of the entry or shift whichever is shorter. This reclassification is considered valid for no greater than 1 shift or 8 hours. The department overseeing the entry is responsible for maintaining a copy of this form on file for a minimum of 1 year.

Name _____ Signature _____

Date _____ Time _____