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CONFINED SPACE ENTRY PROGRAM

Purpose

This Confined Space Entry Program has been developed in accordance with OSHA regulation 29 CFR Part 1910.146. The purpose of this program is to ensure that proper protection is taken for all employees working in confined spaces.

Scope

The Confined Space Entry Program shall apply to all areas of the Wastewater Utility. Under this program, staff will be informed of the contents of the Confined Space Entry Standard and measures to take for protection when entering such spaces.

Employee's are prohibited from entering any identified confined space or space, that because of suspected environmental conditions may become a confined space, without meeting the permit requirements outlined in this document.

Responsibilities

The Wastewater Utility will 1) identify any spaces that are permit-required confined spaces, 2) inform potentially exposed employees of the permit-required confined spaces, 3) determine whether employees will enter permit spaces and effective measures that will be taken to prevent employees from entering if determined so, and 4) implement a permit space entry program if employees will be entering the permit spaces.

Employee's are prohibited from entering any identified confined space or space, that because of suspected environmental conditions may become a confined space, without meeting the permit requirements outlined in this document.

The Assistant Director of Utilities – Wastewater is responsible for this program and has authority to make decisions to ensure the success of this program. The individual duties of permit confined space participants are outlined in MP3407 Confined Space Entry Procedure.

Program Review and Update

This Confined Space Program will be reviewed and updated at a minimum annually and under these circumstances:

- 1) the Wastewater Utility identifies changing conditions which render the current program inadequate in protection.
- 2) permit-required confined space program review, using cancelled permits* indicate revisions are necessary

* Cancelled permits must be retained for at least one (1) year after each entry.

Review by outside party such as the Kansas Department of Labor shall be conducted annually.

Employee Information and Training

The Wastewater Utility will provide training so that employees acquire the understanding, knowledge, and skills necessary for the safe performance of the duties as assigned. Training will be provided:

- 1) Before the employee is first assigned duties under this regulation
- 2) Before changing permit space requirements that the employee has not been previously trained on
- 3) As deemed necessary by management

The manager or designee will verify that the required training has been completed and the employee is competent at performing the assigned duties.

Facility Confined Spaces

The Wastewater Utility shall not be conducting confined space entries in what is defined as "permit-required confined spaces" or "IDLH" defined as one or more of the following:

- 3) Contains or has a potential to contain a hazardous atmosphere
- 4) Contains a material that has the potential for engulfing an entrant
- 5) 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
- 6) Contains any other recognized serious safety or health hazard

All confined space entries at the Wastewater Utility facilities as determined by management require permitted entry as described in this procedure. Confined space entry include but may not be limited to:

- 1) Any contained area accessed through manholes
- 2) Any drained basin, structure, or tank
- 3) Any designated confined space that does not test for oxygen above 19.5%
- 4) Raw sewage wet well and screen channels
- 5) Any drained anaerobic digester
- 6) Any other area that has potential for rapidly changing environments that may create conditions that are IDLH

CONFINED SPACE ENTRY REQUIREMENTS

General Requirements

The Wastewater Utility will meet all of the following sections for entering all permit spaces:

- 1) Any condition making it unsafe to remove an entrance cover will be eliminated before the cover is removed.
- 2) Before covers are removed, the entrance will be promptly guarded by a barrier that will prevent accidental fall through the opening and will protect employees in the space from foreign objects entering the space.
- 3) Before an employee enters the space, the internal atmosphere will be tested with a calibrated direct-reading instrument, for the following conditions in the order given:
 - a. Oxygen content

- b. Flammable gases and vapors, and
 - c. Potential toxic air contaminants.
- 4) A hazardous atmosphere may not exist within the space when an employee is inside the space.
 - 5) Continuous forced air ventilation will be used as follows:
 - a. An employee may not enter the space until forced air ventilation has eliminated a hazardous atmosphere;
 - b. Forced air ventilation will be directed to ventilate the immediate areas where an employee is or will be, and will continue until all employees have left the space.
 - c. The air supply for the ventilation will be clean and may not increase the hazard.
 - 6) The atmosphere within the space will be continuously tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
 - 7) If a hazardous atmosphere is detected during entry:
 - a. Each employee will leave the space immediately;
 - b. The space will be evaluated to determine how the hazardous atmosphere developed;
 - c. Measures will be implemented to remove the hazardous atmosphere before a subsequent entry.
 - 8) Before each entry, the manager or designee will verify that the space is safe for entry and that the measures above have been taken, with a written certification giving the date, location of the space, and signature of the person providing the certification.

Recurring Permits

Standing permits may be issued for spaces not designated as IDLH when repetitive work is required if safety is not compromised. These permits may be issued for up to 30 days after which time the permit circumstances must be reviewed by a Supervisor and a new permit issued.

Permit-Required Confined Space

The Wastewater Utility has implemented the following measures necessary to prevent unauthorized entry to confined spaces by requiring the permit procedure to be followed for all confined spaces.

- 1) The manager or designee will identify and evaluate the hazards of the permit spaces before employees enter them by performing atmospheric testing.
- 2) The manager or designee will provide the following equipment at no cost to employees, and maintain the equipment properly, and ensure that employees use that equipment properly:
 - a. Testing and monitoring equipment needed to evaluate the permit space conditions;
 - b. Ventilating equipment needed to obtain acceptable entry conditions;
 - c. Communications equipment;
 - d. Forced air respirators
 - e. Personal protective equipment;
 - f. Lighting equipment needed to enable safe working and exit from the

- space;
 - g. Barriers and shields to protect entrants from external hazards;
 - h. Equipment needed for safe ingress and egress;
 - i. Rescue and emergency equipment to comply with this program;
 - j. Any other equipment necessary for safe entry and rescue.
- 3) There will be at least one attendant outside the permit space for the duration of entry operations;
 - 4) If multiple spaces are to be monitored by a single attendant, means and procedures to enable the attendant to respond to an emergency in one or more spaces without distraction from the attendant's responsibility under this program will be provided.
 - 5) The manager or designee designates the persons who are to have active roles in entry operations, their duties, and provide each with the training required by this program.
 - 6) The manager or designee will develop and implement a procedure for summoning rescue and emergency services, for rescuing entrants, and for preventing unauthorized personnel from attempting a rescue;
 - 7) The manager or designee will develop and implement procedures to coordinate entry operations when employees of more than one employer are entering a permit space so that they do not endanger each other;
 - 8) The manager or designee will develop and implement a system for the preparation, issuance, use, and cancellation of entry permits;
 - 9) The manager or designee will develop and implement procedures to coordinate entry after operations are completed;

Permit System

- 1) Before entry is authorized, the manager or designee will document the completion of the measures below by preparing an entry permit. The manager or designee will develop and implement the means, procedures, and practices necessary for safe entry, including:
 - a. Specifying acceptable entry conditions, including recording of gas detector readings;
 - b. Isolating the permit space;
 - c. Purging, flushing, or ventilating the permit space to eliminate or control atmospheric hazards;
 - d. Providing barriers as necessary to protect entrants from external hazards
 - e. Verifying conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
 - f. It is the strict practice of the Wastewater Utility that any confined space that does not meet all required limits shall not be entered until all limits have been met.
- 2) Before entry, the manager or designee will sign the permit to authorize entry.
- 3) The completed permit will be made available to all authorized entrants to confirm that pre-entry preparations have been completed.
- 4) The duration of the permit will not exceed the time required to complete the assigned task or job.

- 5) The manager or designee will terminate entry and cancel a permit when:
 - a. Operations have been completed; or
 - b. A condition that is not allowed under the entry permit arises in or near the permit space.
- 6) The manager or designee retains each entry permit for at least one (1) year to facilitate the review of the permit-required confined space program. Any problems encountered during an entry operation will be noted on the permit so that appropriate revisions to the program can be made.

Entry Permit

The entry permit that authorizes entry into a permit space shall identify:

- 1) The space to be entered;
- 2) The purpose of the entry;
- 3) The date and authorized duration of the entry;
- 4) The authorized entrants;
- 5) The personnel serving as attendants;
- 6) The individual serving as the entry supervisor;
- 7) The hazards of the permit space to be entered;
- 8) The measures used to isolate the space and eliminate or control hazards before entry;
- 9) The acceptable entry conditions;
- 10) The results of initial and periodic tests performed below (accompanied by the names or initials of the testers and by an indication of when the tests were performed):
 - a. Test conditions in the permit space 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 larger or is part of a continuous system (such as a sewer), pre-entry testing will be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions will be continuously monitored in the areas where authorized entrants are working;
 - b. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations, and;
 - c. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, then for toxic gases and vapors.
- 11) The rescue and emergency services that can be called and how to call them;
- 12) The communication procedures used by entrants and attendants to maintain contact with each other;
- 13) Equipment, such as testing equipment, to be provided for compliance with 29 CFR 1910.146;
- 14) Any other information necessary to ensure employee safety; and
- 15) Any additional permits issued for work in the space.

Duties of the Authorized Entrants

The manager or designee shall ensure that all authorized entrants:

- 1) Know the hazards that may be faced during entry;

- 2) Make proper use of the equipment required;
- 3) Communicate with the attendant as necessary to enable the attendant to monitor the entrants and to enable the attendant to alert entrants of the need to evacuate as required.
- 4) Alert the attendant whenever:
 - a. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
 - b. The entrant detects a prohibited condition,
- 5) Exit from the permit space as quickly as possible whenever:
 - a. An order to evacuate is given by the attendant or supervisor;
 - b. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation,
 - c. The entrant detects a prohibited condition; or
 - d. An evacuation alarm is activated.

Duties of Attendants

The manager or designee shall ensure that each attendant:

- 1) Knows what hazards that may be faced during entry;
- 2) Is aware of possible behavioral effects of hazard exposure;
- 3) Continuously maintains an accurate count of entrants;
- 4) Remains outside the permit space during entry until relieved by another attendant;
- 5) Communicates with entrants as necessary to monitor their status and to alert them of the need to evacuate;
- 6) Monitors activities inside and outside the space to determine if it is safe and orders evacuation immediately under any of the following conditions:
 - a. If the attendant detects any prohibited condition;
 - b. If the attendant detects the behavioral effects of hazard exposure in an entrant;
 - c. If the attendant detects a situation outside the space that could endanger entrants; or
 - d. If the attendant cannot effectively and safely perform all duties required.
- 7) Summons rescue and other emergency services as soon as it is determined that entrants may need assistance to escape;
- 8) Takes action when unauthorized persons approach or enter a permit space while entry is underway;
- 9) Performs non-entry rescues as specified by the employer's rescue procedure; and
- 10) Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

Duties of Entry Supervisors

The manager or designee will ensure that each entry supervisor:

- 1) Knows and understands the hazards that may be faced during entry;
- 2) Verifies, by checking that the appropriate entries have been made on the permit, that 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;
- 3) Terminates the entry and cancels the permit as required by this program.
 - 4) Verifies that rescue services are available and that the means for summoning them are operable;
 - 5) Remove unauthorized individuals who enter or attempt to enter the permit space during operations; and
 - 6) Determines that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

Rescue and Emergency Services

Rescue will be performed by the Lawrence Fire Department and will be contacted by the attending employees by radio and/or by dialing 911. The attending team may not access the confined space for rescue purposes. If appropriate, attempts can be made by the attending employees from outside the space to retrieve the entrant.

The attending team will:

- 1) Inform the rescue service of the hazards they may confront when called on to perform a rescue
- 2) Provide the rescue service with access to all permit spaces from which rescue may be necessary to allow them to develop rescue plans and practice rescues.

To facilitate non-entry rescue, retrieval systems or methods will be used whenever an authorized entrant enters a permit space, unless this would increase risk or would not assist the rescue. Retrieval systems will meet the following:

- 1) Each authorized entrant will use a chest or full body harness with a retrieval line. Wristlets may be used in lieu of a harness if the employer can demonstrate that they are a safer, more effective alternative.
- 2) The other end of the retrieval line will be attached to a mechanical device or fixed point outside the permit space so that a rescue can begin as soon as it becomes necessary.
- 3) If it is determined that the retrieval system will inhibit a rescue or prohibit the completion of the task, the manager or designee may opt to not use the retrieval system. However, a communications system will be used to alert the attendant of problems.

If an injured entrant is exposed to a substance for which an MSDS sheet or other similar written information is required, that sheet or written information will be made available to the medical facility treating the exposed entrant.

Rescue and Emergency Services

Rescue will be performed by the Lawrence Fire Department and will be contacted by the attending employees by radio and/or by dialing 911. The attending team may not access the confined space for rescue purposes. If appropriate, attempts can be made by the attending employees from outside the space to retrieve the entrant. See MP3407 Confined Space Entry Procedure for more information.

Outside Contractors

Each contractor that performs permit space entry will be required to have a confined space program. However the Wastewater Utility takes no responsibility for review or approval of the contractor's program. The contractor will be required to:

1. Obtain any available information regarding permit space hazards from the Wastewater Utility
2. Coordinate entry operations with the Wastewater Utility, when both Wastewater Utility personnel and contractor personnel work in or near permit spaces, as required in this program.

Reference

DOC3005 Respiratory Protection Program