CITY OF MURRAY

SAFETY MANUAL

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Bill Wells

Mayor

City of Murray

To all City Employees:

Safety is a fundamental obligation of everyone. Every employee is entitled to a safe and healthy place to work. Our goal at the City is to obtain maximum safety in all day-to-day operations by strict compliance to all applicable federal, state, local, and City policies.

The success of the City will depend not only on service, but also how safely each job is performed. ***There is no job so important, nor any service so urgent, that we cannot take time to work safely.***

We consider the safety of our personnel to be of prime importance. A safe environment is a shared responsibility between the City and its Employees at all levels of the organization. We expect your full cooperation in making our safety program an effective program. Failure to comply with these policies may result in disciplinary actions.

The following "Safety Handbook" is being provided to you so that you may be better prepared to meet the objectives the City has established on your behalf.

_____ Date: _____

Mayor

Disclaimer

The information contained within this document is drawn from sources believed to be reliable and credible. The safety rules contained herein are based on the injury-prevention guidelines, which are drawn from currently established federal and state rules and regulations.
The City of Murray does not represent that this handbook is a complete resource for every injury related situation that may arise. While the City of Murray has made every attempt to include accurate, complete, and current information herein, the City of Murray does not guarantee complete and full compliance with federal, state, and local regulations, which may be applicable to varied conditions and/or practices.

The City of Murray makes no guarantee of the outcome of any given situation as a result of following the guidelines and practices stated within this document. The City of Murray assumes no liability in connection with the practices and applications of the herein stated rules and guidelines in the event same should result in injury to any person, employee, or fellow employee.

Again, it should not be assumed that every safety procedure has been discussed herein. It should be recognized that abnormal and unusual circumstances may exist which may not warrant the application of the practices and procedures that are outlined in this handbook.

Concerning each and every decision which affects the safety of the employees, the City of Murray urges its employees and fellow employees, at all times, to use common sense and knowledge of safety procedures and to take every precaution necessary to prevent injury in conjunction with the utilization of the guidelines stated herein, whenever applicable and appropriate. No person shall be relieved of personal negligence as a result of his or her utilization of the guidelines stated herein.

This handbook is to be utilized as a guideline. The City of Murray urges all employees to adhere to the strictest safety measures and precautions in order to preserve individual safety in the work place.

General Information

This safety program will be published in manual form and distributed to each department of the City of Murray. A minimum of one (1) copy will be placed in the break room of each division where it will remain readily accessible to all employees of that division.
Safety training will be scheduled on an annual basis and employees shall be notified of said training. It is the responsibility of each department supervisor to make sure that work schedules can be altered so that employees can attend training sessions. It will be the responsibility of each department supervisor, or his/her designee, to train new hires in safe practices and procedures that shall be used to achieve safe and timely completion of projects.

The City of Murray will designate a person responsible for overseeing the safety program from each City department. The responsibilities of the designated safety official are, but not limited to:

1. Retain a copy of this publication.
2. Advise City department supervisors and employees of changes in state and federal regulations in regard to safety issues to help assure compliance.
3. Analyze and classify accidents reported to see how employees can be advised on what may have been the causative factor of the accident and how to avoid similar problems in the future.
4. Administer disciplinary or administrative action where an accident review or inspection indicates serious, repeated or flagrant violation of this program or other pertinent safety doctrine.
5. Educate employees through weekly training sessions on how to comply with safety regulations.
6. Help establish a safety committee that shall meet monthly. The responsibility of the safety committee shall be:
    a. To help assure departmental compliance with safety rules and regulations.
    b. Recommend topics of safety that they feel may need to be refreshed or taught to each department.
    c. Evaluate the effectiveness of safety plans and programs.
    d. Canvass workers in their specific areas of employment for suggestions that can enhance the safety environment of the area.
    e. Serve as a good-will ambassador for the department by promoting a safety first attitude.

General Safety Practices and Equipment

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

The overriding concern of any accident prevention program is prevention of accidents that harm persons or property.
Each person must carefully consider the job from their view point of performing the task safely and efficiently. To assist employees in safe performance, we urge all employees to be aware of the following:

1. ***Be Aware – Be Alert – Be Conscious*** of your safety and the safety of your fellow employees and citizens as a whole.
2. **Read the safety signs and obey them.** If you are responsible for the placement of safety signs be diligent in the practices of placing and removing signs in work zones.
3. **Use common sense and stay focused on the task.**
4. **Use tools designed for the task properly.** Do not overload and assure that balance can be obtained and maintained through the task.
5. **PPE MUST BE WORN WHEN REQUIRED.** The use of personal protective equipment is mandatory for the protection of the employee and those working in the near proximity of tools or equipment.
6. **Hard hats must be worn in all construction zones and where other hazards exist.** Visitors are not exempt from PPE requirements.
7. **Eye protection must be worn for all activities that present a danger to the eyes.** Special care shall be taken in regard to welding, grinding or chemical handling operations.
8. **Gloves, protective clothing, and safety shoes must be worn to protect extremities when required.**
9. **Always restore or replace used respiratory equipment for the next user.**
10. **Safety belts, fall prevention, and personal lifting devices are REQUIRED.**
11. **First aid kits, blood borne pathogen kits, eye wash solutions, and similar emergency aids are available in work areas and vehicles.** Any needed replacements should be done IMMEDIATELY.

12. **When dealing with lifting or lowering objects:**
    a. Use mechanical handling equipment when possible:
        i. Check equipment capacity.
        ii. Use slings or life devices designed for the job.
        iii. Never use frayed rope or wire.
        iv. Stand clear while lifting over head.
    b. When physically lifting or lowering:
        i. Get a good footing.
        ii. Place feet shoulder width apart.
        iii. Bend at the knees.
        iv. Keep the back straight.
        v. Get a firm grip.
        vi. Straighten legs while lifting.
        vii. Bend legs while lowering.
        viii. DO NOT TWIST THE BODY. Always maintain a neutral alignment while turning.
        ix. If the load is too heavy - get assistance. (One person should not lift more than 50 lbs.)
13. **Fall Prevention**
    a. Use safety belts and fall prevention equipment on all slopes more than 15°.
    b. Do not run on stairs or inclined surfaces.
    c. Practice good housekeeping.
        i. Clean up any spills that can cause a fall.
        ii. Pick up or bend exposed nails.
        iii. Remove extraneous matter such as ropes, wire, lumber, tools, unused machinery or extension cords from work areas.
    d. Keep one hand on handrails when going up or down stairs.
    e. Use a flashlight in dark areas.

14. **Running and Walking**
    a. Do not run except in extreme emergencies.
    b. Do not jump across ditches, scaffolds or platforms.
    c. Use a ladder to get in and out of trenches.
15. **Keep stairs and walk ways free of any objects.** Never store tools or other materials on stairways.
16. **Inspect the condition of hand rails and safety rails frequently.**
17. **When climbing stairs, do not take more than one step at a time.**
18. **Report all loose treads, risers, or handrails.**
19. **Keep aisles and walkways clear of obstructions.**

Personal Injury Reporting

Any personal injury arising out of, and in the course of, employment shall be reported to the employee's supervisor and the Human Resources Manager immediately. In no instance shall the report be made later than 24 hours after the injury occurred or the illness has been discovered.

Employees are required to fill out and sign an Incident Report Form (Appendix C) and forward to the Human Resources Manager. An Incident Report Form must be in the employees own words and handwriting as required by legal representatives for the City of Murray.

Employees are not guaranteed the right to have injuries covered by workers compensation. The insurance carrier for workers compensation will assign a representative to investigate the claim and review medical history and doctors notes before a determination is made. (Part VII-A of the City of Murray Policies and Procedures Handbook) It is the responsibility of each employee to communicate with the Human Resources Manager and workers compensation carrier to help assure accurate reporting and fact finding in regard to the injury and claim.

Personal Protective Equipment Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This Personal Protective Equipment Program applies to all City of Murray employees in city applications. Personal Protective Equipment (PPE) is designed to protect the employee from health and safety hazards that cannot practically be removed from the work environment. It is the last means of defense. It should be used only when the hazards cannot be eliminated through engineering and/or administrative controls.

Purpose:

The purpose of this program is to minimize the risks of possible hazards which are present or likely to be present for the City of Murray employees. This program will not only provide selections for the appropriate Personal Protective Equipment, but also will provide training to each employee who is required under this standard.

Authority:

Kentucky Occupational Safety and Health Administration (KOSHA)

Policy:

The Personal Protective Equipment Policy is under the direct control of the Department Directors, with the supervisors of each department as their personal representative, under the supervision of the Safety Department.

The City of Murray is to provide all affected employees with a safe working environment. This is accomplished as far as feasible with accepted engineering controls and administrative controls. Where these methods are not feasible, proper personal protective equipment is provided at no cost to the employee.

The City of Murray has made a commitment to establish and maintain a Personal Protective Equipment program consistent with the goal of protecting our employees. It is therefore, the policy that all employees, when using personal protective equipment in the workplace, will follow.

Guidelines:

1. The guidelines in this program are designed to help reduce employee exposure to occupational hazards.
2. The primary objective is to protect employees from hazards that are present or likely to be present.

3. When hazards are present, the appropriate personal protective equipment will be available.

Responsibilities:

1. **DEPARTMENT DIRECTORS:**

City Administrator	Director of Finance
Director of Public Works	Director of Planning and Engineering
Chief of Police	Fire Chief

It is the Department Director's responsibility, with help from supervisors, to ensure that all workers have the appropriate Personal Protective Equipment (PPE) they need to perform their duties safely.

They are also responsible for maintaining records of safety specifications for all Personal Protective Equipment (PPE) and documentation of the training of the proper usage, limitations, cleaning and inspection methods, and when it should be taken out of service.

2. **SUPERVISORS:**

Accountant	GIS Supervisor
Assistant Fire Chief	Human Resources Manager
Assistant Superintendent of Field Operations	Information Technology Manager
Cemetery Supervisor	Maintenance Operations Supervisor
City Planner	Major/Assistant Police Chief
Crew Chief (Gas)	Office Manager
Crew Chief (Solid Waste)	Plant Operations Superintendent
Crew Chief (Street)	Police Captain
Crew Chief (Water)	Police Sergeant
Customer Billing Team Leader	Project Manager
Customer Service Team Leader	Solid Waste Superintendent
Field Operations Superintendent	Storm Water/Drainage Supervisor
Field Operations Supervisor (Gas)	Street Superintendent
Field Operations Supervisor (Water)	Street Supervisor
Fire Captain	Transfer Station Supervisor
Fire Lieutenant	Wastewater Plant Chief Operator
Gas Superintendent	Water Plant Chief Operator

Supervisors are responsible for insuring that all personnel under their control are completely knowledgeable of the PPE requirements for the areas in which they work. They are also responsible for insuring compliance with all aspects of this program, including personal protective equipment inspection and maintenance.

3. EMPLOYEES

It is the responsibility of the employees to have an awareness of the personal protective equipment requirements for their work areas. Employees are also responsible for wearing the appropriate equipment according to proper instructions and for maintaining the equipment in a clean and operable condition.

4. SAFETY DEPARTMENT

Human Resources Manager
Safety Consultant
Safety Intern
City Administrator
Department Head

The Safety Department is responsible for the overall program administration. They are responsible for ensuring proper training is provided and documented and for ensuring that all equipment purchased meets the applicable American National Standards Institute (ANSI) and/or the National Fire Protection Administration (NFPA) standards.

Hazard Assessment

A hazard assessment should be visually conducted by the supervisor prior to the beginning of any new job. When conducting a hazard assessment, a task is investigated and the hazards and the potential hazards associated with the task are identified. This allows the worker to isolate the potential hazard using an effective type of PPE.

During an assessment the following hazards shall be assessed:

1. High or low temperatures
2. Sharp objects that pose a cutting, slicing, piercing hazard
3. Sources of falling objects or potential for falling objects
4. Electrical Hazards
5. Harmful dusts
6. Chemical exposures
7. Light radiation
8. Any other identified potential hazard

PPE Selection Guidelines

Personal Protective Equipment (PPE) includes all clothing and work accessories designed to protect employees from workplace hazards. Protective equipment should not replace engineering, administrative, or procedural controls for safety. It should be used in conjunction with these controls.

Become familiar with the hazards present before selecting the appropriate PPE. Select the protective equipment that ensures a level of protection greater than the minimal required ensuring maximum safety.

When selecting PPE also give consideration to the comfort and fitting. Protective equipment that does not fit correctly will not properly provide the level of protection needed. Also make sure the equipment is comfortable to ensure the continued use of it.

Eye and Face Protection

Safety glasses, goggles and face shields protect your eyes and face from flying objects, chemical splash, direct sun/UV rays, and chemical gas hazards. These glasses/goggles/shields shall have side shields. All protective eye and face protection has different limitations and if unsure about these refer to the manufacturer's recommendations. NOTE: If the employee has any sort of vision enhancing devise such as glasses, the employee still has to have the appropriate eye protection.

Hand Protection

Hand protection is required when employees' hands are exposed to chemicals, abrasions, cuts or lacerations, or heat/cold. Make sure glove type is suitable for each specific hazard. These gloves include but are not limited to: chemical resistant, leather, rubber, cut resistant, and welder's gloves.

Footwear

Employees who are exposed to hazards that may cause foot injuries due to falling or rolling objects, objects piercing the sole, extreme cold, wetness, slipping, electrical shock, or any other hazard shall be required to wear appropriate footwear.

Limitations

Know the limitations of the protective equipment that is being used. If at any time the equipment looks damaged or loses its protection factor, dispose of it and replace immediately.

Training

The Safety Department will ensure training is provided to each employee upon hire and annually thereafter. Each employee will be trained to know the following:

1. When PPE is necessary
2. What type of PPE is necessary
3. How to properly wear PPE
4. Limitations of PPE
5. Proper care/maintenance/useful life of PPE

Each employee required to wear PPE shall be required to exhibit his/her understanding of the elements above.

Record Keeping

The Human Resources Department will verify that the employee has a thorough understanding of the required training mentioned above.

1. All training must be documented
2. Upon completion, the proper training documentation form must be completed

Hazard Communication & Chemical Safety Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

This program serves as the City of Murray's Hazard Communication Program. It provides detailed safety guidelines and instructions for receipt, use and storage of chemicals at our facility by employees and contractors. Reference: OSHA Standard 1910.1200.

Responsibilities:

Management:

- Ensure compliance with this program
- Conduct immediate corrective action for deficiencies found in the program
- Maintain an effective Hazard Communication training program
- Make this plan available to employees or their designated representative

Supervisors:

- Comply with all specific requirements of the program
- Provide specific chemical safety training for assigned employees
- Ensure chemicals are properly used, stored & labeled
- Ensure only the *necessary minimum amount of the chemical* is kept at work stations
- Ensure up to date SDS are readily accessible to all employees on all shifts

Employees:

- Ensure all received and shipped containers are properly labeled and that labels are not removed or defaced
- Ensure ALL shipping department employees are properly trained in spill response
- Ensure received Safety Data Sheets (SDS) are properly distributed
- Obtain SDS from the manufacturer for chemicals purchased from retail sources
- Comply with chemical safety requirements of this program
- Report any problems with storage or use of chemicals
- Immediately report spills or suspected chemical spills
- Use only those chemicals for which they have been trained
- Use chemicals only for specific assigned tasks in the proper manner

Department Director/Employees:

- Maintain a list of hazardous chemicals using the identity that is referenced on the SDS
- Ensure SDSs are available as required
- Monitor the effectiveness of the program
- Conduct annual audit of the program
- Monitor employee training to ensure effectiveness
- Keep management informed of necessary changes
- Monitor facility for proper use, storage and labeling of chemicals

Contractors:

- Comply with all aspects of this program
- Coordinate information with the Safety Manager
- Ensure Contractor employees are properly trained
- Notify the Department Director or their designee if an HMIS or NFPA level is 2 or greater before bringing any chemicals on City property or City facilities
- Monitor and ensure proper storage and use of chemicals by Contractor employees
- OSHA required training, chemical inventory, equipment, and written programs must be available upon request

General Program Information

This written Hazard Communication Plan (HAZCOM) has been developed based on OSHA Hazard Communication Standard and consists of the following elements:

-Identification of Hazardous Materials
-Product Warning Labels
-Safety Data Sheets (SDS)
-Written Hazard Communication Program
-Effective Employee Training

Some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and/or property damage, persons who handle chemicals in any area of the Company must understand the hazardous properties of the chemicals. Before using a specific chemical, safe handling methods and health hazards must always be reviewed. Supervisors are responsible for ensuring that the equipment needed to work safely with chemicals is accessible and maintained for all employees on all shifts.

Employee Training

Initial Orientation Training:

All new employees shall receive safety orientation training covering the elements of the HAZCOM and Right to Know Program. This training will consist of general training covering:

- Location and availability of the written Hazard Communication Program
- Location and availability of the List of Chemicals used in the workplace
- Methods and observation used to detect the presence or release of a hazardous chemical in the workplace
- The specific physical and health hazard of all chemicals in the workplace
- Specific control measures for protection from physical or health hazards
- Explanation of the chemical labeling system
- Location and use of SDSs

Job Specific Training

Employees will receive on the job training from their supervisor. This training will cover the proper use, inspection and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

Annual Refresher Training

Annual Hazard Communication refresher training will be conducted as part of the City of Murray's continuing safety training program.

Immediate On-the-Spot Training

On-the-spot training will be conducted by supervisors/safety department for any employee that requests additional information or exhibits a lack of understanding of the safety requirements.

Non-Routine Tasks

Non-routine tasks are defined as working on, near, or with unlabeled piping, unlabeled containers of an unknown substance, confined space entry where a hazardous substance may be present and/or a one-time task using a hazardous substance differently than intended (example: using a solvent to remove stains from tile floors).

Steps for Non-Routine Tasks:

Step 1: Hazard Determination

Step 2: Determine Precautions

Step 3: Specific Training & Documentation

Step 4: Perform Task

All non-routine tasks will be evaluated by the Supervisor or Safety Department before the task commences, to determine all hazards present. This determination will be conducted with

quantitative/qualitative analysis (air sampling, substance identification/analysis, etc., as applicable).

Once the hazard determination is made, the Supervisor or Safety Department will determine the necessary precautions needed to remove the hazard, change to a non-hazard, or protect from the hazard to safeguard the Employees present. In addition, the Department Supervisor or Safety Department will provide specific safety training for Employees present or affected and will document the training using the *Chemical Safety Training Checklist* form which shall be marked "***Non-Routine Task Training".***

*****Technical Rescue Team members should follow specific training standards during emergency operations.**

Off-site Use or Transportation of Chemicals

An SDS will be provided to employees for each chemical and each occurrence of use or transport away from the company facilities. All State and Federal DOT Regulations will be followed including use of certified containers, labeling & marking, securing of containers and employee training.

General Chemical Safety:

Assume all chemicals are hazardous. The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects.

The following general safety rules shall be observed when working with chemicals:

- Read and understand the Safety Data Sheets
- Keep the work area clean and orderly
- Use the necessary safety equipment and personal protective equipment
- Carefully label every container with the identity of its contents and hazard warnings using the corresponding GHS label
- Store incompatible chemicals in separate areas
- Substitute less toxic materials whenever possible
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods
- Provide means of containing the material if equipment or containers should break or spill their contents

Task Evaluation

Each task that requires the use of chemicals should be evaluated to determine the potential hazards associated with the work. This hazard evaluation must include the chemical or combination of chemicals that will be used in the work, as well as other materials that will be used near the work. If a malfunction during the operation has the potential to cause serious injury or property damage, a Safe Operational Procedure (SOP) should be prepared and followed. Operations must be planned to minimize the generation of hazardous wastes.

Chemical Storage

The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by accidental mixing. **Explosives and bulk materials which could be explosive should be stored separately outdoors.** Use either distance or barriers (e.g., trays) to isolate chemicals into the following groups:

- Flammable Liquids: store in approved flammable storage lockers.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other material
- Other liquids: ensure other liquids are not incompatible with any other chemical in the same storage location.
- Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake.

Chemicals will not be stored in the same refrigerator used for food storage. Refrigerators used for storing chemicals must be appropriately identified by a label on the door.

Container Labels

It is extremely important that all chemical containers are labeled properly. This includes every type of container from a 5000 gallon storage tank to a spray bottle of degreaser. The following requirements apply:

- All containers must have the appropriate label, tag, or marking prominently displayed.
- Portable containers which contain a small amount of chemical DO NOT need to be labeled if they are used immediately that shift, but must be under the strict control of the employee using the product.

- All warning labels, tags, etc., must be maintained in a legible condition and not be defaced. Facility quarterly supervisor inspections will check for compliance of this rule.
- Incoming chemicals are to be checked for proper GHS labeling.

Emergencies and Spills

In case of an emergency, implement the proper Emergency Action Plan:

- Evacuate people from the area.
- Isolate the area.
- Turn off ignition and heat sources if the material is flammable.
- Only personnel specifically trained in emergency response are permitted to participate in chemical emergency procedures beyond those required to evacuate the area.
- Call for Emergency Response Team assistance if required. (Hazmat 1 Paducah (270) 444-8575)

Housekeeping

- Maintain the smallest possible inventory of chemicals to meet immediate needs.
- Review stock of chemicals on hand every quarter.
- Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from accidental spills.
- Rinse emptied bottles that contain acids or inflammable solvents before disposal.
- Recycle unused laboratory chemicals whenever possible.
- ***DO NOT*** Place hazardous chemicals in salvage or garbage receptacles.
- ***DO NOT*** Pour chemicals onto the ground.
- ***DO NOT*** Dispose of chemicals through the storm drain system.
- ***DO NOT*** Dispose of highly toxic, malodorous chemicals down sinks or sewer drains.

Contractors

All contractors working for the City of Murray are required to follow the requirements of this program. The City of Murray will provide Contractors information concerning:

- Precautions to be taken to protect contractor employees
- Potential for exposure to hazardous substances
- Chemicals used in or stored in areas where they will be working
- Location and availability of Safety Data Sheets
- Recommended Personal Protective Equipment
- Labeling system for chemicals

***** OSHA required training, chemical inventory, equipment, and written programs must be available upon request.**

Definitions:

Chemical: any element, chemical compound or mixture of elements and/or compounds.

Combustible liquid: means any liquid having a flash point at or above 140° F (37.8°C), but below 200° F (93.3°C), except any mixture having components with flash points of 200° F (93.3°C), or higher, the total volume of which make up 99% or more of the total volume of the mixture.

Compressed gas: any compound that exhibits:

(i) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F.

(ii) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F regardless of the pressure at 70°F.

(iii) A liquid having a vapor pressure exceeding 40 psi at 100°F.

Container: any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Explosive: a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Exposure or exposed: an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g. accidental or possible) exposure. Subjected in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption.)

Flammable: a chemical that falls into one of the following categories:

> (i) "Aerosol, flammable" means an aerosol that yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;
>
> (ii) "Gas, flammable" means: (A) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or (B) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;
>
> (iii) "Liquid, flammable" means any liquid having a flash point below 100 deg. F., except any mixture having components with flash points of 100 deg. F. or higher, the total of which make up 99 percent or more of the total volume of the mixture.
>
> (iv) "Solid, flammable" means a solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flash point: the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.

Hazardous chemical: any chemical imposing a physical hazard or a health hazard.

Bloodborne Pathogens

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This program applies to all work operations where City of Murray employees may be exposed to bloodborne pathogens under normal conditions or during emergency situations.

Purpose:

The purpose of this program is to inform employees that it is the intent of the City of Murray to comply with KOSH standards to create a working environment as safe and sanitary as possible for the employees who are exposed to blood or other potentially infectious materials and to provide training, engineering, and work control practices to minimize employee exposure.

Policy:

Under this policy, employees will be informed of the contents of the Bloodborne Pathogens Standard. Employees will also be informed of the hazards associated with task and procedures in which occupational exposure occurs.

Exposure Determination

OSHA requires employers to perform an exposure determination concerning which employees may incur occupational exposure to blood or other potentially infectious materials. The exposure determination is made without regard to the use of personal protective equipment (i.e. employees are considered to be exposed even if they wear personal protective equipment.) This exposure determination is required to list all job classifications in which all employees may be expected to incur such occupational exposure, regardless of frequency.

The following job classifications are in this category:

- Police Officer Recruit
- Police Officer
- Detective
- Telecommunications Personnel
- Fire Personnel
- Sanitation Workers
- Transfer Station Workers
- Central Garage

- Waste Water & Water Treatment Plant Workers
- Water Distribution Workers
- Gas Construction Workers
- Office Personnel
- Employee FA/CPR Certified

In addition, if the employer had job classifications in which some employees may have occupational exposure, then a listing of those classifications is required. Since not all the employees in these categories would be expected to incur exposure to blood or other potentially infectious materials, tasks or procedures that could cause these employees to have occupational exposure are also required to be listed in order to clearly understand which employees in these categories are considered to have occupational exposure.

Other Potentially Infectious Materials

1. The following human body fluids: urine, feces, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, saliva in dental procedures, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.
2. Any unfixed tissue or organ (other than intact skin) from a human (living or deceased).
3. HIV – containing cell or tissue cultures, organ cultures, and HIV or HBV – containing culture medium or other solutions and blood, organs other tissue from experimental animals infected with HIV or HBV.
4. Source Individual – any individual, living or deceased, whose blood or other potentially infectious materials may be a source of occupational exposure.

Personal Protection

1. The City of Murray shall provide, at no cost to the employee, a bloodborne pathogens kit which includes, but not limited to:

    - One 3oz. packet of absorbent powder
    - Protective gloves
    - Protective face shield
    - Shoe Covers
    - Apron
    - Isolation Mask
    - Two scoops / scrapers
    - Absorbent towel
    - Antiseptic towelettes
    - Disposable red biohazard bags with twist ties
    - Spray disinfectant kit

2. Personal protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or to reach the employee's work clothing, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used.
3. The City of Murray shall provide hand washing facilities which are readily accessible to employees.
4. When provisions of hand washing facilities is not feasible, the City of Murray shall provide either an appropriate antiseptic hand cleanser in conjunction with cloth/paper towels or antiseptic towelettes.
5. Employees shall wash their hands and any other skin with soap and water or flush mucous membranes with water immediately or as soon as feasible following contact with such body areas with blood or other potentially infectious materials, after removal of gloves or other personal protective equipment. Continually rinse affected area for 15 minutes.
6. The City of Murray shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powder less gloves or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.
7. Goggles, glasses, and/or chin length face shields shall be worn whenever splashes, spray, splatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can reasonably be anticipated.
8. All garments which are penetrated by blood or other potentially infectious materials, shall be removed immediately or as soon as feasible. All personal protective equipment shall be removed prior to leaving the work area. Contaminated PPE shall be disposed of in labeled Biohazard Waste Containers. In the event that personal clothing is contaminated, the person shall remove the contaminated clothing as soon as possible and without spreading the contamination. Biohazard containers shall be disposed of by the designated service provider.
9. This exposure plan shall be considered a standard operating procedure and shall be used as a guideline to establish safe operating controls.

Cleaning/ Decontamination

Decontamination will be done using a bleach/water mixture or decontamination spray. Cover entire area and let set for 20 minutes. Post signs or barricade to ensure the protection of others.

All contaminated work surfaces will be decontaminated after completion of activities and immediately or as soon as feasible after any spill of blood of other potentially infectious materials.

All bins, pails, cans, and similar receptacles intended for reuse shall be decontaminated as soon as feasible upon visible contamination.

Any broken glassware which may be contaminated will not be picked up directly with the hands. Dust pans, broom, shovel, etc. shall be utilized to prevent direct contact to hands.

Exposure Incident

In the event of an exposure to bloodborne pathogens, immediately:

1. Provide first aid
2. Secure area to prevent further contamination
3. Remove contaminated clothing
4. Wash the exposed area well with soap and water, or waterless hand cleanser, and apply an antiseptic
5. If the eyes, nose, or mouth are involved, flush them well with large amounts of water
6. Report the incident to your supervisor and/or the HR Manager.

Assess the Exposure/Blood or Body Fluid:

1. A significant bloodborne exposure is considered a combination of one or more of the types of body fluids and one or more of the injuries listed below:
    a. Body fluids:
        - Blood, serum, plasma, and all fluids visibly contaminated with blood
        - Pleural, amniotic, pericardial, peritoneal, synovial, and cerebrospinal fluids
        - Uterine/vaginal secretions or semen
        - Saliva ,sweat, tears, urine, feces, vomitus(not considered potentially hazardous unless they contain blood.)
    b. Injuries:
        - Percutaneous (needle stick, laceration, abrasion, bites, etc.)
        - Mucous membrane (e.g. eyes, nose, mouth)
        - Skin (e.g. cut, chapped or abraded skin). The larger the area of skin exposed and the longer the time of contact, the more important it is to verify that all the relevant skin area in intact.

Assess the Exposure/Air or Droplet:

1. A significant airborne exposure is considered a combination of a subject (source) exhibiting signs/symptoms of suspected airborne illness and an activity that would place the worker at risk of droplet or airborne exposure:

a. Source: Any aerosolized exhalations, sputum, or saliva, either by source coughing, spitting, breathing; any pulmonary (lung) secretions either brought forth by patient (source) or by manual suctioning and exposed individual has not worn barrier protection.

A report will be taken and a confidential referral and follow-up with a doctor for an examination from the exposure will be provided, if given permission from the employee. The employee must fill out the "Infectious Disease Exposure Report" form (Appendix B).

Compliance Methods

Universal precautions will be observed in order to prevent contact with blood or other potentially infectious materials. All blood or other potentially infectious material will be considered infectious. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Work Area Restrictions

Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, or on countertops or bench tops where blood or potentially infectious materials are present.

All procedures involving blood or potentially infectious materials, shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

Hepatitis B Vaccine

Hepatitis B vaccination shall be made available, at no cost to the employee. **Employees will have the right to decline or accept the vaccination**. If the employee initially declines hepatitis B vaccination but at a later date, while still employed with the City of Murray, decides to accept the vaccination, the City of Murray shall make available the vaccination at that time.

****Employees who decline to accept the Hepatitis B vaccination will sign an informed refusal document.*

If a routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such booster dose(s) shall be made available to the designated occupational exposure groups.

Post-Exposure Evaluation & Follow-Up Guidelines

When an employee has an exposure to blood or mucous membrane and/or body fluids, appropriate post exposure follow-up will be initiated.

At the time of the incident, the employee must complete the “Infectious Disease Exposure Report” (Appendix B) that describes the incident in detail. The following steps will be initiated for appropriate follow-up:

1. Transport: A significantly exposed worker should be transported to a designated facility for medical evaluation, counseling and testing within 2 hours after the exposure. The worker and source patient should be transported to the same medical facility.
2. Post exposure Testing for Blood and Body Fluid Exposures: Counseling should be provided to and consent shall be obtained from both source of the exposure and exposed worker. (29 CFR 1910.1030 (f)(3)).
    a. If the source individual refuses testing or he/she cannot be identified, the unvaccinated employee should receive the Hepatitis B vaccine series.
    b. If the source individual is a member of an identified high risk group and is known to have a bloodborne pathogen, or is seronegative on testing, or refuses the serological testing, or if the source patient is unknown, the following employee follow-up will be implemented if the employee so desires:

        1) Notify the Infection Control Coordinator (HR Manager) of the desire for further testing.
        2) After a consent form is signed requesting further testing, the employee should be offered serological testing at the following intervals through the City’s physician, if possible:
        3) HIV/HBV immediately after exposure for base line status (This should have already been performed if the employee is requesting further testing).
        4) HIV/HBV at the time after the date of the exposure and up to six months after the exposure if any symptoms arise that could be an indication of the illnesses.
        5) HIV between six and nine months after exposure.

3. Post exposure Testing for Airborne or Droplet Exposures: For airborne exposure, screening is recommended for communicable disease once counseling is provided and consent is received, for the source of the exposure and the worker. If a TB exposure is suspected, a PPD test following the exposure should be performed. Do not administer a PPD test if worker has been tested within the previous 12 weeks and/or workers reports a history of positive skin test reaction.
4. Discharge: The receiving facility should provide the exposed worker with a complete discharge summary and a completed Infectious Disease Exposure Report Form that includes a description of all diagnostic tests performed on the worker.
5. Filing the Exposure Report: The Infectious Disease Exposure Reporting Form should be signed by both the exposed worker and the agency's Designated Infection Control Officer/Nurse. A copy of the form should be provided to the exposed worker with the original filed into the worker's infection control (medical) records in Human Resources.
6. Post exposure Medical Follow-Up: The worker is responsible for following post exposure monitoring and periodic testing as directed by the medical provider.

a. If the patient (or victim) is tested negative for HIV/HBV infection, no further testing of the patient and employee is indicated unless the patient is a high risk for bloodborne infections.
b. If the individual is found to be positive for Hepatitis B, the employee who has not previously been given the vaccine should receive the vaccine series. If the source individual is tested positive for Hepatitis B infection and the employee has previously received the vaccine, the exposed employee should be tested for the antibody to Hepatitis B surface antigen (anti-HBS), and may be given one dose of vaccine and one dose of HBIG if the antibody level in the worker's blood sample is inadequate. This will be done through the City's physician, if possible.
c. Follow-up testing to detect seroconversion will be performed at week six, week twelve and week twenty-six after the exposure. Testing one year after the exposure is optional.

7. It is the attending physician's responsibility to report the test results to the patient. The Infection Control Coordinator (HR Manager) will communicate the test results to the employee. Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infection status of the source individual.

***Any other related situations not mentioned above will be dealt with on a case-by-case basis.

Documents / Information Provided to Healthcare Professional

1. A copy of the Blood Borne Pathogens Standard
2. A description of the exposed employee's duties as they relate to the exposure incident
3. Documentation of the route(s) of exposure and circumstances under which exposure occurred
4. Results of the source individual's blood testing, if available
5. All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain

Training

Training for all persons with occupational exposure will be conducted by a qualified person in the City or Department. The training will be provided prior to initial assignment to tasks where occupational exposure may occur. Training for persons with occupational exposure will be provided at no cost, during work time, be appropriate in content and vocabulary to educational level, literacy, and language of employees, and include the following information and explanation of:

- The OSHA standard for Bloodborne Pathogens
- Epidemiology and symptoms of Bloodborne diseases
- Modes of transmission of Bloodborne pathogens
- Procedures which might cause exposure to blood or other potentially infectious materials at this facility

- Engineering controls, work practices, and personal protective equipment which will be used at this facility to prevent or reduce exposure to blood or other potentially infectious materials
- Types, proper use, location, removal, handling, decontamination and disposal of personal protective equipment.
- Basis for selection of personal protective equipment.
- Hepatitis B vaccine, including information on its effectiveness, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge.
- Appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials.
- Exposure procedures, reporting methods, medical follow up that is available.
- Post-exposure evaluation and follow up.
- Signs and labels used at this facility

Definitions:

Bloodborne Pathogens– pathogenic microorganism that is present in human blood that can cause disease in humans. The pathogens include, but are not limited to hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated – the presence or reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated Sharps – any contaminated object that can penetrate the skin including, but not limited to: syringes, scalpels, broken glass, broken capillary tubes, and exposed ends of dental wires.

Exposure Incident – a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potential infectious materials that results from the performance of an employee's duties.

Occupational Exposure – reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

Universal Precautions– an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Respiratory and SCBA Safety

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

The OSHA General Industry standard for respiratory protection 29 CFR 1910.134 requires that a respiratory protection program be established by an employer. The following procedures are based on established guidelines by the Occupational Safety and Health Administration (OSHA), National Institute for Occupational Safety and Health (NIOSH) and American National Standards Institute, Inc. (ANSI)

Policy Statement:

It is the policy of the City of Murray to provide its employees with a safe and healthful working environment. This is accomplished as far as feasible with the accepted engineering controls and administrative controls. Where these methods are not feasible, respiratory protection is provided at no cost to the employee to reduce employee exposure to harmful airborne particulates and/or gases and vapor concentrations which are predictably non-injurious to most individuals according to the standards established by regulatory and/or professional organizations.

The City of Murray has made a commitment to establish and maintain a respiratory protection program consistent with the goal of protecting our employees. It is therefore critical that all employees, when using respirators in the workplace, or administering the respiratory protection program, will adhere to the letter and intent of this written standard operating procedure.

Guidelines:

1. The guidelines in this program are designed to help reduce employee exposure against occupational dusts, fumes, mists, radionuclides, gases and vapors.
2. The primary objective is to prevent excessive exposure to air contaminants.
3. Where feasible, exposures to contaminants will be eliminated by engineering control (example: general and local ventilation, enclosure or isolation, and substitution of a less hazardous process or material.)
4. When effective engineering controls are not feasible, use of personal protective equipment may be required to achieve this goal.

Responsibilities:

1. Management:

   It is the responsibility of the Department Director and Safety Consultant to determine what specific personal protective equipment is required. It is the department directors' responsibility to ensure that the proper personal protective equipment is worn by employees. Management must also provide the proper equipment to meet the needs of each specific application. Employees must be provided with adequate training and instructions on all equipment.

2. Supervisors:

   Supervisors are responsible for insuring that all personnel under their control are completely knowledgeable of the PPE requirements for the areas in which they work. They are also responsible for insuring compliance with all aspects of this program, including personal protective equipment inspection and maintenance.

3. Employees:

   It is the responsibility of the employees to be aware of the personal protective equipment requirements for their work areas. Employees are also responsible for wearing the appropriate equipment according to proper instructions and for maintaining the equipment in a clean and operable condition.

Work Area Monitoring

To assure the adequacy of a respirator protection program, monitoring will be conducted on a periodic basis or more often as necessary to provide for a continuing healthful environment to employees. Personal sampling equipment may be used in accordance with accepted industrial hygiene standards to sample each work area. Results of these samples will pinpoint areas where respiratory protection is required.

Employee Medical Monitoring

The City Physician will initially, and periodically thereafter, make an individual determination on each employee wearing a respirator as part of his or her duties. The physician will make a determination as to whether that employee can wear the respirator without undue physical or psychological risk.

The City of Murray does not allow any employee to wear a respirator if the company physician thinks the employee might suffer undue physical or psychological harm due to wearing the respirator.

1. Pre-employment physical examinations are conducted on all employees to assure that they are in adequate healthy condition (physically able to perform their work and can use the respiratory equipment as required).

2. Annual Pulmonary Function Tests (PFT) and Fit Tests will be performed on employees who will potentially use a respirator.

Respirator Selection

Respirators are selected and approved by the Department Director and Safety Consultant. The selection is based upon the physical and chemical properties of air contaminants and the concentration levels likely to be encountered by the employee. The City of Murray will make a respirator available to each employee who is placed in the respiratory protection program. Employees must pass all requirements of the medical surveillance, training and fit-testing to be assigned a respirator. Replacement respirators/pre-filters will be made available as required. Employees, who wish to wear respirators on a voluntary basis, will be evaluated individually, but will be required to comply with this written respiratory protection program as if they were required to wear a respirator.

Only those respirators jointly approved by the National Institutes for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA) are purchased by the City of Murray.

Employees are not allowed to purchase their own respirators and use them in any area controlled by the City of Murray.

Employee Training

Each employee assigned to an area requiring the use of respirators must be instructed by his supervisor to their responsibilities in the respiratory program. They will also be instructed in need, use, limitations, and care of their colleagues.

Employee Fit-Testing

Employees required to wear a respirator must be fitted properly and tested for a face seal prior to the use of a respirator in a contaminated area. Manufacturers provide fitting instructions and use limitations on the product packaging. No employee is allowed to wear a respirator in a work situation until he or she has demonstrated that an acceptable fit can be obtained.

Qualitative fit-testing is acceptable for most hazards in the work place.

1. Fit-testing must be repeated if the employee’s weight changes more than 30 pounds and/or change of physical characteristics of the face occurs.

2. Facial hair that comes in contact with the respirator face seal is not acceptable. (No attempt is made to fit a respirator on any employee who has facial hair which comes between the sealing periphery of the face piece and the face, or if the facial hair interferes with normal functioning of inhalation valve or the exhalation valves of the respirator.)
3. Half Face Masks Only: Goggles face shield, or a welder's helmet may be worn with a respirator, provided that the device does not interfere with the normal positioning of the respirator on the face.
4. Corrective lenses (or safety glasses) may be worn with a respirator, provided that the device does not interfere with the normal positioning of the respirator on the face.

Respirator Inspection and Maintenance

The following points should be considered for respirator inspection and maintenance:

1. The wearer of the respirator will inspect and document it daily whenever it is in use.
2. Inspect and document monthly when respirators are not in use.
3. The Department Director and department supervisors will periodically spot check respirators for fit, usage, and condition. Documentation of these checks will be maintained on file in the department with the respirator.
4. Respirators not discarded after one shift use, will be cleaned on a daily usage basis, according to the manufacturer's instructions, by the assigned employee or other person designated by area supervisor.
5. Respirators not discarded after one shift will be stored in a suitable container away from areas of contamination.
6. Whenever feasible, respirators not discarded after one shift use, will be marked or stored in such a manner to assure that they are worn only by the assigned employee. If use by more than one employee is required, the respirator will be cleaned between uses.
7. It is the responsibility of each respirator wearer to wear his or her respirator in the manner in which trained.
8. Respirators must be worn in accordance with manufacturer's approval from NIOSH and MSHA. Respirators cannot be modified or partially worn, regardless, if the wearer is required to or voluntarily selected to comply with the written respirator protection program. If an employee volunteers to wear a respirator, it must be worn in accordance with the required written respirator program.

Emergency Respirator Equipment

A self contained breathing apparatus (SCBA) may be required in specific areas for emergency use. This equipment will be used only by trained personnel when it is necessary to enter hazardous atmospheres. The following points should be considered:

1. All potential users must be fully trained in the use of this equipment.

2. When the equipment is used, it must be tested in an **uncontaminated atmosphere** prior to entering the hazardous area.
3. An employee will not work in this apparatus in a hazardous atmosphere on an individual basis. At least one additional employee suitably equipped with a similar breathing apparatus must be in contact with the first employee and must be able to render assistance if necessary.
4. This equipment must be inspected monthly by the department supervisor or their designee. Inspection and maintenance information will be recorded and maintained within the department.

Fit Test Protocols

1. Employees shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a comfortable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning the respirator. This instruction may not constitute the subject's formal training on respirator use, as it is only a review.
3. Employee shall be informed that he/she is being asked to select the respirator which provides the most comfortable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each face piece up to the face and eliminate those which obviously do not give a comfortable fit.
5. The more comfortable face pieces are noted: the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in item six below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
    - Positioning of the mask on the nose
    - Room for eye protection
    - Room to talk
    - Position of mask on face and cheeks
7. The following criteria shall be used to help determine the adequacy of the respirator fit:
    - Chin properly placed
    - Adequate strap tension; not overly tightened
    - Fit across nose bridge
    - Respirator of proper size to span distance from nose to chin
    - Tendency of respirator to slip

- Self-observation in mirror to evaluate fit and respirator position

8. Employee shall conduct the negative and positive fit checks as described in Appendix B or ANSI Z88.2-1980.
9. Before conducting the negative or positive fit test, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the fit check tests.
10. **Employee must be clean shaven.** Employee shall not conduct the test if there is any hair growth between the skin and the face piece sealing surface, such as stubble beard growth, beard, or long sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.
11. If a test subject exhibits difficulty in breathing during the tests, she/he shall be referred to a physician to determine whether the test subject can wear a respirator which performing her/his duties
12. If at any time within the first two weeks of use the respirator becomes uncomfortable, the test subject shall be given the opportunity to select a different face piece and is to be retested.
13. The employer shall maintain a record of the fit test administered to an employee. The record shall contain at least the following information:
    - Name of employee
    - Type of respirator
    - Brand and size of respirator
    - Date of test
    - Where QNFT is used: the fit factor, strip chart recording or other recording of the results of the test.

    The record shall be maintained until the next fit test is administered

14. **Exercise regimen.** Prior to the commencement of the fit test, the test subjects shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 10 minutes before the start of the fit test.
15. **Test Exercises.** The test subject shall perform exercises, in the test environment, in the manner described below:
    - Normal breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
    - Deep Breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as to not hyperventilate
    - Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

- Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (when looking at the ceiling).

Hearing Conservation Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

Conservation of hearing is achieved through preventative measures. To reduce occupational hearing loss, all employees, who work in potentially noisy areas, are provided hearing protection, training and may potentially have annual hearing tests. OSHA hearing conservation standard is covered in 29 CFR 1910.95. Engineering controls are applied to reduce noise from equipment and operations.

Responsibilities:

Management:

- Use engineering and administrative controls to limit employee exposure
- Provide adequate hearing protection for employees
- Post signs and warnings for all high noise areas (anywhere above 90dB)
- Conduct noise surveys annually or when new equipment is added
- Conduct annual hearing tests for all employees in an area that is under the hearing conservation plan.
- Conduct hearing conservation training for all new employees
- Conduct annual hearing conservation training for all employees

Employees:

- Use approved hearing protection provided by the City in designated high noise areas.
- Request new hearing protection when needed.
- Exercise proper care of hearing protection.

Training

At time of hire and annually thereafter, all affected employees must attend hearing conservation training. The initial training is conducted as part of the New Hire Orientation Program by the Safety Manager and consists of:

1. Rules and procedures
2. Where hearing protection is required
3. How to use and care for hearing protectors
4. How noise affects hearing and hearing loss

Engineering Controls

After it is determined that noise exposure above 85 dB(A) are present, engineering controls should be evaluated and implemented to reduce the noise exposure before administrative controls are initiated. Some examples of engineering controls include:

1. Noise reducing baffles
2. Compartmentalization
3. Installing noise reducing gears
4. Installing rubber pads under machinery

When new equipment or machinery is evaluated for purchase, the Safety Manager should be contacted to conduct an evaluation of the equipment. One criteria of the evaluation should include the amount of noise the equipment will produce and how it will affect the overall noise exposure.

Administrative Controls

After engineering controls are evaluated for effectiveness or feasibility, administrative controls should be considered to reduce noise exposure. Administrative controls include restricting exposure time or using personal protective equipment (PPE).

Personal Protective Equipment, such as ear plugs or muffs, may be used to reduce the amount of noise exposure. Each plug or muff has a noise reduction rating (NRR) as evaluated by ANSI Standards (S3.19 - 1974 or Z24.22 - 1957). For example, if a work area has an ambient noise exposure of 96 dB(A), the hearing protectors should be rated 6 NR or better to be effective.

According to OSHA Regulations, *each location with noise exposures of 85 to 89 dB(A) will provide hearing protection for the Employee's optional use*. **Noise exposures at 90 dB(A) or above require the mandatory use of hearing protection.** Further, OSHA requires that a variety of hearing protectors be available for Employees to choose (both a variety of plug and muff type hearing protectors).

Types of Hearing Protectors

Hearing protection devices are the first line of defense against noise in environments where engineering controls have not reduced employee exposure to safe levels. Hearing protection can prevent significant hearing loss, but only if they are used properly.

Earplugs: inserted into the ear canal to provide a seal against canal walls.

Earmuffs: enclose the entire external ear inside rigid cups. The inside of the muff cup is lined with acoustic foam and the perimeter of the cup is fitted with a cushion that seals against the head around the ear by the force of the headband.

Use of Hearing Protection

Management, Supervision and Employees shall properly wear the prescribed hearing protectors while working in or traveling through any section of a location that is designated a high noise area. (Excluding: offices, break rooms, and rest facilities). The following rules will be enforced:

- Personal stereos, such as Walkmans, iPods, mp3 players, etc., will not be permitted in any operating area of the City of Murray's property.
- Hearing protectors, at least two types of plugs and one type of muffs, will be provided and maintained by the City of Murray.
- Hearing protectors and replacements will be provided free of charge
- Hearing protectors will be properly worn at all times in areas where needed.

Custom-fitted earplugs and earmuffs should be washed periodically and stored in a clean area, and foam inserts should be discarded after each use. It is important to wash hands before handling pre-formed earplugs and foam inserts to prevent contaminants from being placed in the ear which may increase your risk of developing infections.

Areas where hearing protection is needed:

Water Plant-Generator Press

Waste Water Plant-Filter Press

Fire Department-Bay Area (when testing power equipment)

Areas where operating equipment exceeds the 90 dB(A) OSHA exposure limit

Anywhere high noise signs are posted

***All employees in the areas listed above are required to use the proper hearing protection issued by management**

Emergency Action Plans

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The purpose of an Emergency Action Plan is to protect the employees from serious injury, property loss, or loss of life in the event of a major disaster. Any of the following constitutes a major disaster:

- Fire
- Tornado
- Earthquake
- Bomb threat
- Hazardous chemical spill or release

In the event of any disaster listed above, this Emergency Action Plan describes the responsibilities and actions to be taken to protect all employees.

General Procedures:

In the event of a disaster, the warning may come from any of the following sources:

- Commercial radio and/or television
- Civil defense radio
- In-house automatic sprinkler system
- In-house alarm
- Messenger
- Police

Notification of Emergency Warning

Person receiving notification of a possible disaster, or an in-house emergency should notify their immediate supervisor. The type of disaster or emergency situation should then be conveyed to all employees with the use of the emergency alarm system or similar type warning device. In the event of the absence of such a device a verbal warning will be adequate.

Responsibility

In any emergency situation, the ranking member of management present shall have final authority to coordinate procedures, and amend, modify or supersede any provisions of this plan in order to ensure employee safety.

Location of all Emergency Control Facilities

Emergency situations call for emergency actions and supplies. Location, identification, and accessibility of such locations should be made prior to an actual emergency. (See attached maps)

First Aid Services

On all jobsites, there must be a person who has been trained in first aid and CPR. If the need for an outside service exists, they will be the care providers during the emergency inside and outside of the building.

Utility Controls

All maintenance personnel will know the location and operation of main controls for shutting off the gas, electricity, and water leading into a particular building. If at all possible, ensure that an alternate person is assigned the duty of shutting off critical equipment in the event the maintenance personnel cannot perform this task. Your personal safety is the City's first concern. This is only an additional precautionary measure to prevent any additional property loss.

Emergency Alarms

Alarms

When an emergency alarm is given, all employees must evacuate the area and meet in the designated area. Supervisors shall have 100% accountability after evacuation is complete.

Action

When the alarm is activated, at least one (1) member of management should report to the evacuation site. The other members of management should take necessary action to ensure the safety of all employees and notify proper agencies for any assistance that is needed.

Phone Listings

A listing of all emergency telephone numbers is located in this program and on all jobsites. A member of management or the Safety Manager should be notified as soon as possible.

Evacuation Sites

Various maps of the area plants have been provided for you (if applicable). If your location is remote then the supervisor shall be responsible for coordinating, in advance, an assembly point out of harm's way.

Procedure for Emergency Shutdown of Operations

An emergency shutdown will only be ordered by the ranking member on the site. No employee shall risk any type of injury to accomplish this task. However if time permits assigned personnel shall perform the following tasks:

1. All aisle and passageways shall be cleared.

2. Shut off gas lines and electrical supply as instructed by the ranking member on site.

Various Situations:

1. Tornado (Intermittent Alarm):

In the event of a tornado or severe weather warning, the following procedure shall be put into effect by the supervisor in charge:

- Listen for latest advisories on the radio. (1340am WNBS)
- Post outlooks for outside observation.
- If necessary, initiate emergency shutdown procedures.
- Move personnel into designated safe assembly areas within the building.
- Open any door or window where possible to equalize pressure.
- After the tornado passes, remain calm and check for injuries.

2. Earthquake:

An earthquake will usually occur without any type of warning. Due to the suddenness, all personnel should attempt to get into a doorway passage or under a table or desk. Any place where an employee feels safety is warranted. **NO ONE SHALL LEAVE THE BUILDING.** After the earthquake has stopped, the following procedure shall be initiated:

- All employees shall help restore calm to fellow employees.
- Persons trained in CPR and 1st aid shall check for injuries and provide care as needed.
- Designated personnel shall check for fires and shut off gas, electricity, and water at main controls.
- The building should be inspected for major structural damage. If such damage is apparent then an evacuation shall be initiated.
- A designated person shall notify proper utility companies or other services as needed.

3. Bomb Threat:

In the event of a bomb threat, which will normally be received over the telephone, the following procedure shall be followed:

A. The person receiving the bomb threat shall write down as much information as possible concerning the call. The written information shall then be forwarded to the ranking person of management.

B. The member of management notified shall determine the appropriate procedures to be taken using the following list:

    1. Commence immediate site wide evacuation to the outside predetermined location.
    2. **Contact 911**
    3. Do not permit re-entry until the building has been searched and declared safe by the bomb disposal unit.

C. If a bomb threat is received by any means other than telephone, the person receiving the threat shall report immediately to their first line supervisor or the ranking member of management.

Fire Prevention and Workplace Hazards

It is the responsibility of all employees to prevent any type of fire in the building or on the jobsite. Listed below is a list of general items to take into consideration to accomplish this objective:

1. Extinguish and destroy all cigarettes in their proper places.
2. Do not have open flames around any type of chemicals, paints, solvents, or flammables.
3. Make sure all hand held torches are extinguished when not in use.
4. Do not put any type of hot object in trashcans; i.e. cigarette butts.

Listing of some workplace hazards:

1. Flammable Substances:
    - Paint and Paint solvents
    - Mineral Spirits
    - Alcohol
    - Propane tanks for fork trucks
    - Oxygen and Acetylene cylinders
    - Hydraulic fluid
    - Grease

2. Welding Operations:
    - All welding operations shall be done in a designated area and a proper extinguishing media shall be readily available.

Control of Workplace Hazards

1. All flammable and combustible material shall be stored in a designated area or flammable storage area.
2. Good housekeeping will be the responsibility of ALL employees.

    - Waste materials are to be discarded in their proper places.
    - Workers are to pick up and sweep any debris on or around their area on a day to day basis.

- All aisles and exits shall be kept clear.
- All areas to fire extinguishers shall be kept clear for access.
- All employees will know evacuation routes and exits, to proceed to when instructed if an emergency situation develops.
- All employees shall be instructed on the company Emergency Action Plan.
- Emergency telephone numbers shall be posted at all locations where work is to be performed.
- Supervisors shall be responsible for their employees to handle, store, and maintain hazardous materials properly.

Maintenance of Fire Equipment and Systems

An independent company will conduct annual checks of all fire extinguishing equipment and systems. The Safety Department will be in charge to ensure that this happens.

Emergency Telephone Listings

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

FIRE	911
POLICE	911
AMBULANCE	911
KENTUCKY STATE POLICE	(800) 222-5555
POISON CONTROL	(800) 722-5725
KY 811	(502) 266-5677
CITY SAFETY CONSULTANTS	
Jason Reed	Cell: (270) 293-5215
	Office: (270) 753-4704
Travis Brown	(270) 227-8414
HUMAN RESOURCES	
Cathy Morris	Cell: (270) 293-2509
	Office: (270) 762-0350 Ext: 1103

Portable Fire Extinguishers

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This Portable Fire Extinguisher Program applies to all city employees during normal conditions and emergency situations.

Policy:

This policy is under the direct control of the Department Directors, with the supervisors of each department as his personal representative, under the supervision of the Safety Department. The Safety Department is to provide adequate training for all affected and authorized employees.

Purpose:

The purpose of this training program is to educate and train employees on the proper use of fire extinguishers. This program shall educate employees on the different classes of fires and the different classes of fire extinguishers. This program shall also educate the employees in the proper use of fire extinguishers.

Reference:

Kentucky Occupational Safety and Health Administration (KOSHA), Code of Federal Regulations 1910.157 Portable Fire Extinguishers. Occupational Safety & Health Administration (OSHA), Safety and Health Regulations for Construction 1926.24

Hazards:

Fire and explosion hazards can occur in almost any work setting. The following are potential hazards:

- Smoking
- Hot work areas
- Improper storage of flammable liquids and gases
- Improper maintenance
- Housekeeping issues

Classes of Fires:

Class A- Solid combustible materials that include wood, paper, plastic, cloth, or trash.

Class B- Combustible gases, combustible liquids, gasoline, oil, grease, and acetone.

Class C- Any electrical or energized electrical equipment.

Class D- The City of Murray does not have metals such as potassium, sodium, aluminum, and magnesium that could cause a Class D fire. However, note these in case this changes in the future.

Classes of fire extinguishers:

Class A- This extinguisher covers solid combustible materials in a Class A fire.

Class B- This extinguisher covers all liquids in a Class B fire.

Class C- This extinguisher covers all electrical covered in a Class C fire.

Class D- This extinguisher covers all flammable metals covered in class D.

COMBINATION FIRE EXTINGUISHERS: These fire extinguishers are a combination of the different classes of fire extinguishers. The largest percentage of the combination fire extinguishers are the Class A, B, C fire extinguishers. A combination Class A, B, C fire extinguisher can be used on either a Class A fire, Class B fire, or Class C fire.

***NOTE:* All fire extinguishers are marked as to indicate its class of fire extinguisher. The class of fire must be determined so that the right class of fire extinguisher will be used to extinguish the fire.

APPLICATION:

Steps to using a Fire Extinguisher:

1. Identify the class of fire.
2. Select the appropriate class of fire extinguisher.
3. Pull retaining pin from the handle of the extinguisher.
4. Hold the hose in the right hand and operate the extinguisher handle with the left hand. NOTE: Always remove the hose from the bracket on the side of the fire extinguishers tank before depressing the handle.
5. Get as close to the fire as the heat will allow. A general rule is to start about six to eight feet away from the fire.
6. **Point the hose at the base of the fire and depress the handle**. Always direct the extinguishing agent at the base of the fire.
7. Sweep the hose from side to side while attempting to extinguish the fire.

8. If after 8-10 seconds the fire is not extinguished, then leave the area immediately and call 911.

NOTE: IF A FIRE BREAKS OUT IN YOUR AREA NOTIFY EVERYONE AROUND YOU AND PULL THE FIRE ALARM. REMEMBER TO MAKE SURE YOU HAVE THE RIGHT FIRE EXTINGUISHER FOR FIGHTING THE FIRE. ALSO WHEN USING A FIRE EXTINGUISHER ALWAYS PULL THE PIN, POINT THE HOSE AT THE BASE OF THE FIRE, AND USE THE SWEEPING MOTION TO EXTINGUISH THE FIRE. IF THE FIRE IS NOT OUT IN 8-10 SECONDS LEAVE THE AREA.

General Requirements

1. Fire extinguishers shall be placed where they are easily accessible and ensure that they are clearly marked.
2. Fire extinguishers shall not be blocked, covered, or obstructed from accessibility.
3. Fire extinguishers should be inspected once a month to insure that they are properly charged and that they are in good working condition.
4. Fire extinguishers should have a maintenance inspection on an annual basis by a qualified person.
5. Dry chemical fire extinguishers shall be hydrostatic tested at the yearly intervals as indicated in the OSHA standard on NFPA.
6. The employer shall provide an adequate means of fire protection when portable fire extinguishers are removed from service for maintenance and recharging.

Location of Extinguishers

Extinguishers should be located in a readily accessible position for immediate use during a fire. They should be clearly visible along normal paths of travel and egress. Extinguisher classification markings will be located on the front of the shell above or below the extinguisher nameplate. Markings must be of a size and form to be legible from a distance of 3 feet.

Inspection and Maintenance

Fire extinguishers shall be visually inspected every month by the safety intern or designated person. During this inspection the Intern will check to make sure the extinguisher is fully charged, pin secured in place, validation of inspection tag, and that it is readily accessible.
A full service inspection shall be performed on all fire extinguishers ANNUALLY.

Common Fire Extinguisher Locations:

- Stairways
- Exits
- Main Doors
- Vehicles

Lockout/Tagout Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This program applies to all City of Murray employees working in or around machinery where there could be a potential hazardous energy source.

Purpose:

The purpose of this program is to ensure minimum procedures are utilized to eliminate the potential for exposure to dangerous energy. Potential energy can come in the form of hydraulic, electrical, pneumatic, and any other form of energy.

Policy:

The Lockout/Tagout Policy is under the direct control of the Department Directors, with the supervisors of each department as his personal representatives, under the supervision of the Safety Office.

Responsibilities

1) **Department Directors:**

City Administrator	Director of Finance
Director of Public Works	Chief of Police
Fire Chief	Director of Planning and Engineering

Each Department Director, with help from supervisors, is responsible for ensuring the success of the lockout/tagout policy in all departments and operations under their control.

2) **Supervisors:**

Accountant
Assistant Fire Chief
Assistant Superintendent of Field Operations
Cemetery Supervisor
GIS Supervisor
Human Resources Manager
Information Technology Manager
Maintenance Operations Supervisor

City Planner
Crew Chief (Gas)
Crew Chief (Solid Waste)
Crew Chief (Street)
Crew Chief (Water)
Customer Billing Team Leader
Customer Service Team Leader
Field Operations Superintendent
Field Operations Supervisor (Gas)
Field Operations Supervisor (Water)
Fire Captain
Fire Lieutenant
Gas Superintendent
Major/Assistant Police Chief
Office Manager
Plant Operations Superintendent
Police Captain
Police Sergeant
Project Manager
Solid Waste Superintendent
Storm Water/Drainage Supervisor
Street Superintendent
Street Supervisor
Transfer Station Supervisor
Wastewater Plant Chief Operator
Water Plant Chief Operator

Supervisors are responsible for ensuring that all personnel under their control are completely knowledgeable of the lockout/tagout requirements for the areas in which they work. They are also responsible for insuring compliance with all aspects of this program.

3) Authorized Employees:

It is the responsibility of the authorized lockout/tagout employee to follow all procedures required in this program. These employees are the only authorized and trained individuals to perform repairs or maintenance to equipment.

4) Other Employees:

Cooperate and participate with authorized employees, supervisors, and department/division heads in the training, re-training, if necessary, and implementation of this lockout/tagout policy.

5) Safety Department:

Human Resources Manager
Safety Manager
Safety Intern

It is the Safety Department's responsibility to coordinate with all affected employees, supervisors, and department directors training programs to reinforce the lockout/tagout procedures. Also to ensure that annual inspections and retraining are being performed and properly documented.

Types of Energy Covered by this Program:

Electrical:

Electrical energy can exist in two forms, supplied and stored. With supplied electrical power it is necessary to identify each power source. Examine electrical switches, motors, and

disconnect boxes. Always determine if the electrical system has a supplied back up power source.

Pneumatic:

Pneumatic energy is energy stored in the form of compressed air. A pneumatic system is usually identified by the components. The components may include, but are not limited to piping, filters, and hoses.

Hydraulic:

Hydraulic energy is stored in the form of compressed liquid. As with pneumatic systems, a hydraulic system is identified by the components used. The procedure and protocol involved with locking out a hydraulic system are similar to those used in a pneumatic.

Miscellaneous:

Other sources of energy that must be controlled with a lockout procedure include radiation, gravity and stored kinetic energy. Examples of these types of energy may include, but are not limited to flywheels, rotating tools, and water current.

Standard Lockout/Tagout Procedures:

The following procedure is a general guideline outlining the minimum requirements for authorized employees to follow when de-energizing equipment. (Each machine will vary in procedures; only use this as a guideline)

1. Employee Notification
    a) Notify all affected employees that lockout/tagout procedures are going to be utilized.
    b) Lock and tag ALL energy sources.
    c) Understand the magnitude, source and hazards of all energy sources.
    d) Identify and understand the method to control each type of hazardous energy.
2. Shutdown of Equipment
    a) Shut down equipment by following the normal shut down procedures.
    b) Do not use disconnect switches to shut down equipment.
    c) Make sure all power sources are off.
3. Equipment Isolation
    a) Position isolating devices so that the equipment is isolated from the hazardous energy sources.
4. Application of Lockout/Tagout Device
    a) Apply Lockout/Tagout devices to each energy isolating device to ensure it is in the safe or OFF position.
    b) Locks must always accompany the energy isolating device.
    c) Tags must be attached to the lock.
    d) Locks and tagout devices will be used in conjunction with hasps, valve covers, or breaker poles.

5. Release of Stored Energy
    a) All potentially hazardous energy must be relieved, disconnected, restrained or otherwise made safe.
6. Verification of Isolation
    a) Ensure no employees are present around equipment.
    b) Operate the normal operating controls to ensure the equipment is isolated.
    c) Only authorized employees can verify isolation and de-energization has been accomplished.
7. Equipment Restarting Procedures
    a) Inspect the work area to ensure that non-essential items have been removed.
    b) Ensure all affected equipment is intact.
    c) Ensure all guards are in normal operating positions.
    d) Notify affected employees that equipment will become operational.

*****NOTE: NEVER remove another employees lock or tag! The employee that placed the lock and tag on the machine must be the one to remove it! *****

The following locations have machine specific Lock-Out Tag-Out procedures:

Waste Water Treatment Plant: These procedures can be found in lockout/tagout booklets located in the Administrative Building, Sludge Handling Building, and Filter Press Building.

Water Treatment Plant: These procedures can be found in the lockout/tagout booklets located in the Administrative Building and Filter Building.

LOTO Procedure for Electrical Plug-Type Equipment

This procedure covers all electrical plug and cord equipment such as powered hand tools, powered bench tools, fans, and office equipment. Plug and cord equipment is not required to be locked out or tagged out only if under the exclusive control of the employee performing maintenance or repairs.

When working on, repairing, or adjusting the above equipment, the following procedures must be utilized to prevent accidental or sudden startup:

1. Unplug equipment from wall socket or in-line socket.
2. Attach “Do Not Operate” tag and/or plug box and lock to male end of the equipment cord.
3. Test equipment to ensure no stored energy.
4. Perform any maintenance or repairs to equipment.
5. Place guards or any guarding device that was removed.

6. Remove plug box and tag from power cord (always done by the person who put it there).
7. Inspect cord and plug for defects.

Lockout/Tagout for Multiple Employees

In the situation that more than one employee needs to be involved in the Lockout/Tagout process, each must also place his/her lock on the energy isolating device(s).

Management Removal of Lock

Only the employee that locks out the equipment may remove his/her lock. However, in the case that the employee leaves the plant/jobsite, only the supervisor or member of the safety office may remove the lock under these conditions:

1. Employee that placed lock on equipment is notified.
2. Tools or other items are clear from the work area.
3. Any guards have been replaced.
4. Employees are free from hazard.
5. All affected employees are notified of this change.

Shift or Personnel Changes

Authorized employees who are going off their shift or are being transferred off the project, in which their personal lockout/tagout devices have been utilized, cannot remove their personal lockout/tagout devices unless the new authorized employee has applied their personal lockout/tagout device. The new authorized employee must immediately utilize their personal lockout/tagout device following the originally authorized employee's personal lockout/tagout removal.

Training

All employees will be given annual awareness training to identify situations that require the implementation of Lockout/Tagout procedures. All authorized employees will be trained in the requirements of this program. This training will include, at a minimum, the following:

- Elements of the Lock Tag and Try Procedures as they pertain to their duties
- Requirements of the standard, 29 CFR1910.147, The Control of Hazardous Energy
- Review of the City of Murray Lockout/Tagout Program

Outside Contractors

Contractors working on company property and equipment must use this Lockout/Tagout procedure while servicing or maintaining equipment, machinery, or processes.

Definitions:

Affected Employee - is defined as an employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout/tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee – is defined as any trained and competent employee who locks or tags a piece of equipment to perform maintenance or servicing on that piece of equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or servicing on a machine or equipment which must be locked and/or a tagout system implemented. An authorized employee must be trained and competent.

Other Employee – Any employee, other than authorized or affected employees, whose work operations are or may be in an area where lockout/tagout procedures are being utilized.

Energized – Being connected to any energy source or containing residual or stored energy.

Energy Isolating Devices – A mechanical device that physically prevents the transmission or release of hazardous energy, including but not limited to the following: a manually operated electrical circuit breaker, a disconnect switch, a manually operated switch by which the conductors of a circuit can be disconnected from all underground supply conductors and, in addiction, no pole can be operated independently, a slide gate, a slip blind, a line valve, a block, and any similar device used to block or isolate energy. The term does not include push button, selector switch, and other control circuit type devices.

Energy Source – Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout/Tagout – The placement of a lock and/or tag, as outlined in the lockout and/or tagout procedures on an energy isolating device in such a manner as to render the equipment inoperable and the energy source intangible.

Lockout device – A device that utilizes a positive means such as a lock to hold an energy isolating device in the safe position and prevent the energizing of a machine or piece of equipment.

Multiple Lock Hasp – A device which is positioned in the same location of a lockout device, with the same results, however, multiple lockout/tagout devices can be applied.

Normal Production Operations – is defined as the utilization of a machine or equipment to perform its intended production function.

Servicing and/or Maintenance – Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or repairing machines or equipment. These activities include, but are not limited to, lubrication, cleaning or un-jamming of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment or release of energy.

Tagout device – A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device and the equipment being controlled, may not be operated until the tagout device is removed.

Lockout/Tagout Equipment:

Lockout Devices – (A) Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools. (B) Lockout devices shall be of the key-unlocking variety, and of the same make, model, and size throughout the Public Works & Utilities facilities.

Tagout Devices – (A) The tagout device shall include wording such as the following: DO NOT START, DO NOT OPERATE, DO NOT ENERGIZE, DO NOT OPEN, DO NOT CLOSE. (B) Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. (C) Tagout devices attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds.

Fall Protection Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The purpose of the fall protection program is to:

- ensure all work areas are free from uncontrolled fall hazards
- all employees are properly trained in fall prevention and protection
- fall prevention systems are inspected and monitored to ensure effectiveness

Policy:

The City of Murray will comply fully with the OSHA Fall Protection standard (CFR 1926, Subpart M, Fall Protection). The first priority is given to the elimination of fall hazards. If a fall hazard cannot be eliminated, effective fall protection will be planned, implemented, and monitored to control the risks of injury due to falling.

All employees exposed to potential falls from heights will be trained to minimize the exposures. Fall protection equipment will be provided and its use required by all employees. The supervisor on site will be responsible for implementation of a fall protection plan for their jobsite.

*****Fire Department only: rescue techniques should be utilized during training and during actual emergency situations.**

Hazard Identification

The supervisors on each jobsite will be responsible for identifying fall hazards on their jobsite. The supervisor will evaluate each situation or work procedure where employees may be exposed to a fall of 6 feet or more (4ft for general industry work). The supervisor will be responsible for developing a plan to eliminate the exposures, if possible, or to select the appropriate fall protection systems and/or equipment.

Hazard Control

Engineering Controls:

- Personal fall protection

- Guard rail systems
- Positioning devices
- Warning line systems
- Floor opening covers

Administrative Controls:

- Controlled access zones
- Employee training
- Audits
- Inspections
- Supervision
- Signs

Fall Protection

The following are examples of situations where fall protection would be needed. This listing is by no means complete, and there are many other situations where a fall of 6 feet or more is possible. It should be noted that ladders and scaffolding are not included in this list because they are covered by other OSHA standards and other requirements of the City safety program.

Wall Openings

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 meters) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 meter) above the walking/working surface must be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

Holes

Personal fall arrest systems, covers, or guardrail systems shall be erected around holes (including skylights) that are more than 6 feet (1.8 meters) above lower levels.

Leading Edges

Each employee who is constructing a leading edge 6 feet (1.8 meters) or more above lower levels shall be protected by guardrail systems, safety net systems, or personal fall arrest systems.

Excavations

Each employee at the edge of an excavation 6 feet (1.8 meters) or more deep shall be protected from falling by guardrail systems, fences, barricades, or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet (1.8 meters) or more above the excavation.

Formwork and Reinforcing Steel

For employees, while moving vertically and/or horizontally on the vertical face of rebar assemblies built in place; fall protection is not required when employees are moving. OSHA considers the multiple hand holds and foot holds on rebar assemblies as providing similar protection as that provided by a fixed ladder. Consequently, no fall protection is necessary while moving point to point for heights below 24 feet (7.3 meters). An employee must be provided with fall protection when climbing or otherwise moving at a height more than 24 feet (7.3 meters), the same as for fixed ladders.

Hoist Areas

Each employee in a hoist area shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system.

Ramps, Runways, and Other Walkways

Each employee using ramps, runways, and other walkways shall be protected from falling 6 feet (1.8 meters) or more by guardrail systems.

Low-slope Roofs

Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50 feet (15.24 meters) or less in width, the use of a safety monitoring system without a warning line system is permitted.

Steep Roofs

Each employee on a steep roof with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels shall be protected by guardrail systems with toe boards, safety net systems, or personal fall arrest systems.

Controlled Access Zones

A controlled access zone is a work area designated and clearly marked in which certain types of work (such as overhand bricklaying) may take place without the use of conventional fall protection systems, guardrail, personal arrest or safety net to protect the employees working in the zone.

Controlled access zones are used to keep out workers other than those authorized to enter work areas from which guardrails have been removed. Where there are no guardrails, masons are the only workers allowed in controlled access zones.

Controlled access zones, when created to limit entrance to areas where leading edge work and other operations are taking place, must be defined by a control line or by any other means that restrict access. Control lines shall consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

- Flagged or otherwise clearly marked at not more than 6-foot (1.8 meters) intervals with high-visibility material.
- Rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches (1 meter) from the walking/working surface and the highest point is not more than 45 inches (1.3 meters)--nor more than 50 inches (1.3 meters) when overhand bricklaying operations are being performed from the walking/working surface.
- Strong enough to sustain stress of not less than 200 pounds. Control lines shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge. Control lines also must be connected on each side to a guardrail system or wall. When control lines are used, they shall be erected not less than 6 feet (1.8 meters) nor more than 25 feet (7.6 meters) from the unprotected or leading edge, except when precast concrete members are being erected. In the latter case, the control line is to be erected not less than 6 feet (1.8 meters) or more than 60 feet (18 meters) or half the length of the member being erected, whichever is less, from the leading edge.

Controlled access zones when used to determine access to areas where overhand bricklaying and related work are taking place are to be defined by a control line erected not less than 10 feet (3 meters) nor more than 15 feet (4.6 meters) from the working edge. Additional control lines must be erected at each end to enclose the controlled access zone. Only employees engaged in overhand bricklaying or related work, are permitted in the controlled access zones.

On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones will be enlarged as necessary to enclose all points of access, material handling areas, and storage areas.

On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

Fall Protection Systems

When there is a potential fall of 6 feet or more, we will utilize one or more of the following means of providing protection:

Guardrail Systems

Guardrail systems must meet the following criteria:

- Top-rails and mid-rails of guardrail systems must be at least one-quarter inch (0.6 centimeters) nominal diameter or thickness to prevent cuts and lacerations.
- If wire rope is used for top-rails, it must be flagged at not more 6 feet intervals (1.8 meters) with high-visibility material.
- Steel and plastic banding cannot be used as top-rails or mid-rails.
- Manila, plastic, or synthetic rope used for top-rails or mid-rails must be inspected as frequently as necessary to ensure strength and stability.
- The top edge height of top-rails or (equivalent) guardrails must be 42 inches (1.1 meters) plus or minus 3 inches (8 centimeters), above the walking/working level.
- When workers are using stilts, the top edge height of the top-rail, or equivalent member, must be increased an amount that is equal to the height of the stilts.
- Screens, mid-rails, mesh, intermediate vertical members, or equivalent intermediate structural members must be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches (53 centimeters) high.
- When mid-rails are used, they must be installed to a height midway between the top edge of the guardrail system and the walking/working level.
- When screens and mesh are used, they must extend from the top rail to the walking/working level and along the entire opening between top rail supports. Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches (48 centimeters) apart.
- Other structural members, such as additional mid-rails and architectural panels, shall be installed so that there are no openings in the guardrail system more than 19 inches (48 centimeters).
- The guardrail system must be capable of withstanding a force of at least 200 pounds/890 N (Newton) applied within 2 inches of the top edge in any outward or downward direction. When the 200 pound (890 N) test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches (1 meter) above the walking/working level.
- Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding a force of at least 150 pounds (667 N) applied in any downward or outward direction at any point along the mid-rail or other member.
- Guardrail systems shall be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.
- The ends of top-rails and mid-rails must not overhang terminal posts, except where such overhang does not constitute a projection hazard.

- When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section must be placed across the access opening between guardrail sections when hoisting operations are not taking place.
- At holes, guardrail systems must be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall have not more than two sides with removable guardrail sections. When the hole is not in use, it must be covered or provided with guardrails along all unprotected sides or edges.
- If guardrail systems are used around holes that are used as access points (such as ladder ways), gates must be used or the point of access must be offset to prevent accidental walking into the hole.
- If guardrails are used at unprotected sides or edges of ramps and runways, they must be erected on each unprotected side or edge.

Personal Fall Arrest Systems

These consist of an anchorage, connectors, and a body belt or body harness and may include a deceleration device, lifeline, or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

- Limit maximum arresting force on an employee to 900 pounds used with a body belt.
- Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness.
- Be rigged so that an employee can neither free fall more than 6 feet (1.8 meters) nor contact any lower level.
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters).
- Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8 meters) or the free fall distance permitted by the system, whichever is less.

The use of body belts for fall arrest is prohibited and a full body harness is required.

Personal fall arrest systems must be inspected prior to each use for wear, damage, and other deterioration. Defective components must be removed from service.

Positioning Device Systems

Body harness systems are to be set up so that workers can free fall no farther than 2 feet (0.6 meters). They shall be secured to an anchorage capable of supporting a least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

Safety Monitoring Systems

When no other alternative fall protection has been implemented, the employer shall implement a safety monitoring system. Employers must appoint a competent person to monitor the safety of workers and the employer shall ensure that the safety monitor:

- Is competent in the recognition of fall hazards.
- Is capable of warning workers of fall hazard dangers and in detecting unsafe work practices.
- Is operating on the same walking/working surfaces of the workers and can see them.
- Is close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.

Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

All workers in a controlled access zone shall be instructed to promptly comply with fall hazard warnings issued by safety monitors.

Safety Net Systems

- Safety nets must be installed as close as possible under the walking/working surface on which employees are working and never more than 30 feet (9.1 meters) below such levels.
- Defective nets shall not be used.
- Safety nets shall be inspected at least once a week for wear, damage, and other deterioration.
- Safety nets shall be installed with sufficient clearance underneath to prevent contact with the surface or structure below.
- Items that have fallen into safety nets including, but not restricted to, materials, scrap, equipment, and tools must be removed as soon as possible and at least before the next work shift.

Warning Line Systems

Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

- Flagged at not more than 6-foot (1.8 meters) intervals with high-visibility material.

- Rigged and supported so that the lowest point including sag) is no less than 34 inches (0.9 meters) from the walking/working surface and its highest point is no more than 39 inches (1 meter) from the walking/working surface.
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 N) applied horizontally against the stanchion, 30 inches (0.8 meters) above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge.
- The rope, wire, or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, must support without breaking the load applied to the stanchions as prescribed above shall be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over.

Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 meters) from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet (3 meters) from the roof edge perpendicular to the direction of mechanical equipment operation.

When mechanical equipment is not being used, the warning line must be erected not less than 6 feet (1.8 meters) from the roof edge.

Covers

Covers located in roadways and vehicular aisles must be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected. All other covers must be able to support at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time. To prevent accidental displacement resulting from wind, equipment, or workers activities, all covers must be secured. All covers shall be color coded or bear the markings "HOLE" or "COVER."

Protection from Falling Objects

When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of potential falling objects. No materials or equipment except masonry and mortar shall be stored within 4 feet (1.2 meters) of working edges. Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear of the working area by removal at regular intervals.

During roofing work, materials and equipment shall not be stored within 6 feet (1.8 meters) of a roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge must be stable and self-supporting.

Training

Employees will be trained in the following areas:

- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems.
- The use and operation of controlled access zones and guardrail, personal fall arrest, safety net, warning line, and safety monitoring systems.
- The role of each employee in the safety monitoring system when the system is in use.
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
- The correct procedures for equipment and materials handling and storage and the erection of overhead protection.
- Employee's role in fall protection plans.

Confined Space Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

To minimize the risk of the City of Murray confined space accidents involving employees. This directive defines the method of control of those procedures.

Authority:

Kentucky Occupational Safety & Health Administration (KOSHA), Code of Federal Regulations 1910.146 (Permit Required Confined Space)

Policy:

The permit required Confined Space Policy is under the direct control of the Department Director, with the Supervisor of each department as his/her personal representative, under the supervision of the Safety Office.

*****Employees whom are certified at the confined space Technician level must follow the guidelines of NFPA 1670.**

Responsibilities

Department Directors

Each department head is responsible for ensuring the success of the confined space entry procedures program in all departments and operations under their control. Department Heads will assure that all immediate supervisors make known the procedures set forth in this policy, and assure that training procedures are followed.

Department Directors:

City Administrator	Director of Finance
Director of Planning and Engineering	Director of Public Works
Chief of Police	Fire Chief

Supervisors

Supervisors will oversee all his/her employees on this policy to ensure that the procedures set forth in the policy, and training procedures are followed. Supervisors will also be in charge of the entry, and must sign off on permit before entry is granted.

***All entry permits shall be sent to the department responsible for maintaining for review.

Supervisors:

Accountant
Assistant Fire Chief
Assistant Superintendent of Field Operations
Cemetery Supervisor
City Planner
Crew Chief (Gas)
Crew Chief (Solid Waste)
Crew Chief (Street)
Crew Chief (Water)
Customer Billing Team Leader
Customer Service Team Leader
Field Operations Superintendent
Field Operations Supervisor (Gas)
Field Operations Supervisor (Water)
Fire Captain
Fire Lieutenant
Gas Superintendent
GIS Supervisor
Human Resources Manager
Information Technology Manager
Maintenance Operations Supervisor
Major/Assistant Police Chief
Office Manager
Plant Operations Superintendent
Police Captain
Police Sergeant
Project Manager
Solid Waste Superintendent
Storm Water/Drainage Supervisor
Street Superintendent
Street Supervisor
Transfer Station Supervisor
Wastewater Plant Chief Operator
Water Plant Chief Operator

Safety Department

- Safety department will ensure that newly hired employees are trained within thirty days of hire and will be trained once a year thereafter.
- Monitor immediately dangerous to life or health confined space situations.

Supervisors will oversee employees on the following material:

1. Hazard Identification: Identify and evaluate each hazard of the permit space, including determination of severity.

2. Hazard Control: Implement means, procedures, and practices by which the permit spaces can be entered safely.

3. Permit System: Written permit system for the proper preparation, issuance and implementation of entry permits.

4. Employee Information: Barricades shall be constructed near permit spaces to notify employees what hazards may be present and that only authorized entrants may enter the permit spaces.

5. Prevention of Unauthorized Entry: Prevent unauthorized entry through such measures as training or by posting signs and barriers, as necessary.

6. Equipment: Provide, maintain and ensure the proper use of the equipment necessary for safe entry, including testing, monitoring, communication, and personal protective equipment.

7. Rescue: Ensure that the procedures and equipment necessary to rescue entrants from permit spaces are implemented and provided.

8. Protection from External Hazards: Ensure that all pedestrian, vehicle or other barriers necessary to protect entrants from external hazards are provided.

9. Duty to Other Employers: Ensure that, when another employer such as a contractor, plans to send employees into a permit space which is under the control of the operating department, the employer is provided with all available information on permit space hazards, safety rules and emergency procedures of which the contractor needs to be aware in order to comply with the standard.

Employees

All employees are required to comply with all operating procedures as set forth by the safety office and included in this policy.

The safety office will:

- Assist with confined space training programs and safety meetings to reinforce safety procedures for supervisors and employees.
- Review entry permits.

Procedures:

1) Types of Entry Permits

   a) Standard Permit, One Time Entry: A standard permit will be used for each entry into wet wells, tanks, valve pits, lift stations, or other spaces defined as a confined space.
   b) This permit will be completed by the person in charge of the entry, signed by each entrant into the confined space, and turned into the supervisor by the person in charge of entry when completed.

2) Supervisors shall include the following information on the checklist portion of the permit:

   a) The hazards of the permit space

b) The measures for isolation of the permit space
c) The measures, such as lockout/tagout, equipment and procedures for purging, inserting, ventilating and flushing, used to remove or control potential hazards
d) Acceptable environmental conditions, qualified with regard to the hazards identified in the permit space, which must be maintained during entry
e) Testing and monitoring equipment and procedures by which the supervisor will verify that acceptable environmental conditions are being maintained during entry
f) The Public Works Rescue Team and other services which would be summoned in case of emergency and the means of communication with those services **must be notified before entry**
g) Rescue equipment required on-site
h) The communication procedures and equipment used by authorized entrants and attendants to maintain contact
i) The personal protective equipment, such as respirators, retrieval lines, provided in order to ensure employee safety
j) Any other information whose inclusion is necessary, given the circumstances of the particular permit space, in order to ensure employee safety

3) Unless the supervisor assumes direct charge of the entry for its duration, they shall, in addition to the checklist items required in the preceding paragraph, include in the permit, at a minimum, the following information:

a) The identity of the permit space
b) The purpose of the entry
c) The date of the entry and the authorization duration
d) A list of the authorized entrants
e) A list of eligible attendants
f) A list of individuals eligible to be in charge of the entry
g) The signature, together with the name printed or otherwise legible, of the individual authorizing the entry, verifying that all actions and conditions necessary for safe entry have been performed

4) Normal Entry and Exit Procedures

a) Entry is to be made by authorized personnel only.
b) An attendant is to be present whenever entry is made into any confined space. The attendant shall remain at the entrance and have available:
   (1) A lifeline
   (2) City of Murray Confined Space Trailer. This trailer is located behind Public Works Office building on Andrus Drive. ***The Department Head or designee is responsible for the monthly inspection of the trailer and is also responsible for ensuring the trailer is returned to the designated location.
c) A permit will be filled out by supervisor prior to the actual entry, and be kept at an accessible area near the confined space.
d) A sign or other means of posting that a confined space is being entered will be at the opening of the confined space. The posting shall read: “Danger Confined Space Enter by Permit Only”.
e) Ventilation: All permit entry confined spaces are to be purged prior to and during entry.

f) Lockout/Tagout – Follow the lockout/tagout procedures for isolation of any electrical devices which could cause injury to entrants.
g) Testing equipment – After purging area, and before entry, the confined space is to be tested using equipment capable of measuring oxygen content, the presence of explosive and toxic gases. All equipment will be tested for operation and safety before reaching the job site.

All confined spaces will be tested for the following:

(1) Oxygen deficiency: 19.5% or less
(2) Oxygen enrichment: 23.5% or more
(3) Explosive gases: Methane calibrated, maximum of 10% LEL
(4) Toxic gases: hydrogen sulfide (H_2S), carbon monoxide (CO) calibrated maximum of 10 ppm.

h) Test results – The gas detecting device shall be lowered and secured at the working level with test results as follows:
   (1) Test results are positive (alarm activates) ventilate again for 20 minutes and permits must be re-done
   (2) If results are negative (no alarms) the area is cleared for entry and will be tested and ventilated continuously while in use.
i) Lifelines and harnesses – All lifelines, harness, D-rings and any other equipment needed for entry or exit shall be inspected for defects prior to entry. A safety harness shall be worn by all personnel entering a wet well or manhole or permit required confined space not meeting the oxygen, explosive gas and toxic gas minimum/maximum conditions set forth in this policy. A lifeline shall be attached to the harness of all entry personnel and will be sufficient in length to extend 10 feet out of the entrance. This lifeline will be securely anchored outside the confined space. In large diameter gravity lines, a rescue tripod will be used to prevent being swept down the main.
j) Personal Protective Equipment – Eye and face protection is to be provided whenever employees are exposed to flying objects or glare. Chemical goggles are to be provided whenever employees are exposed to sewage, eye irritating chemicals, vapors, or dusts. Foot protection is to be provided whenever the hazard of falling objects or slipping and falling is present. Full body protection is to be provided whenever in direct contact with sewage or chemicals. Hearing protection is to be worn whenever the noise exposure to employees is to exceed a time weighted average of 85 dBA or an instantaneous noise level of 115 dBA. If in doubt as to the noise exposure, contact the safety office. If respiratory protection is determined to be needed the safety office should be contacted for the proper procedures and safety equipment to enter the space safely. When lifelines are used they must be able to withstand a dead load of 2,500 lbs. Safety belts must withstand a drop test of 350 lbs. at 6 feet. Safety belts are to be worn for all IDLH conditions. When entry into a confined space is done through a top opening, the safety belt shall be the type which

suspends a person in an upright position. At least one attendant must be present and provided with similar protective equipment as the person inside the space. Illumination is to be provided in confined spaces and must be insulated and explosion proof. The lighting must also be guarded.

k) Entry – After all safety equipment is in place, determination of an acceptable environmental condition exists, and the gas detector is secured at the working level then safe entry may begin. Ventilation is not necessary if gas monitor is checked and provides negative reading.

l) Work Completed – Once the work has been finished, the entrant will remove tools and any other equipment brought in and then exit the space. The gas detector will be removed last and the area secured.

Special Permits for Entry into Low-Hazard Permit Spaces

Low-Hazard Permit Spaces include but are not limited to clarifiers, elevator shafts, and aerator basins as long as proper lock out procedures have been followed.

When department supervisors determine, based on documentation which appears on the entry permit, that the permit space they plan to have employees enter are low-hazard permit spaces, the supervisor may authorize entry into a permit space without providing an attendant, for a period of up to one year. This special permit must comply with the permit required confined space program, the permit system and the following provisions, as applicable:

A. Inspection and Checking – Supervisors who plan to have employees periodically enter low-hazard permit spaces on a routine basis, solely to inspect or check meters or other equipment, shall ensure that authorized entrants receive the necessary training and that (1) the appropriate entry practices and procedures are in effect before authorizing or allowing entry, and are followed throughout the entry (2) In permit spaces with potential for an atmospheric hazard, the permit space atmosphere shall be tested prior to each entry and as entry proceeds, using an appropriate direct reading instrument and a remote sampling probe and testing the following sequence: Oxygen concentration, combustible gas or vapor, and potential toxic contaminants (3) no permit space hazard is present immediately before each entry (4) The authorized entrant neither takes anything into the permit space nor takes any action which could cause a hazard to arise (5) The entry permit is revoked when the direct reading instrument being used or some other circumstance indicates that conditions are no longer acceptable for entry (6) When the entry permit has been revoked because unacceptable conditions have arisen in a permit space, subsequent entry may not be made by special permit until the space is restored to special permit conditions.

B. Minor Maintenance Work – Supervisors who plan to have employees enter low-hazard permit spaces to perform minor maintenance work, such as tightening a nut, which would not generate a serious hazard shall ensure that authorized entrants receive the necessary training and that (1) Appropriate entry practices and procedures are in effect

before authorizing or allowing entry and are followed throughout the entry (2) If the space has a potential for hazardous atmosphere, the permit space atmosphere shall be shown to be, and remain, acceptable for entry using one of the following means, as appropriate to make that determination (a) Ventilation of the permit space prior to entry, using a mechanically powered ventilator for at least 20 minutes, and continuously throughout the entry or (b) A combination of mechanically powered ventilation and atmospheric testing or (c) Continuous atmospheric monitoring or (d) Frequent atmospheric testing. (3) The entry permit is revoked because unacceptable conditions have arisen in a permit space; any subsequent entry is made with the attendant stationed outside the permit space.

Confined Space enclosures may include but not limited to:

Boiler	Pumping Station
Degreaser	Septic Tank
Furnace	Sewage Digester
Pipeline	Sewer
Pit	Storage Tank
Manholes	

Training and Duties of the Individual Authorizing or in Charge of Entry

The department head will ensure that individuals authorizing or in charge of entry receive training before entry and will be trained once a year thereafter and perform assigned duties as follows:

A. Entry Authorization and Supervision: (1) Determine that the entry permit contains the requested information before authorizing or allowing entry (2) Determine that the necessary procedures, practices, and equipment for safe entry are in effect before allowing entry (3) Determine, at appropriate intervals, that entry operations remain consistent with the terms of entry permit, and that acceptable entry conditions are present (4) Cancel the entry authorization and terminate entry whenever acceptable entry conditions are not present (5) Take the necessary measures for concluding an entry operation, such as closing off permit space and cancelling the permit, once the work authorized by the permit has been completed (6) Supervisors empowered to authorize entries may also serve as authorized entrants or attendants for entry if they have the proper training.

B. Dealing with unauthorized personnel – Supervisors authorizing or in charge of entry shall take appropriate measures to remove unauthorized personnel who are in or near entry permit spaces.

Training and Duties of Authorized Entrants

The Department Head will ensure that employees who work as authorized entrants receive the appropriate training, and perform their assigned duties under the entry permit program, as follows:

A. Hazard recognition: (1) Know the hazards which may be faced during entry (2) Recognize the signs and symptoms of exposure to a hazard (3) Understand the consequences of exposure to a hazard.
B. Communication: (1) Maintain contact with the attendant (2) Notify attendant when the entrant makes self-initiative evacuation of a permit space
C. Protective Equipment: (1) Are aware of the personal protective equipment, such as retrieval lines, respirators or clothing, needed for safe entry and exit (2) Are provided with the necessary personal protective equipment (3) Use the personal protective equipment properly (4) Are aware of the external barriers needed to protect entrants from external hazards and of the proper use of those barriers.
D. Self-Rescue: “the rescue person in charge of entry” shall ensure that authorized entrants exit the permit space, unless it is physically impossible to do so; when (1) The attendant orders evacuation (2) An automatic alarm is activated (3) The authorized entrants perceive that they are in danger.

Training and Duties of the Attendant

Supervisors will ensure that an attendant is stationed and remains outside the permit space at all times during entry operations, and that employees who work as attendants receive the appropriate training and perform their assigned duties under the entry permit program, as follows:

A. Number of Entrants: The attendants will continuously maintain an accurate count of all persons in the space.
B. Hazard Recognition: The attendant knows of and can recognize potential permit space hazards and monitor activities inside and outside the permit space to determine if it is safe for entrants to remain in the space.
C. Communication: (1) Maintain effective and continuous contact with authorized entrants; (2) Order authorized entrants to evacuate the permit space immediately when: (a) The attendant observes a condition which is not allowed in the entry permit; (b) The attendant detects behavioral effects of hazard exposure; (c) The attendant detects a situation outside the space which could endanger the entrants; (d) The attendant detects an uncontrolled hazard within the permit space; (e) The attendant is monitoring entry in more than one permit space and must focus attention on the rescue of entrants from one of those spaces; and (f) The attendant must leave the work station. (3) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants need to escape from the permit space hazards; (4) Take the following actions, as necessary, when unauthorized persons approach or enter a permit space while entry is underway: (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 other persons designated by the operating department if unauthorized persons have entered the permit space.

Definitions:

Acceptable entry conditions- the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

Attendant- an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized entrant- an employee who is authorized by the employer to enter a permit required space.

Blanking or blinding- the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined space is a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and

(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and

(3) Is not designed for continuous employee occupancy.

Double block and bleed- the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

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.

Engulfment- the surrounding and effective capture of a person by a liquid or finely divided (flow able) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry- action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening

into the space.

Entry permit- the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

Entry supervisor- the person (such as the employer or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Hazardous atmosphere- an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), 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) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;

(5) Any other atmospheric condition that is immediately dangerous to life or health.

Hot work permit- employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

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.

Inerting- the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolation- the process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line breaking- the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Non-permit 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.

Oxygen deficient atmosphere- an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere- an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space- a confined space that has one or more of the following characteristics:

(1) Contains or has a potential to contain a hazardous atmosphere;

(2) Contains a material that has the potential for engulfing or entrapping 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.

Prohibited condition- any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Retrieval system- equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

Testing- process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Hot-works Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose

The purpose of this procedure is to define a system of control that will allow work, involving cutting and welding processes using electric arcs or oxy-fuel gas flames (or other ignition sources with hazard potential) to be carried out safely.

Definitions:

Sources of Ignition: Any flame, spark producer, hot surface, internal combustion engine, and operations such as, but not limited to:

Welding	Cutting
Chop Sawing	Brazing
Torch Cutting	Chipping
Grinding	Drilling
Sanding	Hack Sawing
Use of impact wrenches	Sand Blasting
Jack Hammering	Electrical work involving hot contact

A **restricted area** can be identified by evaluating the following guidelines:

- The proximity or fire characteristics of nearby solids, liquids, or dusts, even though contained in piping.
- The presence or development of possible explosive mixtures of flammable gases, vapors, or dusts in air.
- The presence of an oxygen enriched (>23.5%) atmosphere in the location where the work is performed.

Non-restricted Areas – General yard areas, fabrication shop areas, and areas where there is no storage or use of flammable or combustible materials.

Test Meters- Include meters and instruments used to detect, measure or sample for flammable liquids or gases and oxygen deficiency or excess concentrations.

Lower Explosive Limit (LEL) – The minimum concentration of vapor to air below which the propagation of a flame will not occur in the presence of an ignition source.

Flash Point – The minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid within the vessel

as specified by appropriate test procedure and apparatus.

Combustible Liquid – A liquid with a flash point at or above 140° F.

Flammable Liquid – A liquid having a flash point below 140° F and having a vapor pressure not exceeding 40 pounds.

General

The handling, transport, care and use of cutting equipment shall comply with all applicable requirements.

Under no circumstances will ignition sources be introduced into an atmosphere which contains greater than zero (0) percent as read on the LEL meter of the lower explosive limit. If zero percent LEL as read on the meter cannot be obtained, approval from the safety manager must be obtained prior to doing the work. (All efforts should be made to achieve a zero percent instrument reading.)

Procedures

Each cutting/welding/ignition source job in a restricted area shall be evaluated for exposure to an ignition source by the supervisor during pre-job discussions as needed. (See Appendix A for proper form.)

If sparks and/or hot slag could fall onto or scatter horizontally to an area which possesses combustible/flammable accumulations of dust or residue, the work will be performed away from the exposure, or the exposure moved a safe distance from the work.

All exhaust/ventilation exposed to falling or scattering spars/slag shall be de-energized and physically blocked from natural draft. Note: butterfly valves may not provide total blocking. Collection lines will also be shielded at their intakes and additionally, if constructed of combustible materials.

Prior to commencing any cutting/welding activity during hazardous work applications, the method to extinguish the fire shall be discussed in detail (water supply, manual, or fixed suppressions, etc.)

Fully charged and operable fire extinguishers, appropriate for the type of possible fire, shall be available at the work area.

General Precautions

Combustible floors shall be kept wet, protected with damp sand, or protected by fire resistant shields. Where floors have been wet down, personnel operating arc cutting or welding equipment shall be protected from possible shock.

Where cutting or welding activity is done near combustible walls, partitions, ceiling, or roof of combustible construction material, fire resistant shields or guards shall be provided to prevent ignition. If cutting/welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition. If cutting/welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferable by relocating the combustibles. This includes partitions of combustible sandwich-type panel construction. Where combustibles are not relocated, a fire watch will be provided for the opposite side of the wall.

Cutting or welding on pipes or other metal near combustible walls, partitions, ceilings, or roofs shall not be undertaken without an approval. This includes materials coated with combustible materials.

Openings or cracks in walls and floors, including chemical sewers and drains, within the range of falling or scattering sparks or slag, where ignition of flammables/combustibles could occur, shall be tightly covered to prevent passage of ignition sources to the adjacent work areas.

Responsibilities to Fire Watch

Fire watches shall have fire extinguishing equipment readily available and be trained in its use. Fire watches shall watch for fires in all exposed areas. A fire watch/supervisor shall maintain close observation after completion of the cutting or welding operation to detect and extinguish smoldering fires for a minimum of 30 minutes.

Special Conditions

Combustible gas measurements will be taken, immediately prior to cutting or welding, in close proximity combustible gas/liquid lines to assure that the area at and below the welding or cutting activity if free from the presence of flammable gas.

Hot tapping or other cutting and welding on a flammable gas or liquid transmission or distribution utility pipeline shall only be performed by fully trained/qualified and/or licensed personnel.

Cutting and Welding in Confined Spaces

Forced exhaust ventilation will be provided to remove toxic fumes below safe limits.
Welding cylinders shall not be permitted inside of confined spaces.

Cutting or welding over or near a confined space that could contain a combustible gas requires the testing of the confined space for combustible gas.

No cutting, welding or other hot work shall be performed on used drums, barrels, storage tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, or other materials which, when subjected to heat, might produce flammable or toxic vapors. Any pipelines or connections to the drum or vessel shall be disconnected or blanked.

Personal Protective Equipment (PPE)

Proper eye, ear (if applicable), and respiratory (if applicable) protection will be provided and required based on the job to be performed. Other personal protection against heat, sparks, slag, etc. shall be required by the particular condition. This protection includes nearby personnel as well as the employee engaged in the cutting or welding.

Shielding or screening of welding arc rays will be provided when employees might be exposed to the arc flash.

Attention to respiratory protection shall be given to situations involving cutting, welding, or heating of metals or near materials of toxic significance. These toxic substances include lead-based metals and paints, cadmium, zinc, chromium, and beryllium containing materials as well as chlorinated solvents. The supervisor should be contacted if exposure to such toxic substances may exist.

Excavations

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This program applies to all open excavations made in the earth's surface by any City of Murray employee.

Purpose:

To protect the City of Murray employees from any possible cave-ins that may occur during an excavation. This program will not only provide information on the types of systems, but the slope and configuration of the systems.

Policy:

Departments performing excavation work must ensure that supervisors and employees comply with all aspects of this program.

Authority- Kentucky Occupational Safety and Health Administration (KOSHA), Code of Federal Regulations 29, 1926.650 – 1926.652, (Excavations)

Hazards:

Excavations are one of the more dangerous types of work. Extra precautions should be taken to provide the maximum level of safety for the workers. Different hazards associated with excavations are:

- Entrapment
- Suffocation
- Struck by/Caught between
- Explosion
- Electrocution

Hazard Controls

Before any work is performed the following items must first be checked:

- Underground installations must be checked and determined in the working area. This can be done by contacting KY 811 at (502) 266-5677.
- If excavation is to be greater than 20 feet, it must be designed by a certified engineer registered by the state of Kentucky.

- The proper protective systems will be used during the excavation. This includes proper methods of sloping, shoring, or protective shields.
- Workers must be provided personal protective equipment that provides a suitable level of protection for that specific job.
- Jobsite hazard analysis must be performed to ensure maximum protection for the employees.
- Spoil piles will be stored a minimum of two (2) feet from the sides of the excavation. The spoil pile must not block the safe means of egress.
- Excavations that are greater than five (5) feet in depth must have a means of egress for employees that require no more than 25 feet of lateral travel.
- Employees exposed to public vehicular traffic shall be provided with, and shall wear; warning vests or other suitable garments marked with or made of high-visibility material.

Competent Person Requirements

A “competent person" defined by OSHA is "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them". By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation, and has the authority to correct them.

A competent person is required to:

- Be knowledgeable of applicable standards, the different types of excavations, and the excavation hazards and monitoring of those hazards.
- Determine locations of underground installations or utilities and that the proper utility companies have been contacted.
- Conduct soil classification tests and reclassify soil after any condition changes.
- Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
- Conduct a daily inspection prior to the start of work and as needed throughout the day. Inspections shall also be made and documented after every rainstorm or other hazard increasing occurrence, and if any changes are made to the excavation.

Hazardous Atmospheres

A competent person must test excavations greater than five (5) feet in depth as well as ones where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist, before an employee enters the excavation. If hazardous conditions exist, controls such as proper respiratory protection or ventilation must be available. Also, controls used to reduce atmospheric contaminants to acceptable levels must be tested regularly.

Where adverse atmospheric conditions may exist or develop in an excavation, the confined space trailer must be readily available. This equipment must be attended when used.

Soil Classification

The OSHA Standards define soil classifications within the Simplified Soil Classification Systems, which consist of four categories: Stable rock, Type A, Type B, and Type C. Stability is greatest

in stable rock and decreases through Type A and B to Type C, which is the least stable. Appendix A of the Standard provides soil mechanics terms and types of field tests used to determine soil classifications.

Stable rock is defined as natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Type A soil is defined as:

- Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (tsf) or greater.
- Examples of cohesive soils are: clay, silt clay, sandy clay, clay loam and, in some cases, silt clay loam and sandy clay loam.

Soil is NOT Type A if:

- It is fissured.
- The soil is subject to vibration from heavy traffic, pile driving or similar effects.
- The soil has been previously disturbed.
- The material is subject to other factors that would require it to be classified as a less stable material.

Type B soil is defined as:

- Cohesive soil with an unconfined compressive strength greater than .5 TSF, but less than 1.5 TSF.
- Granular cohesion less soil including angular gravel, silt, silt loam, and sandy loam.
- The soil has been previously disturbed except that soil classified as Type C soil.
- Soil that meets the unconfined compressive strength requirements of Type A soil, but is fissured or subject to vibration.
- Dry rock that is not stable.

Type C soil is defined as:

- Cohesive soil with an unconfined compressive strength of .5 TSF or less.
- Granular soils including gravel, sand and loamy sand.
- Submerged soil or soil from which water is freely seeping.
- Submerged rock that is not stable.
- Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

Soil Test & Identification

The classification of the soils shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a competent person using tests described below.

Visual tests- Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.

- Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.
- Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of soil break off of a vertical side, the soil could be fissured. Small breaks are evidence of moving ground and are indications of potentially hazardous situations.
- Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.
- Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

Manual tests- Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

- Plasticity- Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling.
- Thumb penetration- Attempt to penetrate a fresh sample with thumb pressure. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded.
- Dry strength. If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular. If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered un-fissured.

***Soils may be tested throughout the excavation to provide accurate data. Soil is subject to change during the excavation due to the depth, moisture, and other conditions that may affect its classification.

Sloping and Benching

MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK TYPE A (2) TYPE B TYPE C	VERTICAL (90º) 3/4:1 (53º) 1:1 (45º) 1 ½:1 (34º)

Sloping and benching systems for excavations five (5) to twenty (20) feet in depth must be constructed under the instruction of a designated competent person (see definitions).

Sloping and benching systems for excavations greater than twenty (20) feet must be designed and stamped by a registered professional engineer.

Shoring Systems

Shoring is a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins. The following are three types of shoring located under the OSHA Standards:

- **APPENDIX C -** Timber Shoring for Trenches
- **APPENDIX D -** Aluminum Hydraulic Shoring for Trenches
- **APPENDIX E -** Alternatives to Timber Shoring

(The Appendices above can be found in the OSHA CFR 1926 or at www.osha.gov)

Protective Systems (Trench Boxes)

Unlike Shoring and Benching, protective systems are not designed to prevent cave-ins but rather to withstand the soil loads caused by cave-ins. This protects the employees who are located in the structure. Adequate protective systems should be implemented in accordance to this program except the following situations:

- Excavations are made entirely in stable rock.
- Excavations are less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

Requirements for Protective Systems:

- Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.
- Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.

- Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, or other predictable failure.
- Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.
- Employees are not allowed in the shield during installation, removal, or during any vertical movement.
- Excavation of material to a level no greater than 2 feet below the bottom of the members of a support system shall be permitted.
- The support or shield system must extend at least 18 inches above the top of the vertical side.
- The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

Support systems, shield systems, and other protective systems shall be approved by a registered professional engineer. Designs shall include sizes, types, and configurations of the materials to be used in the protective system. In addition the identity of the professional engineer shall be included. Protective systems must have either a registration plate on the shield or registration papers from the manufacturer on file at the Public Works Administration Building.

*ANY REPAIRS OR MODIFICATIONS MUST BE APPROVED BY THE MANUFACTURER.

Training

The competent person(s) must be trained in accordance with the OSHA Excavation Standard, and all other programs that may apply (examples Hazard Communication, Confined Space, and Respiratory Protection), and must demonstrate a thorough understanding and knowledge of the programs and the hazards associated.

All other employees working in and around the excavation must be trained in the recognition of hazards associated with trenching and excavating. The Department Head is responsible for annual employee training.

Definitions:

Accepted Engineering Practices – Those requirements which are compatible with standards of practice required by a registered professional engineer.

Benching – A method of protecting employees from cave-ins by excavating the sides of a site to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-in – The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury , or otherwise injure and immobilize a person.

Competent Person – A person who is capable of indentifying existing and predictable hazards in the surrounding, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Excavation – Any man made cut, cavity, trench, or depression in an earth's surface, formed by earth removal.

Protective System – A method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Registered Professional Engineer – A person who is registered as a professional engineer in the state where the work is performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer: within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Shield – A structure that is able to withstand the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses.

Shoring – A structure such as a metal hydraulic mechanical or timber shoring system that support the sides of an excavation and which is designed to prevent cave-ins.

Sloping – A method of protecting employees from cave-ins by excavating to form sides of an excavation so as to prevent cave-ins.

Stable Rock – A natural solid mineral matter that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against cave-in or movement by rock bolts or by another protective system that has been designed by a registered professional.

Structural Failure – The breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

Trench – A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

Crane & Hoist Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The purpose of this program is to maintain a safe workplace for all employees; therefore, it cannot be overemphasized that only qualified and licensed individuals shall operate these devices. The safety rules and guidance in this chapter apply to all operations at the City of Murray that involve the use of cranes and hoists installed in or attached to buildings and to all City of Murray employees, supplemental labor, and subcontractor personnel who use such devices.

Responsibilities:

Supervisors are responsible for:

- Ensuring that employees under their supervision receive the required training and are certified and licensed to operate the cranes and hoists in their areas.
- Providing training for prospective crane and hoist operators. This training must be conducted by a qualified, designated instructor who is a licensed crane and hoist operator.
- Evaluating crane and hoist trainees using the crane safety checklist and submitting the qualification request form to the safety office to obtain the operator's license.
- Ensuring that hoisting equipment is inspected prior to each use by a responsible individual and that rigging equipment is inspected and certified annually.

Crane and Hoist Operators are responsible for:

- Operating hoisting equipment safely.
- Conducting functional tests prior to using the equipment.
- Selecting and using rigging equipment appropriately.
- Having a valid operator's license on their person while operating cranes or hoists.
- Participating in the medical certification program, as required.

Maintenance Operations Supervisor is responsible for:

- Performing annual maintenance and inspection of all City of Murray cranes and hoists that are not covered by a program with maintenance responsibility.
- Conducting periodic and special load tests of cranes and hoists.
- Maintaining written records of inspections and tests, and providing copies of all inspections and test results to facility managers and building coordinators who have cranes and hoists on file.
- Inspecting and load testing cranes and hoists following modification or extensive repairs (e.g., a replaced cable or hook, or structural modification.)

- Scheduling a non-destructive test and inspection for crane and hoist hooks at the time of the periodic load test, and testing and inspecting before use/ new replacement hooks and other hooks suspected of having been overloaded. The evaluation, inspection, and testing may include, but are not limited to visual, dye penetrate, and magnetic particle techniques referenced in ASME B30.10 (Hooks, Inspection and Testing.)
- Maintaining all manuals for cranes and hoists in a central file for reference.

Safety Department is responsible for:

- Periodically verifying monthly test and inspection reports.
- Interpreting crane and hoist safety rules and standards.

Safe Operating Requirements

All workers who use any City of Murray crane or hoist must have an operator's license or be under supervision of operator with license. The City issues licenses for authorized employees who have been specifically trained in crane and hoist operations and equipment safety.

Crane and Hoist Operators

To be qualified as a Crane and Hoist Operator, the candidate shall have received hands-on training from a licensed, qualified crane and hoist operator designated by the candidate's supervisor. Upon successful completion of training, the licensed crane and hoist operator and the candidate's supervisor will fill out and sign the Qualification Request Form and Crane Safety Checklist and send them to the Safety Department for approval. The candidate will be issued a license upon approval by the Safety Department. Crane and Hoist Operators must renew their license **every three years** by satisfying the requirements described above.

Crane and Hoist Safety Design Requirements

Following are the design requirements for cranes and hoists and their components:

- The design of all commercial cranes and hoists shall comply with the requirements of ASME/ANSI B30 standards and Crane Manufacturer's Association of America standards (CMAA-70 and CMAA-74). The City of Murray-fabricated lifting equipment shall comply with the requirements in Chapter 2.2 (Lifting Equipment) of Mechanical Engineering *Design Safety Standards* (latest edition).
- All crane and hoist hooks shall have safety latches.
- Hooks shall not be painted (or re-painted) if the paint previously applied by the manufacturer is worn.
- Crane pendants shall have an electrical disconnect switch or button to open the main-line control circuit.
- Cranes and hoists shall have a main electrical disconnect switch. This switch shall be in a separate box that is labeled with lockout capability.
- Crane bridges and hoist monorails shall be labeled on both sides with the maximum capacity.
- Each hoist-hook block shall be labeled with the maximum hook capacity.
- Directional signs indicating N-W-S-E shall be displayed on the bridge underside, and a corresponding directional label shall be placed on the pendant.

- A device such as an upper-limit switch or slip clutch shall be installed on all building cranes and hoists. A lower-limit switch may be required when there is insufficient hoist rope on the drum to reach the lowest point.
- All cab and remotely operated bridge cranes shall have a motion alarm to signal bridge movement.
- All newly installed cranes and hoists, or those that have been extensively repaired or rebuilt structurally, shall be load tested at 125% capacity prior to being placed into service.
- If an overload device is installed, a load test to the adjusted setting is required.
- Personnel baskets and platforms suspended from any crane shall be designed in accordance with the specifications in 29 CFR 1926.550(g).

General Safety Rules

Operators shall comply with the following rules while operating the cranes and hoists:

- Do not engage in any practice that will divert your attention while operating the crane.
- Respond to signals only from the person who is directing the lift, or any appointed signal person.
- Obey stop signs/signals at all times, no matter who gives it.
- Do not raise a load over a person. People shall not be placed in jeopardy by being under a suspended load. Also, do not work under a suspended load unless the load is supported by blocks, jacks, or a solid footing that will safely support the entire weight. Have a crane or hoist operator remain at the controls or lock open and tag the main electrical disconnect switch.
- Ensure that the rated load capacity of a crane's bridge, individual hoist, or any sling or fitting is not exceeded. Know the weight of the object being lifted or use a dynamometer or load cell to determine the weight.
- Check that all controls are in the **"OFF"** position before closing the main-line disconnect switch.
- If spring-loaded reels are provided to lift pendants clear off the work area, ease the pendant up into the stop to prevent damaging the wire.
- Avoid side pulls. These can cause the hoist rope to slip out of the drum groove, damaging the rope or destabilizing the crane or hoist.
- To prevent shock loading, avoid sudden stops or starts. Shock loading can occur when a suspended load is accelerated or decelerated, and can overload the crane or hoist. When completing an upward or downward motion, ease the load slowly to a stop.

Operation Rules

Pre-operational Test

At the start of each work shift, operators shall do the following steps before making lifts with any crane or hoist:

1. Test the upper-limit switch. Slowly raise the unloaded hook block until the limit switch trips.
2. Visually inspect the hook, load lines, trolley, and bridge as much as possible from the operator's station; in most instances, this will be the floor of the building.
3. If provided, test the lower-limit switch.

4. Test all direction and speed controls for both bridge and trolley travel.
5. Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches.
6. Test the pendant emergency stop.
7. Test the hoist brake to verify there is no drift without a load.
8. If provided, test the bridge movement alarm.
9. Lock out and tag for repair any crane or hoist that fails any of the above tests.

Moving a Load

- Center the hook over the load to keep the cables from slipping out of the drum grooves and overlapping, and to prevent the load from swinging when it is lifted. Inspect the drum to verify that the cable is in the grooves.
- Use a tag line when loads must travel long distances or must otherwise be controlled. Manila rope may be used for tag lines.
- Plan and check the travel path to avoid personnel and obstructions.
- Lift the load only high enough to clear the tallest obstruction in the travel path.
- Start and stop slowly.
- Land the load when the move is finished. Choose a safe landing.
- ***Never*** leave suspended loads unattended! In an emergency where the crane or hoist has become inoperative, if a load must be left suspended, barricade and post signs in the surrounding area, under the load, and on all four sides. Lock open and tag the crane or hoist's main electrical disconnect switch.

Parking a Crane or Hoist

- Remove all slings and accessories from the hook. Return the rigging device to the designated storage racks.
- Raise the hook at least 2.1 m (7 ft) above the floor.
- Store the pendant away from aisles and work areas, or raise it at least 2.1 m (7 ft) above the floor.
- Place the emergency stop switch (or push button) in the OFF position.

Rigging

General Rigging Safety Requirements

Only select rigging equipment that is in good condition. All rigging equipment shall be inspected annually; defective equipment is to be removed from service and destroyed to prevent inadvertent reuse. The load capacity limits shall be stamped or affixed to all rigging components.

The City of Murray policy requires a minimum safety factor of 5 to be maintained for wire rope slings. The following types of slings shall be rejected or destroyed:

- Nylon slings with abnormal wear, torn stitching, broken or cut fibers, or discoloration or deterioration
- Wire-rope slings with:
    - Kinking, crushing, bird-caging, or other distortions

    - Evidence of heat damage
    - Cracks, deformation, or worn end attachments
    - Six randomly broken wires in a single rope lay
    - Three broken wires in one strand of rope
    - Hooks opened more than 15% at the throat
    - Hooks twisted sideways more than 10° from the plane of the unbent hook
  - Alloy steel chain slings with cracked, bent, or elongated links or components
    - Cracked hooks
  - Shackles, eye bolts, turnbuckles, or other components that are damaged or deformed

Rigging a Load

Follow these guidelines when rigging a load:

- Determine the weight of the load. **Do not guess.**
- Determine the proper size for slings and components.
- Do not use manila rope for rigging.
- Make sure that shackle pins and shouldered eye bolts are installed in accordance with the manufacturer's recommendations.
- Make sure that ordinary (shoulder-less) eye bolts are threaded in at least 1.5 times the bolt diameter.
- Use safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible.
- Pad sharp edges to protect slings. Remember that machinery foundations or angle-iron edges may not feel sharp to the touch but could cut into rigging when under several tons of load. Wood, tire rubber, or other pliable materials may be suitable for padding.
- Do not use slings, eye bolts, shackles, or hooks that have been cut, welded, or brazed.
- Install wire-rope clips with the base only on the live end and the U-bolt only on the dead end. Follow the manufacturer's recommendations for the spacing for each specific wire size.
- Determine the center of gravity and balance the load before moving it.
- Initially lift the load only a few inches to test the rigging and balance.

Crane Overloading

Cranes or hoists shall not be loaded beyond their rated capacity for normal operations. Any crane or hoist suspected of having been overloaded shall be removed from service by locking open and tagging the main disconnect switch. Additionally, overloaded cranes shall be inspected, repaired, load tested, and approved for use before being returned to service.

Working at Heights on Cranes or Hoists

Anyone conducting maintenance or repair on cranes or hoists at heights greater than 1.8 m (6 ft) must use fall protection. Fall protection should also be considered for heights less than 1.8 m. Fall protection includes safety harnesses that are fitted with a lifeline and securely attached to a structural member of the crane or building or properly secured safety nets.

Hand Signals

Signals to the operator shall be in accordance with the standard hand signals unless voice communications equipment (telephone, radio, or equivalent) is used. Signals shall be discernible or audible at all times. Some special operations may require addition to or modification of the basic signals. For all such cases, these special signals shall be agreed upon and thoroughly understood by both the person giving the signals and the operator, and shall not be in conflict with the standard signals.

Inspection, Maintenance, and Testing

All tests and inspections shall be conducted in accordance with the manufacturer's recommendations.

Pre-Use Tests and Inspections

- All in-service cranes and hoists shall be inspected prior to each use and the results documented.
- Defective cranes and hoists shall be locked and tagged "out of service" until all defects are corrected. The inspector shall initiate corrective action by notifying the Maintenance Operations Supervisor.

Annual Inspections

The Maintenance Operations Supervisor shall schedule and supervise (or perform) annual preventive maintenance (PM) and annual inspections of all cranes and hoists. The annual PM and inspection shall cover

- Hoisting and lowering mechanisms
- Trolley travel or monorail travel
- Bridge travel
- Limit switches and locking and safety devices
- Structural members
- Bolts or rivets
- Sheaves and drums
- Parts such as pins, bearings, shafts, gears, rollers, locking devices, and clamping devices
- Brake system parts, linings, pawls, and ratchets
- Load, wind, and other indicators over their full range
- Gasoline, diesel, electric, or other power plants
- Chain-drive sprockets
- Crane and hoist hooks
- Electrical apparatus such as controller contractors, limit switches, and push button stations
- Wire rope
- Hoist chains

Load Testing

- Newly installed cranes and hoists shall be load tested at 125% of the rated capacity by designated personnel.
- Slings shall have appropriate test data when purchased. It is the responsibility of the purchaser to ensure that the appropriate test data is obtained and maintained.
- Re-rated cranes and hoists shall be load tested to 125% of the new capacity if the new rating is greater than the previous rated capacity.
- Fixed cranes or hoists that have had major modifications or repair shall be load tested to 125% of the rated capacity.
- Cranes and hoists that have been overloaded shall be inspected prior to being returned to service.
- Personnel platforms, baskets, and rigging suspended from a crane or hoist hook shall be load tested initially, then re-tested annually thereafter or at each new job site.
- All cranes and hoists with a capacity greater than 2722 kg (3 tons) should be load tested every four years to 125% of the rated capacity. Cranes and hoists with a lesser capacity should be load tested every eight years to 125% of the rated capacity.
- All mobile hoists shall be load tested at intervals to be determined by department head or designee.

Records

Safety office shall maintain records for all cranes, hoist and rigging equipment. Pre-use shall be maintained by the department.

Pre-Use records are maintained by the department.

Powered Industrial Truck Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

Material handling is a significant safety concern. During the movement of products and materials, there are numerous opportunities for personal injury and property damage if proper procedures and caution are not used. This chapter applies to all powered industrial trucks, hoists and lifting gear. The information in this chapter shall be used to train prospective industrial truck operators and provide the basis for refresher and annual retraining. OSHA reference for Powered Industrial Trucks is 29 CFR 1910.178 or www.OSHA.gov.

Responsibilities:

Management

- Provide adequate training in safe operation of all equipment used to move or access materials
- Provide equipment that is safe to operate
- Implement an “Out of Service” program for damaged equipment
- Prohibit modification to equipment except by those authorized in writing by the equipment manufacturer
- Establish safe operating rules and procedures

Supervisors

- Monitor safe operations of material handling equipment
- Ensure all equipment is safety checked daily
- Tag "Out of Service" any damaged equipment

Employees

- Operate only that equipment for which they have been specifically trained and authorized
- Conduct required daily pre-use inspections
- Report any equipment damage or missing safety gear
- Follow all safety rules and operating procedures

Hazards

- Falling loads
- Overloading of equipment
- Impact with equipment
- Piercing of containers
- Loading dock roll off
- Chemical contact - battery acid
- Fires during refueling

Hazard Controls

- Control of equipment keys
- Authorized fueling and recharge areas
- Proper palletizing of material
- Marked travel lanes
- Equipment warning lights
- Seat belts
- Mounted fire extinguishers

Training

Training for PIT operators shall be conducted by an experienced operator selected by the safety manager. All operational training shall be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a PIT (forklift, etc) without continual and close supervision.

Trainees may operate a powered industrial truck only:

- Under the direct supervision of persons selected by management who have the knowledge, training, and experience to train operators and evaluate their competence; and
- Where such operation does not endanger the trainee or other employees.

Training Content:

Training consists of a combination of formal instruction, practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

Initial Training:

Truck-related training topics

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate
2. Differences between the truck and the automobile

3. Truck controls and instrumentation: where they are located, what they do, and how they work
4. Engine or motor operation
5. Steering and maneuvering
6. Visibility (including restrictions due to loading)
7. Fork and attachment adaptation, operation, and use limitations
8. Vehicle capacity
9. Vehicle stability
10. Any vehicle inspection and maintenance that the operator will be required to perform
11. Refueling and/or charging and recharging of batteries
12. Operating limitations
13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate.

Workplace-related topics:

1. Surface conditions where the vehicle will be operated
2. Composition of loads to be carried and load stability
3. Load manipulation, stacking, and un-stacking
4. Pedestrian traffic in areas where the vehicle will be operated
5. Narrow aisles and other restricted places where the vehicle will be operated
6. Hazardous (classified) locations where the vehicle will be operated
7. Ramps and other sloped surfaces that could affect the vehicle's stability
8. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust
9. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation

Refresher training and evaluation:

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted **every 3 years** to ensure that the operator has the knowledge and skills needed to operate the powered industrial truck safely. Refresher training in relevant topics shall be provided to the operator when:

1. The operator has been observed to operate the vehicle in an unsafe manner
2. The operator has been involved in an accident or near incident
3. The operator has received an evaluation that reveals that the operator is not operating the truck safely
4. The operator is assigned to drive a different type of truck
5. A condition in the workplace changes in a manner that could affect safe operation of the truck

Once every 3 years, an evaluation will be conducted of each powered industrial truck operator's performance.

Safe Operating Procedures (SOP) and Rules:

- Only authorized and trained personnel will operate PITs.
- All PITs will be equipped with a headache rack, fire extinguisher, rotating beacon, back-up alarm and seat belts. Seat belts will be worn at all times by the operator.
- The operator will perform daily pre-trip and post-trip inspections.
- Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; and/or missing fire extinguisher, lights, seat belt, or back-up alarm) will be reported for immediate repair or have the PIT taken out of service.
- Operators will follow the proper recharging or refueling safety procedures.
- Loads will be tilted back and carried no more than 6 inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- PITs will travel no faster than 5 mph or faster than a normal walk.
- Hard hats will be worn by PIT operators in high lift areas.
- Operator will sound horn and use extreme caution when meeting pedestrians, making turns and cornering.
- Passengers may not ride on any portion of a PIT. Only the operator will ride PITs. "NO PASSENGERS" decals will be affixed on all PITs.
- If PITs are used as a man lift, an appropriate man lift platform (cage with standard rails and toe-boards) must be used.
- Aisle will be maintained free from obstructions, marked and wide enough (6 foot minimum) for vehicle operation.
- Lift capacity will be marked on all PITs. Operator will assure load does not exceed rated weight limits.
- When unattended, PITs will be turned off, forks lowered to the ground and parking brake applied.
- All PITs (with exception of pallet jacks) will be equipped with a multi-purpose dry chemical fire extinguisher. (Minimum rating; 2A:10B:C).
- Operators are instructed to report all accidents, regardless of fault and severity, to management. Management will conduct an accident investigation.
- When loading rail cars and trailers, dock plates will be used. Operators will assure dock plates are in good condition and will store on edge when not in use.
- Trailers will be parked squarely to the loading area and have wheels chocked in place. Operators will follow established docking/undocking Procedures.

Changing and Charging Storage Batteries

- Battery charging installations shall be located in areas designated for that purpose.
- Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.
- A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.
- Reinstalled batteries shall be properly positioned and secured in the truck.
- A carboy tilter or siphon shall be provided for handling electrolyte.
- When charging batteries, acid shall be poured into water; water shall not be poured into acid.
- Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.

- Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.
- Smoking is prohibited in the charging area.
- Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.
- Tools and other metallic objects shall be kept away from the top of uncovered batteries.

Operations

- If at any time a PIT is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.
- Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.
- Unauthorized personnel shall not be permitted to ride on powered industrial trucks.
- Arms or legs shall not be placed between the uprights of the mast or outside the running lines of the truck.
- When a PIT is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.
- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, platform or freight car. Trucks shall not be used for opening or closing freight doors.
- There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application but not to withstand the impact of a falling capacity load.
- A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.
- Trucks shall not be parked so as to block fire aisles, access to stairways, or fire equipment.

Traveling

- All traffic regulations shall be observed, including authorized speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.
- The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.
- Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.
- The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

- Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.
- The driver shall be required to look in the direction of, and keep a clear view of the path of travel.
- Grades shall be ascended or descended slowly. When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade. On all grades the load and load engaging means shall be tilted back if applicable and raised only as far as necessary to clear the road surface.
- Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Stunt driving and horseplay shall not be permitted.
- The driver shall be required to slow down for wet and slippery floors.
- Dock board or bridge plates shall be properly secured before they are driven over. Dock board or bridge plates shall be driven over carefully and slowly and their rated capacity never exceeded.
- Running over loose objects on the roadway surface shall be avoided.
- While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

Loading

- Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.
- Only loads within the rated capacity of the truck shall be handled.
- The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.
- Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.
- A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when maneuvering loads. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or maneuvering loads, only enough backward tilt to stabilize the load shall be used.

Fueling Safety

- Fuel tanks shall not be filled while the engine is running. Spills shall be avoided.
- Spills of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.
- No truck shall be operated with a leak in the fuel system until the leak has been fixed.
- Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

Maintenance of PITs

- Any PIT not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.
- Those repairs to the fuel and ignition systems of PITs which involve fire hazards shall be conducted only in locations designated for such repairs.
- PITs in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.
- All parts of any such PIT requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.
- PITs shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional counter-weighting of fork trucks shall not be done unless approved by the truck manufacturer.
- PITs shall be examined before being placed in service and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where PITs are used on a round-the-clock basis, they shall be examined prior to use each shift. Defects, when found, shall be immediately reported and corrected.
- When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.
- PITs shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100°F.) solvents shall not be used. High flash point (at or above 100° F.) solvents may be used.

Safe Operation Procedure for Charging LPG Tank

1. No smoking.

2. Move LPG PIT outside for refueling.

3. Turn off PIT.

4. LPG tanks will be removed in the following order:

    -shut off service valve

    -disconnect tank from hose

    -unbuckle and remove tank from bracket

5. LPG tanks will be replaced in the following order:

-place tank in bracket and re-buckle

-reconnect hose to tank and tighten firmly

-open valve slowly and assure proper seal

NOTE: Federal law prohibits dispensing an improper fuel type into any vehicle or into a non-approved fuel container.

In Case of LPG Leaks or Tank Rupture

1. *DO NOT start or move the PIT.*

2. If fuel hose is leaking, close valve immediately and place PIT out of service until repaired.

3. If tank ruptures, warn others, immediately leave the area (at least 50 feet) and notify management. Do not re-enter the area until cleared by management.

PIT Pre-Use Checklist

A check of the following items (as applicable) is to be conducted by the operator prior to use each shift.

- Lights
- Horn
- Brakes
- Leaks
- Warning Beacon
- Backup Warning Alarm
- Fire Extinguisher

***If any deficiencies are noted, the unit is to be placed out of service with a specified “out of service” tag until the problem has been corrected. Additionally, it is the operator’s responsibility to notify the immediate supervisor and fill out a maintenance request.

Machine Guarding Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The Machine Guard Program is designed to protect Employees from hazards of moving machinery. All hazardous areas of a machine shall be guarded to prevent accidental "caught in" situations. References: General Requirements for all Machines (29 CFR 1910.212), Woodworking Machinery (29 CFR 1910.213), Abrasive Wheels (29 CFR 1910.215), Power Presses (29 CFR 1910.217), Power Transmission (29 CFR 1910.219). These requirements can also be found at www.OSHA.gov.

Responsibilities:

Management

- Ensure all machinery is properly guarded
- Provide training to employees on machine guard rules
- Ensure new purchased equipment meets the machine guard requirements prior to use

Supervisors

- Train assigned employees on the specific machine guard rules in their areas
- Monitor and inspect to ensure machine guards remain in place and functional
- Immediately correct machine guard deficiencies

Employees

- Do not remove machine guards unless equipment is locked and tagged
- Replace machine guards properly
- Report machine guard problems to supervisors immediately
- Do not operate equipment unless guards are in place and functional

Hazards

The use of machinery or equipment with inadequate guards or damaged controls can result in:

- Amputation
- Skin Burns
- Cuts & fractures
- Death

Hazard Controls - controls used to prevent exposure to moving or energized machine parts includes:

- Machine guards
- Interlocks
- Presence sensing devices
- Gates
- Two-hand controls
- Employee training

Machine Guarding Requirements

1. Guards shall be affixed to the machine where possible and secured.

2. A guard shall not offer an accident hazard in itself.

3. The point-of-operation of machines whose operation exposes an employee to injury shall be guarded.

4. Revolving drums, barrels and containers shall be guarded by an enclosure which is interlocked with the drive mechanism.

5. When periphery of fan blades are less than 7 feet above the floor or working level the blades shall be guarded with a guard having openings no larger than 1/2 inch.

6. Machines designed for a fixed location shall be securely anchored to prevent walking or moving. For example; Drill Presses, Bench Grinders, etc.

General Requirements for Machine Guards

1. Guards must prevent hands, arms or any part of an employee's body from making contact with hazardous moving parts. A good safeguarding system eliminates the possibility of the operator or other employees from placing parts of their bodies near hazardous moving parts.

2. Employees should not be able to easily remove or tamper with guards. Guards and safety devices should be made of durable material that will withstand the conditions of normal use and must be firmly secured to the machine.

3. Guards shall ensure that no objects can fall into moving parts. An example would be a small tool which is dropped into a cycling machine could easily become a projectile that is capable of causing injury.

4. Guard edges should be rolled or bolted in such a way to eliminate sharp or jagged edges.

5. Guard should not create interference which would hamper employees from performing their assigned tasks quickly and comfortably.

6. Lubrication points and feeds should be placed outside the guarded area to eliminate the need for guard removal.

Training

All employees shall be provided training in the hazards of machines and the importance of proper machine guards. Machine safety and machine guarding rules will be thoroughly explained as part of the New Hire Orientation Program and annual refresher safety training.

Definitions:

Guards: Barriers that prevent employees from contact with moving portions or parts of exposed machinery or equipment which could cause physical harm to the employees.

Enclosures: Mounted physical barriers which prevent access to moving parts of machinery or equipment.

Point-of-Operation: The area on a machine or item of equipment, where work is being done and material is positioned for processing or change by the machine.

Power Transmission: Any mechanical part which may transmit energy and motion from a power source to the point-of-operation. Example: Gear and chain drives, cams, shafts, belt and pulley drives and rods. NOTE: Components which are (7) feet or less from the floor or working platform shall be guarded.

Nip Points: In-running machine or equipment parts, which rotate towards each other, or where one part rotates toward stationery objects.

Shear points: The reciprocating (back and forth) movement of a mechanical part past a fixed point on a machine.

Rotating Motions: Any exposed mechanism is dangerous unless it is guarded. Even a smooth, slowly rotating shaft or coupling can grasp clothing or hair upon contact with the skin and force an arm or hand into a dangerous position. Affixed or hinged guard enclosure protects against this exposure.

Reciprocating: Reciprocating motions are produced by the back and forth movements of certain machine or equipment parts. This motion is hazardous, when exposed, offering pinch or shear points to an employee. A fixed enclosure such as a barrier guard is an effective method against this exposure.

Transverse Motions: Transverse motions are hazardous due to straight line action and in-running nip points. Pinch and shear points also are created with exposed machinery and equipment parts operating between a fixed or other moving object. A fixed or hinged guard enclosure provides protection against this exposure.

Cutting Actions: Cutting action results when rotating, reciprocating, or transverse motion is imparted to a tool so that material being removed is in the form of chips. Exposed points of operation must be guarded to protect the operator from contact with

cutting hazards, being caught between the operating parts and from flying particles and sparks.

Shearing Action: The danger of this type of action lies at the point of operation where materials are actually inserted, maintained and withdrawn. Guarding is accomplished through fixed barriers, interlocks, remote control placement (2 hand controls), feeding or ejection.

Electrical Safety Program

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The Electrical Safety program is designed to prevent electrically related injuries and property damage. This program also provides for proper training of maintenance employees to ensure they have the requisite knowledge and understanding of electrical work practices and procedures. Only employees qualified in this program may conduct adjustment, repair or replacement of electrical components or equipment. Electricity has long been recognized as a serious workplace hazard, exposing employees to such dangers as electric shock, electrocution, fires and explosions. References: NFPA 70E, Electrical Safety Requirements for Employee Workplaces, National Electrical Code (NEC) and OSHA Standard (Electrical Safety) 29 CFR 1910.331 to 1910.339. These standards can also be found at www.OSHA.gov.

Responsibilities:

Management

- Provide training for qualified and unqualified employees
- Conduct inspections to identify electrical safety deficiencies
- Guard and correct all electrical deficiencies promptly
- Ensure all new electrical installations meet codes and regulations

Employees

- Report electrical deficiencies immediately
- Not work on electrical equipment unless authorized and trained
- Properly inspect all electrical equipment prior to use

Hazard Control

Engineering Controls

- All electrical distribution panels, breakers, disconnects, switches, junction boxes shall be completely enclosed
- Water tight enclosure shall be used where there is possibility of moisture entry either from operations or weather exposure

- Electrical distribution areas will be guarded against accidental damage by locating in specifically designed rooms, use of substantial guard posts and rails and other structural means
- A clear approach and 3 foot side clearance shall be maintained for all distribution panels.
- All conduits shall be fully supported throughout its length. Non-electrical attachments to conduit are prohibited.
- All non-rigid cords shall be provided strain relief where necessary.

Administrative Controls

- Only trained and authorized employees may conduct repairs to electrical equipment
- Contractors performing electrical work must have a license for the rated work
- Areas under new installation or repair will be sufficiently guarded with physical barriers and warning signs to prevent unauthorized entry
- Access to electrical distribution rooms is limited to those employees who have a need to enter
- All electrical control devices shall be properly labeled
- Work on energized circuits is prohibited unless specifically authorized by senior facility management
- All qualified employees will follow established electrical safety procedures and precautions

Personal Protective Equipment

- Qualified employees will wear electrical rated safety shoes/boots
- All tools used for electrical work shall be properly insulated
- Electrical rated gloves shall be available for work on electrical equipment
- Electrically rated matting will be installed in front of all distribution panels in electric utility rooms

Electrical Equipment

Examination

Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined using the following considerations:

- Suitability for installation and use in conformity with the provisions of this subpart. Suitability of equipment for an identified purpose may be evidenced by listing or labeling for that identified purpose.
- Mechanical strength and durability for parts designed to enclose and protect other equipment and the adequacy of the protection thus provided.
- Electrical insulation.

- Heating effects under conditions of use.
- Arcing effects.
- Classification by type, size, voltage, current capacity, and specific use.
- Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

Identification of Disconnecting Means and Circuits

Each disconnecting means for motors and appliances shall be legibly marked to indicate its purpose. Each service, feeder, and branch circuit, at its disconnecting means or over-current device, shall be legibly marked to indicate its purpose. These markings shall be of sufficient durability to withstand the environment involved.

A disconnecting means is a switch that is used to disconnect the conductors of a circuit from the source of electric current. Disconnect switches are important because they enable a circuit to be opened, stopping the flow of electricity, and thus can effectively protect workers and equipment.

Each disconnect switch or over-current device required for a service, feeder, or branch circuit must be clearly labeled to indicate the circuit's function, and the label or marking should be located at the point where the circuit originates. For example, on a panel that controls several motors or on a motor control center, each disconnect must be clearly marked to indicate the motor to which each circuit is connected.

All labels and markings must be durable enough to withstand weather, chemicals, heat, corrosion, or any other environment to which they may be exposed.

Definition of Terms:

Qualified Employee: Only employees that have completed electrical competency testing.

Unqualified Employee: Employees who have not been trained or authorized by management to conduct electrical work.

Training

Training for Unqualified Employees

Training for unqualified employees is general electrical safety precautions. The purpose of this is to provide an awareness and understanding of electrical hazards.

Electrical Safety Rules for Non-Qualified Workers

1. Do not conduct any repairs to electrical equipment

2. Report all electrical deficiencies to your supervisor

3 Do not operate equipment if you suspect any electrical problem

4. Water and electricity do not mix

5. Even low voltages can kill or injure you

6. Do not use cords or plugs if the ground prong is missing

7. Do not overload electrical receptacles

Training for Qualified Employees

Training for Qualified Employees includes specific equipment procedures and requirements of:
Electrical Safety, 29 CFR 1910.331 to 1910.339

Personal Protective Equipment

Employees working in areas where the potential contact with exposed electrical sources is present and likely, will be provided and shall use Personal Protective Equipment (PPE). The following rules apply to the use and care of PPE:

1. PPE shall be used where contact with exposed electrical sources are present and likely.

2. PPE shall be designed for the work being performed and environment in which it is used.

3. PPE shall be visually inspected and/or tested before use. Any defects or damage shall be replaced, repaired or discarded.

4. In cases where the insulating capabilities of the PPE may be damaged during the work, a protective outer cover, such as leather, must be used.

5. Employees shall wear non-conductive head protection wherever there is a danger of injury from electrical burns or shock from contact with exposed energized parts.

6. Employee shall wear protective eye/face equipment whenever there is a danger from electrical arcs or flashes or from flying objects resulting from an electrical explosion.

Electrical Lockout & Tagout Requirements

Application of locks and tags

A lock and a tag shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed, except as provided for below.

1. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

2. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

3. If a lock cannot be applied, a tag may be used without a lock.

4. A tag used without a lock must be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

5. A lock may be placed without a tag only under the following conditions:

A. Only one circuit or piece of equipment is de-energized, and

B. The lockout period does not extend beyond the work shift, and

C. Employees exposed to the hazards associated with reenergizing the circuit or equipment must be familiar with this procedure.

Working at Elevated Locations

Any person working on electrical equipment while on a crane or other elevated work surface must take necessary precautions to prevent a fall from reaction to electrical shock or other causes. A second person, knowledgeable as a safety watch, must assume the best possible position to assist the worker in case of an accident. Portable ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized parts. See the *Fall Protection* section of this manual for further details.

General Protective Equipment and Tools

General Protective Equipment and Tools shall be used when in the proximity of, or working on, exposed energized parts. The following rules apply:

1. When working on or near exposed energized parts, Qualified Employees shall use insulated tools or handling equipment suitable for the voltage present and working

environment. In cases where the insulation may be damaged, a protective outer layer should be employed.

2. Fuse handling equipment, insulated for the circuit voltage, shall be used to remove or install fuses when the terminal is energized.

3. Ropes and other hand lines used near exposed energized equipment shall be non-conductive.

Warnings and Barricades

Warnings and barricades shall be employed to alert unqualified employees of the present danger related to exposed energized parts. The following rules apply:

1. Safety signs, warning tags, etc., must be used to warn unqualified employees of the electrical hazards present, even temporarily, that may endanger them.

2. Non-conductive barricades shall be used with safety signs to prevent unqualified employees access to exposed energized parts or areas.

3. Where barricades and warning signs do not provide adequate protection from electrical hazards, an attendant shall be stationed to warn and protect employees.

Powered Equipment Safety Rules

Electrical equipment is defined as cord or plug-type electrical device which includes the use of flexible or extension cords. Examples of portable electrical equipment include powered hand tools, powered bench tools, fans, radios, etc. The following safety rules apply to portable electrical equipment (PEE):

1. PEE shall be handled in such a manner as to not cause damage. Power cords may not be stapled or otherwise hung in a way that may cause damage to the outer jacket or insulation.

2. PEE shall be visually inspected for damage, wear, cracked or spilt outer jackets or insulation, etc., before use or before each shift. Any defects; such as cracked or split outer jackets or insulation must be repaired, replaced or placed out of service.

3. Always check the compatibility of cord sets and receptacles for proper use.

4. Ground type cord sets may only be used with ground type receptacles when used with equipment requiring a ground type conductor.

5. Attachment plugs and receptacle may not be altered or connected in a way that would prevent the proper continuity of the equipment grounding conductor. Adapters may not be used if they interrupt the continuity of the grounding conductor.

6. Only portable electrical equipment that is double insulated or designed for use in areas that are wet or likely to contact conductive liquids may be used.

7. Employees that are wet or have wet hands may not handle PEE (plug-in, un-plug, etc.). Personal protective equipment must be used when handling PEEs that are wet or covered with a conductive liquid.

8. Locking-type connectors shall be properly secured after connection to a power source.

Electrical Circuit Safety Procedures

Electrical power and lighting circuits are defined as devices specifically designed to connect, disconnect or reverse circuits under a power load condition. When these circuits are employed, the following rules apply:

1. Cable connectors (not of load-break type) fuses, terminal plugs or cable splice connectors may not be used, unless an emergency, to connect, disconnect or reverse in place of proper electrical circuits.

2. After a protective circuit is disconnected or opened, it may not be connected or closed until it has been determined that the equipment and circuit can be safely energized.

3. Over current protectors of circuits or connected circuits may not be modified, even on a temporary basis, beyond the installation safety requirements.

4. Only Qualified Employees may perform tests on electrical circuits or equipment.

5. Test equipment and all associated test leads, cables, power cords, probes and connectors shall be visually inspected for external damage before use.

6. Any damage or defects shall be repaired before use or placed out of service.

7. Test equipment shall be rated to meet or exceed the voltage being tested and fit for the environment in which it is being used.

8. Where flammable or ignitable materials are stored, even occasionally, electrical equipment capable of igniting them may not be used unless measures are taken to prevent hazardous conditions from developing.

Standard Operating Procedures

Electrical Pre-Work Procedure

Except in extreme cases, work on electrical equipment will be done with all electrical circuits in the work area de-energized by following the Lockout/Tagout procedure. When working on or near energized electrical circuits with less than 30 volts to ground, the equipment need not be de-energized if there will be no increased exposure to electrical burns or to explosion from electric arcs.

To prepare for work on electrical systems or components, the following procedure applies:

Caution: Treat all electrical circuits as "LIVE" until they have been Tagged and Locked Out and tested by the following procedure.

1. Obtain permission from supervisor to conduct work.

2. Lockout and Tagout all sources of electrical power.

3. Verify de-energized condition before any circuits or equipment are considered and worked as de-energized.

    A. A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

    B. Verify proper operation of the Voltmeter at a live electrical source of the same rated voltage as the circuit to be worked.

    C. Using the Voltmeter, check all exposed circuits phase to phase and phase to ground for evidence of voltage/current in the circuit.

    D. Conduct work on the circuit only after determining that there is no voltage in any of the exposed circuits.

    E. If voltage is detected in any exposed circuit, STOP, inform supervisor and determine source and procedure to eliminate voltage.

4. Conduct work.

5. Close up all exposed circuits, boxes, controls, equipment.

6. Remove Lockout/Tagout.

7. Obtain supervisor permission to energize circuits.

Standard Operating Procedure

Working on or Near Exposed Energized Circuits

In the rare situation when energized equipment (or working in near proximity to energized equipment) cannot be de-energized, the following work practices must be used to provide protection:

Caution: Unqualified Employees are prohibited from working on or near exposed energized circuits.

1. Obtain permission from the Safety Manager to work on or near energized electrical circuits.

2. Lockout and Tagout all circuits possible.

3. Treat all circuits as energized.

4. Remove all conductive clothing and jewelry (rings, watches, wrist/neck chains, metal buttons, metal writing instruments, etc.).

5. Use proper personal protective equipment, shields and/or barriers to provide effective electrical insulation from energized circuits. This may include electrically rated insulated gloves, aprons, rubber soled shoes, insulated shields, insulated tools, etc.

6. Provide adequate lighting. Do not enter areas with exposed energized parts unless illumination (lighting) is provided so that employee may work safely. Do not reach around obstructions of view or lighting (blindly) into areas where exposed energized parts are located.

7. Employees entering a Confined Space with exposed energized parts must use protective barriers, shields, or equipment or insulated materials rated at or above the present voltage to avoid contact.

8. Doors or other hinged panels shall be constructed and secured to prevent them from swinging into an employee and causing contact with exposed energized parts.

9. Housekeeping in areas of exposed energized parts may not be completed in areas with close contact unless adequate safeguards (insulation equipment or barriers) are present. Conductive cleaning material (Steel Wool, Silicon Carbide, etc.) or liquids may not be used unless procedures (Lock and Tag Out, etc.) are in place and followed.

10. Station a safety observer outside work area. The sole function of this person is to quickly de-energize all sources of power or pull worker free from electrical work area with a non-conductive safety rope if contact is made with an energized electrical circuit.

11. A person qualified in CPR must be readily available to the scene.

Standard Operating Procedure

Re-energizing Electrical Circuits after Work Completed

These requirements shall be met, in the order given, before circuits or equipment is reenergized, even temporarily.

1. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

2. Warn employees exposed to the hazards associated with reenergizing the circuit or equipment to stay clear of circuits and equipment.

3. Remove each lock and tag. They shall be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent from the workplace, then the lock or tag may be removed by a qualified supervisor designated to perform this task provided that:

A. The supervisor ensures that the employee who applied the lock or tag is not available at the workplace.

B. The supervisor ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.

4. Conduct a visual determination that all employees are clear of the circuits and equipment.

Compressed Gas/Air Cylinder Storage

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Purpose:

The purpose of this program is to provide information on proper storage of compressed gas/air cylinders.

Scope:

This applies to the storage of compressed gas cylinders used at the City of Murray. (Compliant with OSHA's 1910.101 regulation)

Definitions:

Storage: The stowing of a compressed gas/air cylinder at the completion of the job, or the end of the shift.

Compressed gas: A gas or mixture of gases having an absolute pressure exceeding 40 psi at 70 degrees F (21.1 degrees C); or, a gas or mixture of gases having an absolute pressure exceeding 104 psi at 130 degrees F (54.4 degrees C) regardless of the pressure at 70 degrees F; or, a liquid having a vapor pressure exceeding 40 psi at 100 degrees F (37.8 degrees C) as determined by ASTM D-323-72.

Flammable gas: A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or, a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit; or, one for which the United States Department of Transportation (DOT) requires their red flammable gas label or is labeled as Division 2.1.

Oxidizer gas: A gas that is nonflammable but can support and vigorously accelerate combustion in the presence of an ignition source and a fuel or is labeled by the DOT as Division 2.2 and Division 5.1 (Oxidizer).

Work Instruction Steps:

General Requirements:

- The contents of any compressed gas/air cylinder (including breathing air bottles) must be clearly identified. The identification should be stenciled or stamped on the cylinder itself.
- Compressed gas/air cylinders that are missing a label and whose contents cannot be

identified shall be reported to supervisor immediately.
- Never rely on the color of the cylinder for identification. Cylinder colors vary from supplier to supplier.

Usage Requirements:

- Before using a cylinder, slowly "crack" the valve to clear dust or dirt, being sure the opening is not pointed toward anyone. Do not stand in front of the regulator gauge glass when opening the valve.
- Never use a cylinder without a regulator. Always use the correct pressure regulator.
- Spark-proof tools should be used when working with flammable gas cylinders.
- Never force a cap or regulator. The cap should be hand tight.
- Never use a leaking, corroded or damaged cylinder. Remove the cylinder from service and contact the supplier for return.

Transportation Requirements:

*****This does not include breathing air bottles.**

- To protect the valve during transportation, the cover cap should be screwed on hand tight and remain on until the cylinder is in place and ready for use.
- Cylinders should never be rolled or dragged.
- Cylinders must be secured in a positive fashion with straps or chains while being transported and when in motor vehicles.
- Use a cradle for hoisting, never a lifting magnet or sling.

Storage Requirements:

- Cylinder storage areas must be prominently posted with the names and hazard class of the gases to be stored. **This does not include breathing air bottles.**
- Cylinders not “in use” should be stored in the designated area with regulator removed and stem cap in place. **This does not include breathing air bottles.**
- Flammable gases must be stored in well-ventilated areas away from flammable liquids, combustible materials, oxidizers, open flames, sparks and other sources of heat or ignition. A distance of 20-25 feet or a noncombustible barrier at least 18 inches above the tallest container, but not less than 5 feet and laterally not less than 18 inches beyond the sides of the containers and having a fire rating of at least ½ hour is the minimum separation requirement.
- Cylinders stored outside must be protected against extremes of weather and combustible waste and vegetation must be kept a minimum of 10 feet from the cylinders.
- Do not store near elevators or gangways, or in locations where heavy moving objects may strike or fall on them.
- Portable fire extinguishers (carbon dioxide or dry chemical type) must be available for fire emergencies where flammable gas is stored.

Work Zone Traffic Control

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This Work Zone Traffic Control Program applies to all city employees that work in or around traffic areas.

Purpose:

The City of Murray guide for work area traffic control sets forth principles and guidelines for safe and efficient movement of traffic and the protection of workers at street and highway construction, maintenance and utility work areas. The primary control of traffic procedures is to move vehicles and pedestrians safely and expeditiously through and around work areas.

Authority:

U.S. Department of Transportation (DOT) Federal Highway Administration

Policy:

The Work Zone Traffic Control Program is under the direct control of the Department Directors, with the Supervisor of each department as his personal representative, under the supervision of the Safety Department.

Procedure

Cone Design – Cone designs shall be a minimum of 18” in height during the daytime hours, and 28” during the nighttime. Orange shall be the predominate color of the cones. They should be kept clean for maximum visibility. For cones being used in the nighttime, a 2”-3” wide white reflector band shall be placed a maximum of 2” from the top of the cone and no more than 6” in between. Spacing of the cones shall be at a maximum of 10’-20’, with no fewer than 5 devices used in the taper; or close enough to present a continuous line, even when some devices are knocked down.

Barricades

Type I or Type II barricades are intended for use in situations where traffic is maintained through the area being constructed and/or reconstructed. They may be used alone or in groups to mark a specific hazard or they may be used in a series for channelizing traffic. Type I barricades would be used on urban streets and aerials.

Where maintenance activities are being performed, a street or highway condition is seldom of a character that will require a complete closing. When such a condition does occur, it is almost

always an emergency situation, as would result from a broken water main or gas leak. Repair work is generally initiated on an emergency basis and the street or road closing generally is of a kind where a Type I is used.

Type III barricades are used on construction and maintenance where the road is closed. When Type III barricades are used, but have to be left open so equipment and certain traffic can have access, signs shall be placed on the barricades.

Construction and maintenance zones often encroach into sidewalks or crosswalks, necessitating provisions for alternative routing. Where it is not possible to close the path and divert pedestrians to other walkways, barricades may be needed to define the path. Flashers may be needed for nighttime use.

High Visibility Safety Apparel

All workers, including emergency responders, within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to work vehicles and construction equipment along the right of way shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 (Class 2: 25-50mph; Class 3: greater than 50 mph) requirements of the ANSI/ISEA 107–2004 publication entitled “American National Standard for High-Visibility Safety Apparel and Headwear” (see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI 107-2004 standard performance for Class 2 or 3 risk exposure.

***Police Officers shall wear high-visibility garments while performing duties that involve directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters within the right-of-way as stated on page 67797 of the Federal Register (Vol.71, No 226).

Sign Function and Design Characteristics

Construction, maintenance and utility signage make use of the same three categories as do other signs; namely Regulatory, Warning and Guide signs. Many signs other than those developed especially for construction and maintenance activities will find applications at work zones. Special Construction and Maintenance signs follow the same basic standards as for all highway signs as to shape.

Regulatory signs impose legal obligations and/or restrictions on all traffic. If construction and maintenance operations require regulatory measures different from those normally in effect, the existing permanent regulatory devices must be removed or covered up, and superseded by appropriate temporary regulatory signs.

Examples:

Regulatory signs; STOP, YIELD, WRONG WAY, DO NOT ENTER.

Warning signs are used to notify drivers of specific hazards which may be encountered.

Guide Signs are used to indicate routing changes due to construction and maintenance.

As a general rule, signs are placed on the right hand side of the road. Regulatory signs are generally placed at the point where the regulation applies. Guide signs, on the other hand are placed in advance, at the point where the action is required. Warning signs are generally placed in advance of the hazard or action point to provide adequate time for precaution and response.

Adequate sign placing varies directly with speed. 500 foot sign spacing is generally appropriate for rural highways. Spacing on the order of a few hundred feet may be used on low speed urban streets.

Flaggers

Because flaggers are responsible for public safety and make the greatest number of contacts with the public of all highway workers, they should be trained in safe traffic control practices and public contact techniques. Flaggers should be able to satisfactorily demonstrate the following abilities:

A. Ability to receive and communicate specific instructions clearly, firmly, and courteously;
B. Ability to move and maneuver quickly in order to avoid danger from errant vehicles;
C. Ability to control signaling devices (such as paddles and flags) in order to provide clear and positive guidance to drivers approaching a zone in frequently changing situations;
D. Ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations; and
E. Ability to recognize dangerous traffic situations and warn workers in sufficient time to avoid injury.

The STOP/SLOW signs provide motorist with more positive guidance than flags and should be the primary hand signaling device, except in emergency situations.

Flaggers shall wear approved safety vest that is of reflective type and use approved flags and/or paddles. Flaggers shall be placed at each end of the tapering or channelizing to intermittently stop the flow of traffic and keep from having head on collisions. Work-ahead signs shall be placed approximately 100’ before tapering or flaggers when speed limit is 20 mph or less; for every 5 mph over that add 5’ to the distance.

Table-Stopping Sight Distance as a Function of Speed
Speed* Distance
20 mph- 115 feet
25 mph- 155 feet
30 mph- 200 feet
35 mph- 250 feet
40 mph- 305 feet
45 mph- 360 feet
50 mph- 425 feet
55 mph- 495 feet
60 mph- 570 feet
65 mph- 645 feet
70 mph- 730 feet
75 mph- 820 feet
* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Flagger Stations

Flagger shall be located far enough in advance of the worksite so that approaching traffic will have sufficient distance to reduce speed before entering the project. This distance is related to approach speed and physical conditions at the site. Located on the right is a chart of proper flagger distances according to the speed limit of that zone

The flagger should stand either on the shoulder adjacent to the traffic being controlled or in the barricaded lane. Under no circumstance should a flagger stand in the area being used by moving traffic. The flagger should be clearly visible to approaching traffic at all times. For this reason the flagger should stand alone, never permitting a group of workers to congregate around the flagger station. The flagger should be stationed sufficiently in advance of the work force to warn them of approaching danger, such as out of control vehicles.

At short constructions and maintenance lane closures where adequate sight distances are available for the safe handling of traffic, the use of one flagger may be sufficient.

Advanced Warning Area

Advanced warning areas shall be established prior to the beginning of any job. The section of roadway near the work area should inform upcoming traffic of the work zone. This may vary from signs, cones, lights, or a combination. A general rule to use when properly placing these warning devices is to first place warning 4-8 times the speed limit. For example: when working in an area with a 55 mph speed limit, the beginning of the warning area should be at least 220 feet from where the work is being performed.

Work Zone Installation and Removal

Channelizing devices should be installed in an orderly and expeditious manner. Start placing devices going downstream or with the flow of traffic. Removal is done in reverse order.

1. Set up flaggers ahead and “Construction Ahead” signs at two-hundred feet in local streets, and 500 feet for highways and expressways.
2. Set up flaggers; one at the beginning of the tapering and the other at the end of the tapering.
3. Place channeling devices in a taper method going downstream with the flow of traffic. Use a minimum of five devices.
4. Tapering should not exceed a maximum of 100’ when speeds are less than 40 mph.
5. Removal of work zone traffic control devices are done in reverse order.
6. Work vehicles shall not back up in an open line. Thus, the final procedure in the removal procedure, the advance warning signs located upstream of the closure area may be picked up in the direction of traffic.

Worksite Traffic Supervisor

For each project, the crew supervisor will be assigned the responsibility for traffic control. On a construction project, someone should be designated who can be reached on a 24 hour basis for emergency services. When the responsibility for maintenance and servicing of traffic controls is subcontracted, an employee of the traffic services company should be so named.

Notify if roads or streets are to be closed.

1. Street Superintendent (Andrus Drive) - (270-762-0336)
2. Dispatch- (762-0310)
3. Ambulance Service – (753-9332)
4. Fire Department – (762-0320) or (762-0321)
5. Police Department – (753-1621)

This guide is based upon the current MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS (MUTCD). Published by the Federal Highway Administration; 2009 edition or current revision.

While the standards set forth in this guide are for the safety of the workers and motorists, it is just a minimum.

Fundamental Principles

Construction and maintenance activities on roads and streets often present motorists with unexpected and unusual situations. Principles and procedures which may enhance the safety of motorists and workers at work areas include the following:

1. Traffic Safety should be an integral and high priority element of every project from planning through design and construction.
2. Traffic should be routed through work areas with geometric and traffic control devices comparable to those employed for normal highway situations, insofar as possible.
3. Traffic movement should be inhibited as little as possible.
4. Motorists should be guided in a clear and positive manner while approaching and traveling the work area.
5. Routine inspection of the traffic control elements should be performed to ensure acceptable levels of traffic operations and device maintenance.
6. All persons responsible for the development, design, implementation, and inspection of traffic control shall be adequately trained.

Vehicle Safety

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This vehicle safety program applies to all city employees while operating city vehicles or equipment.

Purpose:

To minimize the risk of vehicular accidents involving City employees by improving the quality of drivers and permitting only those persons with safe driving records and who are physically fit to operate City automotive equipment. This directive defines the method for control of those procedures.

Policy:

The Vehicle Safety Program is under the direct control of the Department Directors, with the supervisors of each department as their personal representative.
Authority – Kentucky Department of Transportation, Commercial Motor Vehicle Safety Act of 1986, Department of Motor Vehicles and Highway Safety, Motor Vehicle Laws of Kentucky.

Responsibilities

Department Heads – Each Department head is responsible for ensuring the success of the Vehicle Safety Program in all departments under their control. Department Heads will:

a. Assure all immediate supervisors follow the procedures set for in this policy, and assure that training procedures are complied with.
b. Ensure proper disciplinary or commendatory actions are taken for employees involved in this Vehicle Safety Program; and review all disciplinary action prior to action being taken.
c. Assure that all City vehicles are used in their proper capacity.

Supervisors – All supervisors will be held directly responsible and accountable for monitoring the procedures of the policy. Performance reviews should reflect the vehicle/equipment operator's fleet safety performance.

a. Ensure that all operators of City owned vehicles and equipment are properly trained and road-tested, where applicable. Ensure that employees operate only those type (s) of vehicles in which they are authorized.

b. Ensure that all accidents are thoroughly investigated by the immediate supervisor involved and correctly reported to the Department Head. If it is not possible for the immediate supervisor to complete the investigation, then his/her supervisor or designee must investigate.
c. Classify accidents as 'avoidable' or 'unavoidable'.

Employees – All employees are required to:

a. Comply with all operating procedures and vehicle rules.
b. Report all vehicle accidents immediately to your immediate supervisor.
c. Operate only vehicles and equipment as authorized by the supervisor.
d. Employees are required to report any suspension or revocation of his/her license to his/her supervisor by the end of the next business day.

Safety Department

It is the Safety Department's responsibility to coordinate with all affected employees, supervisors, and department directors training programs to reinforce the vehicle safety procedures.

Procedure

Standards

A. Newly hired employees (whether full time, part time, or during an internship) will only be qualified to operate City vehicles if they:
    a. Have a job classification where the job duties require the operation of a City vehicle
    b. Have a valid driver's license.
    c. Have not been convicted of three moving violations or one DUI conviction in the preceding 24 month period in Kentucky or any other state.
    d. Pass qualifying training provided by the supervisors, where applicable.
    e. Incumbent City employees cannot become nor remain qualified to operate City vehicles if they:
        i. Have experienced the loss of a driver's license by revocation, suspension, withdrawal or denial of license to drive. When State driver's license is reinstated the person may again be qualified to operate City owned vehicles.
        ii. Have, as determined by the department head of having, an excess of

avoidable accidents.

iii. Do not meet periodic physical examination criteria set by state agencies.

Cell Phone Usage while Driving

Employees should not use cellular devices while driving or operating city owned vehicles or equipment. It is recommended that employees pull to the side of the road to make or receive telephone calls. **Texting is not allowed under any circumstance!!!**

Seat Belts

Seat belts must be worn at all times in a moving vehicle or moving equipment.

Records

a. Driver qualifications information will be maintained in individual department files.
b. All doctors' statements and related medical information shall be confidential and maintained in a separate medical file in the Office of the Department Head of Human Resources.
c. Records of vehicle accidents will be maintained in departmental files.
d. Motor vehicle reports will be maintained on each driver in the personnel file.

Lifting

Created: 7/1/2013
Revised:
Reviewed: 7/1/2013

Scope:

This program applies to all lifting activities that any City of Murray employee shall encounter in the work place.

Policy:

Under this policy, employees will be informed of the contents of proper lifting techniques.

Purpose:

The purpose of this training program is to provide adequate and useful information on the proper lifting techniques. This information shall be helpful in reducing strains and back injuries due to improper lifting.

General Information

Safe lifting is always important. It should be taken into consideration when lifting as a part of your job or everyday activity. Safe lifting means keeping your back aligned while you lift, maintaining your center of balance, and letting the muscles in your legs do the actual lifting.

Preventing back injuries is a major workplace safety challenge. According to the Bureau of Labor Statistics, more than one million workers suffer back injuries each year, and back injuries account for one of every five workplace injuries or illnesses. Further, one-fourth of all compensation indemnity claims involve back injuries, costing industry billions of dollars on top of the pain and suffering borne by employees.

Stretching Before Lifting

Stretching exercises are an effective way to loosen up your muscles to prevent injuries. These workplace stretches will help alleviate some of the tiredness and stiffness from muscles that have been forced into place for too long. A regular pattern of stretching, both at work and at home, will provide greater flexibility and strength to your muscles.

The following are a few stretches to help you loosen up:

Upper back stretch – Stand up, feet firmly planted at shoulder width apart. Lace fingers behind your back and slowly try to bring your elbows together. Don't try to force the movement or move to the point of strain. Slowly and gently make the movement.

Side to side head shrug – While standing, turn your head gently to your right shoulder and hold for a few seconds. Slowly return to front, and then gently turn to the left and hold.

Back twist – While standing, keep arms at side, gently rotate head and back to look behind you to the right. Allow your arms to move naturally with your body. Return to center. Gently rotate to the left. Hold for 10 seconds on each rotation.

Ankle stretches – While sitting, extend your right leg in front and gently rotate your foot in a circular movement. Return leg to floor and rotate left foot and ankle.

Techniques for Safe Lifting

Before lifting anything there are a few questions you need to ask yourself. "Can I lift it alone?" "Do I need mechanical help?" "Is it awkward for one person to handle, or should I ask a co-worker for help?" Never be embarrassed to ask for someone's help when lifting. If the load can be handled, follow these tips for safe lifting.

1. Size up the load and check overall conditions. Don't attempt the lift by yourself if the load appears to be too heavy or awkward.
2. Make certain that your balance is good. Feet should be shoulder width apart, with one foot beside and the other foot behind the object that is to be lifted.
3. Bend the knees and keep your back straight.
4. Grip the load with the palms of your hands and your fingers. The palm grip is much more secure. Tuck in the chin again to make certain your back is straight before starting to lift.
5. Use your body weight to start the load moving, and then lift by pushing up with the legs. This makes full use of the strongest set of muscles.
6. Keep the arms and elbows close to the body while lifting.
7. Carry the load close to the body. Don't twist your body while carrying the load. To change direction, shift your foot position and turn your whole body.
8. Watch where you are going!
9. To lower the object, bend the knees. To deposit the load on a bench or shelf, place it on the edge and push it into position. Make sure your hands and feet are clear when placing the load.

Employees with Pre-existing Back Injuries

When lifting with a pre-existing back injury use extreme caution. Following the stretching section above is strongly recommended. However, if loads exceed 25lbs. ask for assistance from co-workers.

Tips to Remember:

When lifting, remember to make sure that your footing is firm and that your path is clear. Be sure to use the same lifting techniques when setting a load down. It takes the same amount of time to do a safe lift as it does an unsafe lift, so play it safe and use proper lifting techniques.

Documentation of Training

A. Lifting training will be covered during the annual or bi-annual safety training.
B. A documentation form will be used to document both initial and annual training given to employees as required by the Safety Office.

Appendix A

CITY OF MURAY HOT WORK PERMIT

Date _____ Time_____ Name of Person(s) Performing Work:_____

Specific Location of Work _____

Yes	No	
___	___	Cutting or welding permitted in an area that has been made fire safe.
___	___	All movable fire hazards in the vicinity have been taken to a safe place.
___	___	Guards used to contain the heat, sparks and slag if fire hazards cannot be removed.
___	___	Floor or wall openings or cracks, open doorways and windows protected or closed.
___	___	Fire extinguisher available for instant use.
___	___	Fire watch in areas where other than a minor fire might develop such as around combustible material.
___	___	Floors swept clean of combustible material for a radius of 35'.
___	___	Combustible floors have been kept wet, covered with damp sand or protected by fire resistant shields.
___	___	Welding/cutting done only in areas authorized by management. No welding/cutting in sprinkled building when sprinkler system is impaired or in presence of explosive atmosphere, or in area of storage of readily ignitable material.
___	___	Dusts and conveyor systems that might carry sparks to distant combustibles protected or shutdown.
___	___	Cutter/welder is trained in safe operation of equipment and the safe use of the process.
___	___	Any on-site contractors advised about flammable material or hazardous conditions of which they may not be aware.
___	___	Welding or cutting containers:
___	___	Container thoroughly cleaned and ventilated;
___	___	Any pipe lines or connections to containers disconnected or blanked.
___	___	PPE used as needed– e.g., eye protection, helmet, protective clothing, respirator, gloves.
___	___	Warning sign posted to warn other workers of hot metal.
___	___	Appropriate ventilation provided.
___	___	When working in confined spaces a permit has been issued as per 1910.146.

For specific requirements refer to General Industry Standards 1910.146; 1910.252; .253; .254 and .272 and Construction Standards 1926.803; .350; .352 and .353.

Authorized Signature: _____

Appendix B

INFECTIOUS DISEASE EXPOSURE REPORT FORM

Agency Name:		Exposure Date:	Exposure Time:
Case/Alarm, Run or Report #:		Exposure Location:	
EXPOSED EMPLOYEE INFORMATION			
Last Name:	First Name:		Middle Initial:
Home Address:		City, ST, Zip:	
Home Phone:		Work Phone: Extension:	
Employer Name:		Date of Birth:	SSN:
Employment Category (check one): EMS [] Firefighter [] Law Enforcement [] Other[] (specify)			
Any Previous Exposures? Yes [] No [] Have you received 3 injection Hepatitis B Vaccine Series ? Yes[ ] No[ ] Have you had a Hepatitis Antibody Test (Titer) documenting immunity to Hepatitis B? Yes [ ] No[ ]			
SOURCE INFORMATION			
Source Reports History of (check as many as apply): HIV/AIDS [] Hepatitis A[] B[] C [] Meningococcal Infection [] TB[] Varicella (chicken pox/shingles) [] Other[]			
Source Last Name:	First Name:		Middle Initial:
Home Address:		City, ST, Zip:	
Home Phone:		Work Phone: Extension:	
Race: White [] Black [] Am. Indian/Alaska Native [] Asian/Pac Islander [] Other []		Ethnicity: Hispanic [] Non-Hispanic []	
Date of Birth:	Place of Birth:	Gender: Male [] Female []	Occupation:
EXPOSURE DESCRIPTION			
1. What were you in contact with (check as many as apply): Blood [] Feces[] Saliva [] Sputum [] Cough spray [] Sweat [] Tears [] Urine [] Vomit [] Ammotic fluid[] Other [] (describe)			

2. What was the method of contact (check all that apply):					
Needlestick or Sharps []	Bite []	Intentional injury []	Splash by blood or body fluids []	Blood or body fluid into wound, sore or rash < 24 hrs old []	Blood or body fluid into wound, sore or rash > 24 hrs old []
Contaminated object[] (specify)			Other [] (specify)		
3. Site of contact (list all body areas exposed):					
4. How did the exposure occur? (be specific):					
5. Was personal protective equipment being used at the time of the exposure? Yes [] No [].					
If Yes, what was used? Gloves [] Tyvex sleeves [] Eye protection [] Mask [] Other [] (specify):					
6. What immediate action was taken in response to the exposure to remove the contamination?					
Washina/handwashing [] Eye/nose/mouth flush [] Other [] (specify**)**					
EXPOSED EMPLOYEE MEDICAL		**INFORMATION**			
Did you seek medical attention? Yes [] No []		Yes, Date: Time: Location:			
TO BE COMPLETED BY THE MEDICAL FACILITY					
Medical Facility Name:			Attending Physician:		
Date of arrival at facility: Time of arrival:			Number of hours elapsed from exposure:		
Testing (check all that apply): Baseline PPD [] Chest X-Ray [] Acute HEP Panel (HAV/HBV/HCV) [] HIV [] RPR []					
Was treatment provided? Yes [] No []. If Yes, specify:					
Was medication given? Yes [] No []. If Yes, specify:					
Was medication prescribed? Yes [] No [] If Yes, specify:					
Follow-up?					
Employee Signature: Date Signed:					
Infection Control Officer/Designee Signature: Date Signed:					

Appendix C

INCIDENT REPORT FORM