SAFETY PROGRAMS MANUAL
29 CFR 1910

City of West Des Moines

JANUARY 2023

Safety Programs Manual

City of West Des Moines
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Contents

Chapter 1 Introduction to Health and Safety Programs

Revised January 2022

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1.1 Safety Supervisor Project Team Purpose

The Safety Supervisor Project Team is hereby formed to monitor and improve the employee health and safety policies and practices of the City of West Des Moines.

1.2 Safety Supervisor Project Team Membership

The Safety Supervisor Project Team shall be comprised of one or more representatives from each of the following departments:

Community & Economic Development	Development Services
EMS	Engineering Services
Finance	Fire
Human Resources	Human Services
ITS	Library
Parks & Recreation	Police
Public Services	Westcom

Each department must have at least one representative appointed. Representatives will be selected by their respective Department Directors.

1.3 Safety Supervisor Project Team Chairperson

Representatives of the Human Resources Department will co-chair the Safety Supervisor Project Team. The chairpersons shall preside at all meetings of the Safety Supervisor Project Team and decide all points of order and procedure. The chairpersons shall appoint any sub-committee which may be found necessary to facilitate the orderly conduct of business.

1.4 Safety Supervisor Project Team Principal Responsibilities

1.4.1 Individual Written Safety and Health Programs

The Safety Supervisor Project Team will develop, maintain, and apply individual written Safety and Health Programs to reduce or avoid any potential employment hazards faced by City employees. The Programs may be combined in one document entitled Safety Programs Manual. Each program insofar as possible will be maintained as an independent program to avoid situations where it is unclear where responsibility for given issues belong. Effective implementation of these programs requires support from all levels of City management. Each written program will be communicated to all personnel affected by it. The Safety Programs Manual will encompass the total workplace, regardless of the number of workers employed or the number of work shifts.

The Safety Supervisor Project Team will ensure the programs in this Safety Programs Manual are reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

1.4.2 Safety Supervisor Project Team Duties

1. Assemble on a regular basis to conduct safety meetings.
2. Review accident, injury and near miss reports and discuss corrective actions when needed. Assist with workplace investigations when needed.
3. Direct and monitor department training and safety meetings.
4. Discuss and report on unfinished business from previous meetings.
5. Discuss new business.
6. Maintain appropriate records of activities.
7. Conduct and record department required OSHA training.
8. Assist with updates to department Lockout/Tagout Manual and Procedures and Confined Space procedures.
9. Ensure that all department facilities complete Severe Weather and Fire drills.
10. Assist with updates to department facility maps as needed.
11. Assist with the promotion, planning, and implementation of safety programs and events.
12. Communicate safety initiatives, programs, and updates at department meetings.

1.4.3 Safety Supervisor Project Team Charter

Safety Supervisor Project Team will encourage safety awareness among all employees. It will be established to monitor safety performance, safety inspections, and aid in administering the written safety programs to:

1. Reduce injuries and save lives.
2. Constantly be aware of conditions in all work areas that can produce injuries.
3. Aid in complying with all laws pertaining to safety.
4. Ensure that no employee is required to work at a job that is of imminent danger.
5. Place the personal safety and health of each employee in a position of primary importance.
6. Aid in the prevention of occupational-induced injuries and illnesses.
7. To the greatest degree possible, aid management in identifying all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.
8. Maintain a safety and health program conforming to the best management practices of organizations of this type.
9. Establish a program that instills the proper attitudes toward injury and illness prevention not only on the part of Supervisors and employees, but also between each employee and their co-workers.
10. Ultimately achieve a safety program maintained in the best interest of all concerned.

1.5 Departmental Safety Meetings

A well-ordered flow of information is essential to a good safety program. The Safety Supervisor Project Team, through a program of safety meetings at all levels, intends to accomplish the goals of safety awareness, education, and participation.

1. Safety meeting guidelines. The Safety Supervisor Project Team will maintain program and policy guidelines serving various topics of importance to the safety of employees. These documents will be flexible. They will be intended to be adapted to the widest range of situations and groups. Supervisors will add the level of detail required to make the material completely relevant to their employees.

2. Safety meeting schedules. Employees will be given safety briefings by their respective Supervisors on a regular basis. Safety briefings will be given immediately:

    - Upon initial job assignment or reassignment.
    - When operational changes to equipment or the job occur.

- When a co-worker in their department is injured.
- When manufacturers provide safety-related information pertaining to defects, use, etc., for equipment used by City employees.

3. Departmental staff meetings. Safety will be considered in the agenda of all staff meetings. Each Department's Safety Supervisor Project Team member will keep their Department Head informed of safety performance developments in the area of accident prevention and safety. Department Heads may ask their Safety Supervisor Project Team member to provide safety briefings as required. Department Heads will ensure the information is transmitted to all Supervisors for inclusion in meetings.

4. Supervisor meetings. Safety will be considered in the agenda of all routine Supervisor meetings. The Safety Supervisor Project Team members will keep Supervisors informed of safety performance developments in the area of accident prevention and safety.

1.6 Safety Condition Communication

The City's Safety Condition Communication Form (Appendix A) will be used by all employees to report potential or known hazards.

The following procedures apply:

1. Person reporting hazard:

   - Notify Department Supervisor of the hazard.
   - Take appropriate immediate action as necessary.
   - Fill out required sections of the Safety Condition Communication Form (Appendix A).
   - Forward the completed form immediately to the Supervisor and a copy to the Safety Supervisor Project Team.

2. Supervisor:

   - Notify all affected workers of hazard.
   - Notify maintenance of hazard if it involves a maintenance issue.
   - Ensure hazard is properly marked and controlled.
   - Add recommendations, if any, to Section III of the Safety Condition Communication Form and route the form as directed.

The Investigation Team will follow the same investigation procedure for Safety Condition Communication Form potential hazards as in other investigations.

1.7 Accident Investigation

Accident investigation is primarily a fact-finding procedure. The facts revealed are used to prevent recurrences of similar accidents. The focus of accident investigation will be to prevent future accidents and injuries to increase the safety and health of all our employees.

1. Immediate concerns:

    - Ensure any injured person receives proper care.
    - Ensure co-workers and personnel working with similar equipment or in similar jobs are aware of the situation. This is to ensure that procedural problems or defects in certain models of equipment do not exist.
    - Start the investigation promptly. Notify the appropriate Supervisor of the accident who will in turn follow the necessary procedures as dictated by accident type.

2. The established Accident Investigation Project Team will complete an investigation and record their findings.

3. Reviewers. All injury investigation reports will be reviewed by the affected Department Head and Safety Supervisor Project Team member to ensure pertinent information is transmitted to all concerned and remedial action taken.

4. Accident investigation report(s). The final report(s) may include but are not limited to the following:

    - Investigation form and pertinent data.
    - Videos, photographs, drawings and exhibits of the scene.
    - Narrative of accident.
    - Sequence of events.
    - Contributing information.
    - Findings and recommendations of Accident Investigation Team.
    - Action items and completion dates.
    - Responsible persons.
    - Follow-up procedures to ensure completion.
    - Distribution list.

5. See Chapter 12 for more information and requirements.

1.8 General Safety Rules for All Departments

The following safety principles are established by this Safety Supervisor Project Team as general guidelines for all departments/sections:

- Never operate any machine or equipment unless you are authorized and trained to do so.
- Do not operate defective equipment. Do not use broken hand tools. Report them to your Supervisor immediately.
- Obtain full instructions from your Supervisor or training representative before operating a machine with which you are unfamiliar.
- Never start on any hazardous job without being completely familiar with the safety techniques which apply to it. Check with your Supervisor if in doubt.
- Make sure all safety attachments are in place and properly adjusted before operating any machine.
- Do not operate any machine or equipment at unsafe speeds. Shut off equipment which is not in use.
- Wear all protective garments and equipment necessary to be safe on the job. Wear proper shoes. Sandals or other open-toed or thin-soled shoes shall not be worn.
- Do not wear loose, flowing clothing or long hair while operating moving machinery.
- Never repair or adjust any machine or equipment unless you are specifically authorized to do so by your Supervisor.
- Never oil, clean, repair, or adjust any machine while it is in motion.
- Never repair or adjust any electrically driven machine without opening and properly tagging the main switch.
- Put tools and equipment away when they are not in use.
- Do not lift items which are too bulky or too heavy to be handled by one person. Ask for assistance.
- Keep all aisles, airways, and exits clear of skids, boxes, air hoses, equipment, and spillage.
- Do not place equipment and materials so as to block emergency exit routes, fire boxes, sprinkler shutoffs, machine or electrical control panels, or fire extinguishers.
- Stack all materials neatly and make sure piles are stable.
- Keep your work area, machinery, and all facilities which you use clean and neat.
- Do not participate in horseplay or tease or otherwise distract fellow workers. Do not run on premises – always walk.
- Power-truck operators must safeguard other workers at all times. Workers must show courtesy to power-truck operators.
- Filing cabinets, desks, storage cabinets, and other storage devices should have drawers closed when not in use to prevent tripping hazards.
- Floor mounted extension cords should be placed so that they are flush to the ground at all times.
- Coffee bar electrical outlets should be properly used. Never overload electrical outlets.
- Burned out light bulbs should be replaced immediately.

- Frayed or damaged electrical cords should be replaced.
- Never take chances. If you're unsure, you're unsafe!
- Ask for help. Let good common sense be your guide.

1.9 Disciplinary Actions in Matters of Safety

Employee safety is paramount. The willful commitment of an unsafe act cannot be condoned. Employees who willfully jeopardize their own or coworker's safety will be reprimanded in accordance with City policy.

1.10 Recordkeeping Requirements

The City fully understands that organizations with eleven (11) or more employees at any time during the calendar year must comply with the provisions of 29 CFR 1904. This section provides for recordkeeping and reporting by the City covered under 29 CFR 1904 as necessary or appropriate for developing information regarding the causes and prevention of occupational accidents and illnesses, and for maintaining a program of collection, compilation, and analysis of occupational safety and health statistics both for this Safety Supervisor Project Team and as part of the national system for analysis of occupational safety and health. Records shall be established on a calendar year basis.

1. The City will report under 29 CFR 1904.8 as required.

2. The City will maintain a log of occupational injuries and illnesses under 29 CFR 1904.2 and make reports under 29 CFR 1904.21 upon being notified in writing by the Bureau of Labor Statistics that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses.

3. Log and summary of occupational injuries and illnesses. The City shall maintain a log and summary of all recordable occupational injuries and illnesses by calendar year.

4. Enter each recordable injury and illness on the log and summary as early as practicable but no later than 6 working days after receiving information that a recordable injury or illness has occurred. For this purpose, form OSHA No. 300 or an equivalent which is as readable and comprehensible to a person not familiar with it will be used. The log and summary shall be completed in the detail provided in the form and instructions on form OSHA No. 300A.

5. The City maintains a log of occupational injuries and illnesses (OSHA 300). There will be available at the place where the log is maintained sufficient information to complete the log to a date within 6 working days after receiving information that a recordable case has occurred.

6. Supplementary record. In addition to the log of occupational injuries and illnesses (OSHA 300) the City shall have available for inspection within 6 working days after receiving information that a recordable case has occurred, a supplementary record for each occupational injury or illness. The record shall be completed in detail and as described in the instructions for Occupational Safety and Health Administration Form OSHA No. 301. Worker's compensation, insurance, or other reports are acceptable alternative records if they contain the information required by Form OSHA No. 301 (according to OSHA). If no acceptable alternative record is maintained for other purposes, Form OSHA No. 301 shall be used, or the necessary information will be otherwise maintained.

7. Annual summary. The City shall post an annual summary of occupational injuries and illnesses for each facility under our control. This summary shall consist of a copy of the year's totals from the form OSHA No. 300 and the following information from that form:

   - Calendar year covered.
   - Certification signature, title, and date.
   - A form OSHA No. 300 shall be used in presenting the summary. If no injuries or illnesses occurred in the year, zeros will be entered on the totals line and the form posted.
   - The summary shall be completed by February 1 of each calendar year. The employee, who supervises the preparation of the log and summary of occupational injuries and illnesses, shall certify that the annual summary of occupational injuries and illnesses is true and complete. The certification shall be accomplished by affixing the signature of the employee who supervises the preparation of the annual summary of occupational injuries and illnesses at the bottom of the last page of the log and summary or by appending a separate statement to the log and summary certifying that the summary is true and complete.
   - The City shall post a copy of the establishment's summary in each facility in the same manner required under 29 CFR 1903.2. The summary covering the previous calendar year shall be posted no later than February 1 and shall remain in place until April 30. For employees who do not primarily report or work at a fixed site, or who do not report to any fixed site on a regular basis, we shall satisfy this posting of requirements by presenting or mailing a copy of the summary during the month of February of the following year to each such employee who receives pay during that month.

8. Records retention. Records provided for in 29 CFR 1904.2, 1904.4, and 1904.5 including form OSHA No. 300 and its predecessor forms OSHA No. 100, OSHA No. 102, and OSHA No. 200 will be retained for 5 years following the end of the year to which they relate.

9. Access to records. The City shall provide, upon request, records provided for in 29 CFR 1904.2, 1904.4, and 1904.5, for inspection and copying by any representative of the Secretary of Labor for the purpose of carrying out the provisions of the OSHA Act, and by representatives of the Secretary of Health, Education, and Welfare, or by any representative of a State accorded jurisdiction for occupational safety and health inspections or for statistical compilation.

10. The log and summary of all recordable occupational injuries and illnesses (OSHA No. 300) will, upon request, be made available to any employee, former employee, and to their representatives for examination and copying in a reasonable manner and at reasonable times. The employee, former employee, and their representatives shall have access to the log for any establishment in which the employee is or has been employed.

11. Reporting a work-related fatality or serious injury. The City's Safety Coordinator or other Department authorized person must report the following events to OSHA:
    - All work-related fatalities
    - All work-related in-patient hospitalizations of one or more employees
    - All work-related amputations
    - All work-related losses of an eye

    Work-related fatalities must be reported within 8 hours of learning of the outcome.

    Any in-patient hospitalization, amputation, or eye loss must be reported within 24 hours of learning of the outcome.

    The report shall include the following:
    - Establishment name
    - Location of the work-related incident
    - Time of the work-related incident
    - Type of reportable event (fatality, hospitalization, amputation, or loss of an eye)
    - Number of employees who suffered in the event
    - Names of the employees who suffered in the event
    - Contact person and their phone number
    - Brief description of the work-related incident

    The report to OSHA may be made by:

- Calling OSHA's free and confidential number at 1-800-321-OSHA (6742).
- Calling your closest Area Office (515) 284-4794 during normal business hours.
- Using OSHA's online form.

Reports to the State of Iowa

The City must report to the Iowa Division of Workers' Compensation any occupational injury or illness which temporarily disables an employee for more than three days or which results in permanent total disability, permanent partial disability, or death. This report shall be made within four days from such event when such injury or illness is alleged by the employee to have been sustained in the course of the employee's employment. First reports of injury are to be filed in the form and manner required by the Division of Workers' Compensation. A report to the Division of Workers' Compensation is considered to be a report to the division of labor services. This rule does not excuse employers from the requirement to notify the division of labor services of fatalities or multiple hospitalization incidents. Iowa Code chapter 88, IAC 875-4.2 (88)
The State of Iowa is a State Plan State in that it has workplace safety standards similar to OSHA. The City may make reports required by 29 CFR 1904.39 to the state by using at least one of the following methods:

a. Completing the incident report form available at www.iowaosha.gov and submitting electronically or

b. Calling (877) 242-6742 or 1-800-321-6742.

12. Statistical program. The City will comply with all requirements to maintain, provide, and use statistical summaries. Upon receipt of an Occupational Injuries and Illnesses Survey Form, the City shall promptly complete the form in accordance with the instructions contained therein and return it in accordance with the instructions.

1.11 Appendix A: Safety Condition Communication Form

CITY OF WEST DES MOINES

SAFETY CONDITION COMMUNICATION FORM

Safety in the workplace is a value of our organization and requires a commitment from all employees. This form is to be used to communicate safety concerns (hazards, health risks, etc.), questions, or suggestions (training, informal practices that could be adopted as proactive safety procedures, etc.).

SECTION I

Please briefly state safety concern(s), question(s), or suggestion(s):

_____

_____

_____

SECTION II

Was this communication prompted by a specific safety situation?
Yes_____ No _____

If no, please continue to Section III.

SECTION III

Recommended solution to above concern (include any estimated cost, time, or materials):

_____

_____

_____

_____

_____

Date/Time: _____

Employee Name (Optional): _____

Chapter 2 Hazard Communication Program

29 CFR 1910.1200
Revised January 2017

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2.1 Purpose

The "Hazard Communication Rule", 29 C.F.R. 1910.1200, also known as "The Right-To-Know Law" was promulgated by the Occupational Safety and Health Administration (OSHA) in 1983. In 1984, the State of Iowa passed the "Hazardous Chemicals Risk Right-to-Know Rule" which incorporates the provisions of OSHA's Hazard Communication Rule with additional requirements for the transmission of information to emergency response teams in the community. Because of Iowa's approved OSHA State Plan, employers in this state are required to comply with this state law.

The purpose of the law is to ensure that the hazards of all chemicals produced or imported by chemical manufacturers and importers are evaluated. The results of these evaluations are to be transmitted to affected employers and in turn to workers of these employers. The requirements of this section are intended to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, safety data sheets and employee training. The law also provides for hazard and quantity data to be given to emergency response teams when needed and to the public upon request.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written hazard communication program in their respective departments.

2.2 Scope

The major objectives of the Right-To-Know Program are to protect City employees' health by providing employees with necessary information concerning health and physical hazards of chemicals in their workplace and to train employees on proper protective measures, to develop a management system for compliance with Right-To-Know legislation, and to comply with Iowa Workforce Development, Bureau of Labor Rule 530, Chapters 110 through 140.

2.3 Policy

The City's compliance program will provide the means for the transmission of information to apprise employees of hazardous chemical products to which they are exposed. It will include the following:

- A listing of all hazardous chemical products used or stored on City property.
- A hazard determination of all chemicals in use or stored on City property.
- Appropriate labels on containers of all chemicals used.
- Safety Data Sheets (SDS) will be available for all hazardous chemical products on City property. Employees will be trained to recognize and interpret labels, warnings, color coding and signs affixed to hazardous chemical containers.
- Employees will be trained in the use of Safety Data Sheets and their location and availability.
- Employees will be trained on the proper use of personal protective equipment.
- This written Hazard Communication Program will be made available upon request to employees, their designated representatives, emergency responders and interested members of the community as provided for in Iowa Code 530-130 (455d).

2.4 Chemical List

A list of all hazardous chemicals used or stored on City property will be assembled and maintained by the individual departments. To accomplish this, the hazardous chemicals will be listed on the City's Chemical Inventory Form (See Section 2.11 Appendix A: Chemical Inventory Form). Procedures will be implemented to ensure that all chemicals purchased by the City will be labeled appropriately. These shall include:

- Inclusion on the requisition form that the order is conditional upon receipt of an SDS for any hazardous chemical substance as determined by the manufacturer in compliance with 29 CFR 1910.
- A system to verify that hazardous chemical labeling has been met by the suppliers. No payment for such chemicals will be permitted until the requisitioning office has received notice on the receiver copy that the chemicals were properly labeled and an SDS has been provided with the chemicals.

2.5 Labeling/Placarding

1. All containers of hazardous materials, regardless of size, must be labeled and original labels on containers are not to be removed. Any container that could be used to store hazardous materials shall be labeled with its actual or intended contents.

2. If a different material is placed in the container, the label must be changed to reflect the true content. All labels must include the following:

   - Name of the substance in the container.
   - Appropriate hazard warnings.
   - The name and address of the manufacturer or distributor.
   - Exceptions to this rule may be made for small quantity containers which are filled by a person using that material if it is used by that person during the same shift.

3. All storage areas will be appropriately placarded or signed, identifying the fire hazards of chemicals based on NFPA (National Fire Protection Association) Standard 704, 1980.

   Placards or signs shall identify chemical hazards in three categories:
   - Health (blue backgrounds and numbers);
   - Flammability (red backgrounds and numbers); and
   - Reactivity or instability (yellow backgrounds and numbers).

   The bottom of placards or signs shall be used to indicate unusual reactivity or other special hazard warnings in black and white colors.

Signal Words are used to indicate the relative level of severity of the hazard. There are only two words used as signal words, "Danger" and "Warning." Within a specific hazard class, "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.

- On buildings smaller than 5,000 square feet, the placard shall be placed on the outside of the building. On buildings larger than 5,000 square feet, the placards shall be placed within the building for appropriate areas inside.

2.6 Safety Data Sheets

Each department will maintain an updated library of Safety Data Sheets (SDS) for hazardous chemicals that are used in their facilities. SDSs will be available to all employees during their work shifts in the departmental assembly location. The SDSs will contain the following information:

1. Product and company identification
2. Hazards identification
3. Composition/in-formation on ingredients
4. First-aid measures
5. Firefighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

2.7 Training

All employees routinely exposed to hazardous materials through use, handling, or transportation, etc. shall be trained for the materials in use in their workplace. These employees will receive annual training in the Right-To-Know Program which shall include:

- Explanation of Right-To-Know Law (employee rights and responsibilities).
- Introduction to the written Hazard Communication Program.
- Hazard determination.
- Interpretation of Safety Data Sheets.

- Labeling and placarding procedures.
- Physical and health hazards of chemicals in the workplace.
- Protective procedures.
- Protective equipment.
- Procedures for non-routing tasks.

All new employees or transferred employees will be trained in the City Right-to-Know Program as well as employee rights and responsibilities.

It is the employing department's responsibility to ensure that all employees routinely exposed to hazardous materials through use, handling, or transportation receive initial training at the time of assignment, whenever a new hazard is introduced and annually thereafter.

The Safety Supervisor Project Team will assist the respective departments in meeting the training requirements by coordinating or conducting the annual Right-To-Know Program training.

Contractors. Employees of City contractors exposed to hazardous materials on the worksite will be trained for the materials in use by the contractor as part of the contract. SDSs for City materials will be supplied to the contractor upon request. Contractors will notify the City if they plan to use hazardous materials to which City employees may be exposed and provide SDSs. The City and contractors will cooperate to assure City employees are trained for the contractors' hazardous materials.

Employee training will at a minimum include the type of information the employee would expect to see on SDS labels, including the following.

- Product identifier: how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in Section 1 of the SDS (Identification).
- Signal word: used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. There are only two signal words, "Danger" and "Warning." Within a specific hazard class, "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.
- Pictogram: OSHA's required pictograms must be in the shape of a square set at a point and include a black hazard symbol on a white background with a red frame sufficiently wide enough to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is

not permitted on the label. OSHA has designated eight pictograms under this standard for application to a hazard category.

- Hazard statement(s): describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: "Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin." All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards, no matter what the chemical is or who produces it.
- Precautionary statement(s): means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.
- Supplier Information. Name, address and phone number of the chemical manufacturer, distributor, or importer.
- How an employee might use the labels in the workplace. For example:
  - Explain how information on the label can be used to ensure proper storage of hazardous chemicals.
  - Explain how the information on the label might be used to quickly locate information on first aid when needed by employees or emergency personnel.
- General understanding of how the elements work together on a label. For example:
  - Explain that where a chemical has multiple hazards, different pictograms are used to identify the various hazards. The employee should expect to see the appropriate pictogram for the corresponding hazard class.
  - Explain that when there are similar precautionary statements, the one providing the most protective information will be included on the label.
- Training on the format of the SDS must include information on:
  - Standardized 16-section format, including the type of information found in the various sections.
  - For example, the employee should be instructed that with the format, Section 8 (Exposure Controls/Personal Protection) will always contain information about exposure limits, engineering controls and ways to protect yourself, including personal protective equipment.
  - How the information on the label is related to the SDS. For example, explain that the precautionary statements would be the same on the label and on the SDS.
- Training will present information in a manner and language that employees can understand. Training will take into account languages other than English, employee vocabulary limitations and literacy.

2.8 Community Right-To-Know

SDSs and the written hazard communication program for the City and information concerning quantities of hazardous materials shall be available to the public upon request. Quantities may be specified as amounts less than 500 pounds, 500 - 1,000 pounds, 1,000 - 5,000 pounds, or more than 5,000 pounds. Requests from the public for SDSs on hazardous materials shall be referred to the Human Resources Office.

The Safety Supervisor will coordinate with the City Fire Department to assure any toxic chemicals are properly stored and reported.

2.9 Extremely Hazardous Substances

The presence of Extremely Hazardous Substances (EHSs) in quantities at or above the Threshold Planning Quantity (TPQ) requires certain emergency planning activities to be conducted. The EHSs and their TPQs are listed in 40 CFR part 355, Appendices A and B. For section 302 EHSs, Local Emergency Planning Committees (LEPCs) must develop emergency response plans and facility owner or operator must notify the State Emergency Response Commission (SERC) or Tribal Emergency Response Commission (TERC) and their LEPC if a chemical is present at the facility or above the EHS's TPQ. Additionally, if the TPQ is equaled or exceeded, facilities with a listed EHS are subject to the reporting requirements of EPCRA section 311 (provide material safety data sheet or a list of covered chemicals to the SERC or TERC, LEPC, and local Fire Department) and section 312 (submit inventory form -Tier I or Tier II). The minimum threshold for section 311-312 reporting for EHS substances is 500 pounds or the TPQ, whichever is less.

2.10 Responsibilities

The Safety Supervisor will be responsible for:

- Developing and updating safety policies and maintaining a copy of each policy.
- Maintaining a record of the most current safety training class attendance.
- Maintaining a "Hazardous Communication Right-To-Know" manual at each employee "location of assembly."

2.11 Appendix A: Chemical Inventory Form

City of West Des Moines
Right to Know
Safety Data Sheet Index

Department: _____

Completed By: _____ Date Completed: _____

Trade Name	Generic Name	Use	Qty.	Storage Location	Special Protection Required YES or NO	Respiratory	Gloves	Eyes	Ventalation	Clothing	Name of Manufacturer or Supplier & Phone #	Page # & Comments

Chemical Inventory Form

Chapter 3 Bloodborne Pathogens Program

Exposure Control Plan (ECP)

29 CFR 1910.1030

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Revised January 2022

3.1 Purpose

The purpose of this program is to eliminate or minimize occupational exposure to bloodborne pathogens by determining potential employee exposure, implementing exposure control methods and precautions investigating any exposure incidents and communicating hazards to employees (*e.g.,* training).

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written bloodborne pathogens program in their respective departments.

3.2 Policy Statement

The policy of the City of West Des Moines is to provide a safe and healthful work environment for our entire staff. In pursuit of this goal, the following Exposure Control Plan (ECP) is provided to eliminate or minimize occupational exposure to bloodborne pathogens. This ECP is intended to protect our employees from the special hazards associated with the risk of exposure to and transmission of bloodborne pathogens, including, but not limited to human immunodeficiency virus (HIV) and hepatitis B virus (HBV). This Plan and the OSHA standards are available to all employees.

3.3 Definitions

Blood means human blood, human blood components, and products made from human blood.

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

Clinical Laboratory means a workplace where diagnostic or other screening procedures are performed on blood or other potentially infectious materials.

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

Contaminated Laundry means laundry which has been soiled with blood or other potentially infectious materials or may contain sharps.

Contaminated Sharp means any sharp with the presence or the reasonably anticipated presence of blood or other potentially infectious materials.

Decontamination means the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens on a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use or disposal.

Engineering Controls means controls (e.g., sharp disposal containers, self-sheathing needles) that isolate or remove the bloodborne pathogen from the workplace.

Exposure Incident or Occupational Exposure refers to blood or other potentially infectious materials coming into contact with the eye, mouth, other mucous membrane, or skin during the performance of an employee's duties.

Hand Washing Facilities means a facility providing an adequate supply of potable water, soap, and single use towels or hot air drying equipment.

Healthcare Professional means a person whose legally permitted scope of practice allows her or him to independently perform the activities related to Hepatitis B vaccination and post-exposure evaluation and follow-up segment of this plan.

HBV means hepatitis B virus.

HIV means human immunodeficiency virus.

Other Potentially Infectious Materials means (1) the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, 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 human (living or dead); and (3) HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Personal Protective Equipment is specialized clothing or equipment worn by an employee for protection against a hazard. Ordinary work clothes (e.g., uniforms, pants, shirts, or blouses) are not intended to function as protective equipment.

Regulated Waste means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Sharps are objects that can penetrate a worker's skin, such as needles, scalpels, broken glass, capillary tubes, and the exposed ends of dental wires.

Source Individual means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to an employee.

Sterilize means the use of a physical or chemical procedure to destroy all microbial life on an object.

Syringes are simple pumps consisting of a plunger that fits tightly in a cylindrical tube. Pulling or pushing the plunger allows liquid or gas to enter or exit the syringe through an opening at the end of the tube. The opening may be fitted with a hypodermic needle (sharps) or tubing to direct the flow.

Universal Precautions is 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.

Work Practice Controls means controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

3.4 Infection Control Representative

The Emergency Medical Services Chief or qualified designee will coordinate infection control activities by the City and advise the Safety Supervisor Project Team on the exposure control plan (ECP).

3.5 Universal Precautions

All human blood and body fluids are treated as though they are known to be infected with hepatitis B virus (HBV), human immunodeficiency virus (HIV) and other bloodborne pathogens, although special hazards and higher risks of transmission with certain body

fluids are recognized. Universal Precautions will be used in all work activities with any potential for exposure to blood or other potentially infectious materials.

3.6 Engineering and Work Practice Control

Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall be used. Engineering controls shall be reviewed, maintained, or replaced on a regular schedule to ensure their effectiveness.

1. Hand washing: Readily accessible hand washing facilities shall be provided to employees. When provisions of hand washing facilities are not feasible, either an appropriate antiseptic or antiseptic hand cleanser in conjunction with clean cloth or paper towels or antiseptic towelettes will be provided. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

   Employees shall wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment. Employees shall wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

2. Handling of sharps: Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed. Shearing or breaking of contaminated needles is prohibited. Contaminated needles and other contaminated sharps shall not be recapped or removed unless no alternative is feasible. Recapping or needle removal shall be accomplished by:

   - Mechanical device
   - One handed technique - This involves not handling the cap while recapping the needle. Instead, the cap is scooped up with the needle facing away from the employee thereby decreasing the risk of peritoneal exposure.

3. Personal Habits & Food and Drink: Eating, drinking, smoking, application of cosmetics or lip balm, and handling contact lenses are prohibited in work areas with reasonable likelihood of occupational exposure to bloodborne pathogens.

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

4. Specific Work Practices: All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize the splashing, spraying, spattering, and generation of droplets of these substances. No potentially contaminated object should be placed in the mouth. The nose, mouth, and eyes should not be touched during or after physical contact with potentially

contaminated material until proper hand washing procedures have been followed. Special care and precautions shall be taken any time an employee may have open cuts or sores or dermatitis that may compromise the barrier protection provided by the skin.

Specimens of blood or other potentially infectious materials shall be placed in a container designed for such use or a container that prevents leakage during collection, handling, processing, storage, transport, or shipping. The minimum number of personnel required shall be involved with any procedure entailing exposure to bloodborne pathogens and exposure time shall be minimized.

5. Storage and Transport of Blood or Other Infectious Body Fluids: The container for storage, transport, or shipping (including freezers and refrigerators) used for storage of blood or other potentially infectious materials shall be labeled with biohazard lettering or color-coded with fluorescent orange or orange-red labels with lettering or symbols in a contrasting color affixed to the container by string, wire, adhesive, or other method preventing loss or unintentional removal, or in red bags substituted for labels and closed prior to being stored, transported, or shipped.

   If outside contamination of the primary container occurs, the primary container shall be placed within a second container which prevents leakage during handling, processing, storage, transport, or shipping and is labeled or color-coded with fluorescent orange or orange-red labels with lettering or symbols in a contrasting color affixed to the container by string, wire, adhesive, or other method preventing loss or unintentional removal, or in red bags substituted for labels. If the specimen could puncture the primary container, the primary container shall be placed within a secondary container which is puncture-resistant in addition to the above characteristics.

6. Equipment Contaminated by Blood or Other Infectious Body Fluids: Equipment which may become contaminated with blood or other potentially infectious materials shall be examined prior to servicing or shipping and shall be decontaminated as necessary, if feasible.

   If not feasible, the reasons for the inability to decontaminate the equipment shall be documented by a designated Infection Control Representative and those portions that have not been decontaminated shall be labeled or color-coded with fluorescent orange or orange-red labels with lettering or symbols in a contrasting color affixed to the container by string, wire, adhesive, or other method preventing loss or unintentional removal or in red bags substituted for labels. Further, a designated Infection Control Representative shall ensure that this information is conveyed to all affected employees, the servicing representative, or the manufacturer, as appropriate, and prior to handling, servicing, or shipping, so that appropriate precautions shall be taken.

7. Personal Protective Equipment (PPE): All employees performing tasks entailing reasonably anticipated exposure to blood or other potentially infectious materials will be provided and are required to use appropriate protective equipment such as, but not limited to gloves, gowns, face shields or masks, eye protection, and

mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Such equipment shall be repaired or replaced as needed to maintain its effectiveness, at no cost to the employee. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, 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.

Under the rare and extraordinary circumstances it is the employee's professional judgment that in the specific instance use of protective clothing and equipment would have prevented the delivery of health care of public safety services or would have posed an increased hazard to the safety of the worker or co-worker, the employee shall document these circumstances and inform a designated Infection Control Representative who shall investigate the circumstances and determine whether changes can be instituted to prevent such occurrences in the future. The Infection Control Representative shall document all such occurrences.

Appropriate personal protective equipment in the appropriate sizes shall be readily accessible at the worksite or issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

Any garment 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. When personal protective equipment is removed it shall be placed in an appropriately designated area or container for storage, decontamination, or disposal.

Gloves shall be worn when it can be reasonably anticipated that the employee may have contact with blood or other potentially infectious materials through mucous membranes, and non-intact skin or when performing vascular access procedures.

Disposable (single use) gloves such as surgical or examination gloves shall be replaced as soon as practical when contaminated, torn, punctured, or when their ability to function as a barrier is compromised. Disposable gloves shall not be washed or decontaminated for re-use.

Masks in combination with eye protection devices such as goggles or glasses with solid side shields or chin-length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

Protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in situations with reasonably anticipated exposure to blood or other potentially infectious materials.

8. Cleaning and Disinfection: The worksite shall be maintained in a clean and sanitary condition. The specific written schedules for cleaning and methods of decontamination outlined in the cleaning schedule shall be followed.

   All equipment and environmental working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials. Work surfaces shall be decontaminated with an appropriate disinfectant immediately, or as soon as feasible, when contaminated or after any spill of blood or other potentially infectious materials and at the end of the work shift if the surface may have become contaminated since the last cleaning.

   All bins, pails, cans, and similar receptacles intended for re-use which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated according to the cleaning schedule and decontaminated immediately or as soon as feasible upon visible contamination.

   Broken glass which may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means such as a brush and dustpan, tongs, or forceps. During use containers for contaminated sharps shall be easily accessible to all personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found, maintained upright throughout use, and replaced routinely when the container is two-thirds full.

9. Medical Waste: Medical waste shall be considered any liquid or semi-liquid blood, dried blood, or other potentially infectious material in any form. This includes any item which may have such materials on them in any form with the exception of reusable equipment, instruments, or reusable personal protective clothing and equipment which undergoes proper decontamination procedures.

   If outside contamination of medical waste containers occurs, it shall be placed in a second container. The second container shall be closable, constructed to contain all contents, and prevent leakage of fluids during handling, storage, transport, or shipping, and labeled or color-coded with fluorescent orange or orange-red labels with lettering or symbols in a contrasting color affixed to the container with string, wire, adhesive, or other method preventing loss or unintentional removal or in red bags substituted for labels. This container shall be closed prior to removal to prevent spills or protrusion of contents during handling, storage, transport, or shipping. Disposal of all Sharps and Medical Waste shall be in accordance with applicable laws and government regulations. Sealed bags may be taken to West Des Moines Public Safety Facility #19 at 8055 Mills Civic Parkway for disposal.

10. Laundry Practices: Contaminated laundry shall be handled as little as possible with a minimum of agitation and shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use. Contaminated laundry shall be placed and transported in yellow bags or containers labeled with lettering or symbols in a contrasting color affixed to the container by string, wire, adhesive, or other method preventing loss or

unintentional removal or in yellow bags substituted for labels. Universal Precautions shall be used in handling of all soiled laundry.

Whenever contaminated laundry is wet and presents a reasonable likelihood of soak-through or leakage from the bag or container, the laundry shall be placed and transported in bags or containers which prevent soak through or leakage of fluids to the exterior.

All employees who have contact with contaminated laundry shall wear protective gloves and other appropriate personal protective equipment.

Any laundry shipped off-site shall be placed in yellow containers with biohazard letters or symbols in a contrasting color affixed to the container by string, wire, adhesive, or other method preventing loss or unintentional removal.

3.7 Hepatitis B Vaccination

Hepatitis B vaccine and vaccination series shall be made available to all employees with reasonably anticipated exposure to blood or other potentially infectious material as determined by the Department Director or their representative. The vaccine shall be offered at no cost to the employee, at a reasonable time and place, and performed by or under the care of a licensed physician or under the supervision of another qualified healthcare professional. These shall be provided according to the recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place. All laboratory tests are to be conducted by an accredited laboratory at no cost to the employee.

Hepatitis B vaccination shall be made available after the employee has received initial education on the Hepatitis B vaccination and within 10 days of initial assignment to duties with reasonably anticipated exposure to blood or other potentially infectious materials unless: the employee has previously received the complete Hepatitis B vaccinations series, antibody testing has revealed that the subject is immune, or the vaccine is contraindicated for medical reasons. If employees initially decline the Hepatitis B vaccination but at a later date decide to accept, the vaccination will be given according to the provisions of this policy.

All employees who have reasonably anticipated exposure to blood or other potentially infectious material must consent or decline the Hepatitis B vaccination offered by the City via the Vaccination Consent Form.

See: Appendix 3.13.

3.8 Exposure Determination

Each Department Director will evaluate the job descriptions within their department and determine the potential exposure of each employee by job description and categorize them in one of the following categories:

No Exposure Possibility. This means that the employee has no definable possibility of being exposed to blood or other potentially infectious materials (OPIM). This employee will not be required to attend annual training and will not be offered the Hepatitis B immunization series.

Exposure Unlikely. This means by job description the employee has a remote likelihood of being exposed to blood and other potentially infectious materials. The employee will annually attend the Bloodborne Pathogens Education Program and be offered the Hepatitis B immunization series.

Exposure Likely. This means by job description the employee has a reasonable likelihood of being exposed to blood or other potentially infectious materials in the performance of their duties. This includes anyone who: a.) responds to calls for emergency medical services, b.) is involved directly with prisoners or patients, or c.) provides first aid as a part of their job activities. The employee will annually attend the Bloodborne Pathogens Education Program and be offered the Hepatitis B immunization series.

Each department may keep as an addendum to this control plan a listing of Exposure Determinations by job description as defined by the Department Director. The list shall identify tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals. Example: Job Title; Department; Location; Task and Procedure. Exposure Determination will be reviewed anytime a job description is created or updated.

Part-time, temporary, contract and per diem employees are covered by the ECP. These people shall be processed for occupational exposure in the same manner and on the same schedule as full-time new and existing employees.

3.9 Post-Exposure Evaluation and Follow-up

Any employee who experiences an exposure incident shall immediately notify their Supervisor both verbally and in writing by completing the Report of Injury or Illness and Authorization form. In the event it is unknown whether or not the exposure is significant, the Supervisor shall immediately notify the City's on-duty Division Chief at 515-222-3659 (office) or 515-202-4766 (mobile), and assure initial first aid is administered (cleaning, flushing, etc.).

If the exposure is significant, the employee should be taken or report to an Emergency Room. The Infection Control Representative will arrange to have an immediate confidential medical evaluation of the exposed employee. The employee should have all follow up appointments at Unity Point Health Des Moines Occupational Medicine (515-241-2020). See 3.14 Appendix A.

Unity Point Health Des Moines Occupational Medicine has a copy of OSHA's bloodborne pathogen standard on file.

The exposed employee or Infection Control Representative will provide Unity Point Health Des Moines Occupational Medicine with the following information after an exposure incident:

- A description of the employee's job duties relevant to the exposure incident.
- Route(s) of exposure.
- Circumstances of exposure.
- If possible, results of the source individual's blood test.
- Relevant employee medical records, including vaccination status.

Following initial first aid by Unity Point Health Occupational Medicine, or an emergency room licensed health care professional, the exposed employee or Infection Control Representative will cooperate and ensure the following activities are performed:

- Document the routes of exposure and how the exposure occurred.
- Identify and document the source individual (unless the employer can establish that identification is not feasible or prohibited by state or local law).
- Obtain consent and make arrangements to have the source individual tested as soon as possible to determine HIV, hepatitis C virus (HCV), and HBV infectivity; document that the source individual's test results were conveyed to the employee's health care provider. If the source individual is already known to be HIV, HCV and/or HBV positive, new testing need not be performed.
- Assure that the exposed employee is provided with the source individual's test results and with information about applicable restrictive disclosure laws and regulations concerning the identity and infectious status of the source individual (*e.g*., laws protecting confidentiality).
- After obtaining consent, collect the exposed employee's blood as soon as feasible after exposure incident and test blood for HBV and HIV serological status.
- If the exposed employee does not give consent for HIV serological testing during collection of blood for baseline testing, preserve the baseline blood sample for at least 90 days; if the exposed employee elects to have the baseline sample tested during this waiting period, perform testing as soon as feasible.

All medical evaluations and procedures performed as part of post-exposure evaluations and follow-up, including prophylaxis, are:

- Provided at no cost to the employee.
- Made available to the employee at a reasonable time and place.
- Performed by or under the supervision of a licensed physician or other licensed and qualified healthcare professional.

- Provided according to recommendations of the U.S. Public Health Service (USPHS) current at the time these evaluations and procedures take place. All laboratory tests are conducted by an accredited laboratory at no cost to the employee.

A copy of the evaluating healthcare professional's written opinion shall be obtained and provided to the employee within 15 days of the completion of the evaluation. The healthcare professional's opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for the exposed employee and if the employee has received such vaccination. The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to documenting that the employee has been informed of the results of the evaluation and that the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation and treatment. All other findings or diagnoses shall remain confidential and shall not be included in the written report.

The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV or HIV infectivity. If consent is not obtained, it shall be established that legally required consent cannot be obtained. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status need not be repeated. Results of the source individual's testing shall be made available to the exposed employee and to the licensed physician or healthcare official performing the required post-exposure medical evaluation and follow-up of the exposed employee. The employee shall be informed of applicable laws and regulations concerning restrictions on the disclosure of the identity and infectious status of the source individual.

Based upon the recommendation of the healthcare professional providing post-exposure evaluation, the exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained. If the employee consents to baseline blood collection but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service shall be given by or under the supervision of the licensed physician or other healthcare professional performing the post-exposure medical evaluation of the exposed employee.

Counseling and evaluation of reported illness shall be provided to the exposed employee by the licensed physician or other healthcare professional performing the post-exposure medical evaluation of the exposed employee as needed and indicated.

Evaluating Exposure Incidents

The Safety Supervisor Project Team or designee will review the circumstances of all exposure incidents to determine:

- Engineering controls in use at the time.
- Work practices followed.
- A description of the device being used (including type and brand).

- Protective equipment or clothing that was used at the time of the exposure incident (gloves, eye shields, etc.).
- Location of the incident.
- Procedure being performed when the incident occurred.
- Employee's training.

The Safety Supervisor Project Team will review all legally (non-confidential) available information about exposure incidents to determine if changes to the City's exposure control plan are warranted.

3.10 Biohazard Labeling

Warning labels shall be affixed to containers of regulated waste, refrigerators, and freezers containing blood or other potentially infectious material, and other containers used to store, transport, or ship blood or other potentially infectious materials, except that red bags or red containers may be substituted for labels. Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from these labeling requirements. Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment, or disposal are exempted from the labeling requirement.

Labels shall include the following legend and shall be fluorescent orange or orange-red or predominantly so, with lettering or symbols in a contrasting color. Labels are required to be affixed to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal. Such labels are required for contaminated equipment and shall also state which portion of the equipment remains contaminated.

3.11 Education and Training

All employees with reasonably anticipated exposure to blood or other potentially infectious materials shall participate in the Bloodborne Pathogens Education Program at no cost to the employee and during work hours. This shall occur at the time of initial assignment to tasks where occupational exposure may take place and at least annually thereafter. Additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures which affect the employee's occupational exposure shall be provided which may be limited to addressing the new exposures created.

Instructor Requirements. The person conducting the training is knowledgeable in the subject matter covered in the training program as it relates to City employees and their work.

The training program is appropriate in content and vocabulary to the educational level, literacy, and language of employees and contains a minimum of the following elements:

- An accessible copy of the regulatory text of OSHA Bloodborne Pathogen Standard and an explanation of its contents.
- A general explanation of the epidemiology and symptoms of bloodborne diseases.
- An explanation of the modes of transmission of bloodborne pathogens.
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- An explanation of the use and limitations of methods that will prevent or reduce exposure to include appropriate engineering controls, work practices, and personal protective equipment.
- Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- An explanation of the basis for selection of personal protective equipment.
- Information on the Hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and the vaccine and vaccination is offered free of charge.
- Information on the appropriate actions to take and persons to contact in an incident involving blood or other potentially infectious materials.
- An explanation of the procedure to follow if an exposure incident occurs, including the methods for reporting the incident and the medical follow up that is made available, as well as information on post-exposure follow-up that the City is required to provide for its employees following an exposure incident.
- An explanation of the signs and labels and/or color coding of Hazardous and Infectious Waste.
- An opportunity for interactive questions and answers with the person conducting the training session.

3.12 Recordkeeping

The City Human Resources Department shall ensure an accurate record is established and maintained for each employee with occupational exposure. The record shall include:

- The name and social security number of the employee.
- A copy of the employee's Hepatitis B vaccination status including the dates of all Hepatitis B vaccinations and any medical record relative to the employee's ability to receive vaccination.
- A copy of all results of examinations, medical testing, and follow-up procedures.
- The employer's copy of the healthcare professional's written opinion.
- A copy of the information provided to the healthcare professional.

Confidentiality. The City Human Resources Department shall ensure that employee medical records are:

- Kept confidential.

- Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required or permitted by law.
- The City will maintain the employee medical records for at least the duration of employment plus 30 years.

Training Records. Training records include the following information:

- The dates of the training session.
- The contents or a summary of the training session.
- The names and qualifications of the persons conducting the training.
- The names and job titles of all persons attending the training sessions.
- Training records shall be maintained in departmental records for a minimum of 3 years from the date on which the training occurred.

Availability of Records

- All records required to be maintained by this section are made available upon request to OSHA.
- Employee training records required by this paragraph are provided upon request for examination and copying to employees, to employee representatives, and to OSHA.
- Employee medical records required by this paragraph are provided upon request for examination or copying to OSHA or within 15 working days to the subject employee or anyone having written consent of the subject employee.
- A copy of this Exposure Control Plan is accessible and readily available to each employee during the normal work shift.
- OSHA standards shall be complied with during the transfer of employee medical records.

Sharps Injury Log

In addition to OSHA's Recordkeeping Requirements (Section 1904), all percutaneous injuries from contaminated sharps are also recorded in a Sharps Injury Log. The information in the Sharps Injury Log shall be recorded and maintained in such manner as to protect the confidentiality of the injured employee. All incidences must include at least: Date of the injury; type and brand of the device involved (syringe, suture needle); department or work area where the incident occurred; and an explanation of how the incident occurred. This log is reviewed as part of the annual program evaluation and maintained for at least five years following the end of the calendar year covered. If a copy is approved for release to anyone, the report must have any personal identifiers removed.

3.13 Appendix A: Vaccination Consent Form

UnityPoint Health
Des Moines

VACCINATION CONSENT

Occupational Medicine

Patient:_____DOB:_____

CONSENT TO THE ADMINISTRATION OF HEPATITIS B VACCINE

☐ Article I. I hereby request and consent to administration of the Hepatitis B vaccine.

I acknowledge that I have been given and have read or had read to me an information sheet entitled, "Hepatitis B Vaccine" that was prepared and published by the Center for Disease Control and distributed by the U.S. Department of Health and Human Services. I understand the nature, purpose, risks, benefits and alternatives, if any, connected with the Hepatitis B vaccine. I have had the opportunity to ask questions, and any questions I have asked have been answered to my satisfaction.

Article II. Signature*:_____Date: _____

** If patient lacks the legal capacity to consent, a person who has legal authority to consent on behalf of the patient should complete the following:*

Printed Name:_____Signature:_____Relationship to Patient:_____

DECLINATION OF HEPATITIS B VACCINE

☐ Article III. I decline Hepatitis B vaccination at this time.

I understand that due to my occupational exposure to blood or other potentially infectious materials, I may be at risk of acquiring Hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccine series at no charge to me.

Article IV. Signature*:_____Date: _____

** If patient lacks the legal capacity to consent, a person who has legal authority to consent on behalf of the patient should complete the following:*

Printed Name:_____Signature:_____Relationship to Patient:_____

DECLINATION OF HEPATITIS B VACCINE: PRIOR SERIES

☐ Article V. I decline Hepatitis B vaccination at this time. I have previously completed the Hepatitis B vaccine series.

Signature*:_____ Date: _____

** If patient lacks the legal capacity to consent, a person who has legal authority to consent on behalf of the patient should complete the following:*

Printed Name:_____Signature:_____Relationship to Patient:_____

VACCINE ADMINISTRATION

VIS Date:_____

Dose #1 Manufacturer:_____Lot #:_____Exp. Date:_____

Dose:_____mL Deltoid IM Site: ☐ R ☐ L Needle/Gauge:_____

Date: _____ Time:_____ Staff Signature:_____

****

Dose #2 Manufacturer:_____ Lot #:_____ Exp. Date:_____

Dose:_____mL Deltoid IM Site: ☐ R ☐ L Needle/Gauge:_____

Date: _____ Time:_____ Staff Signature:_____

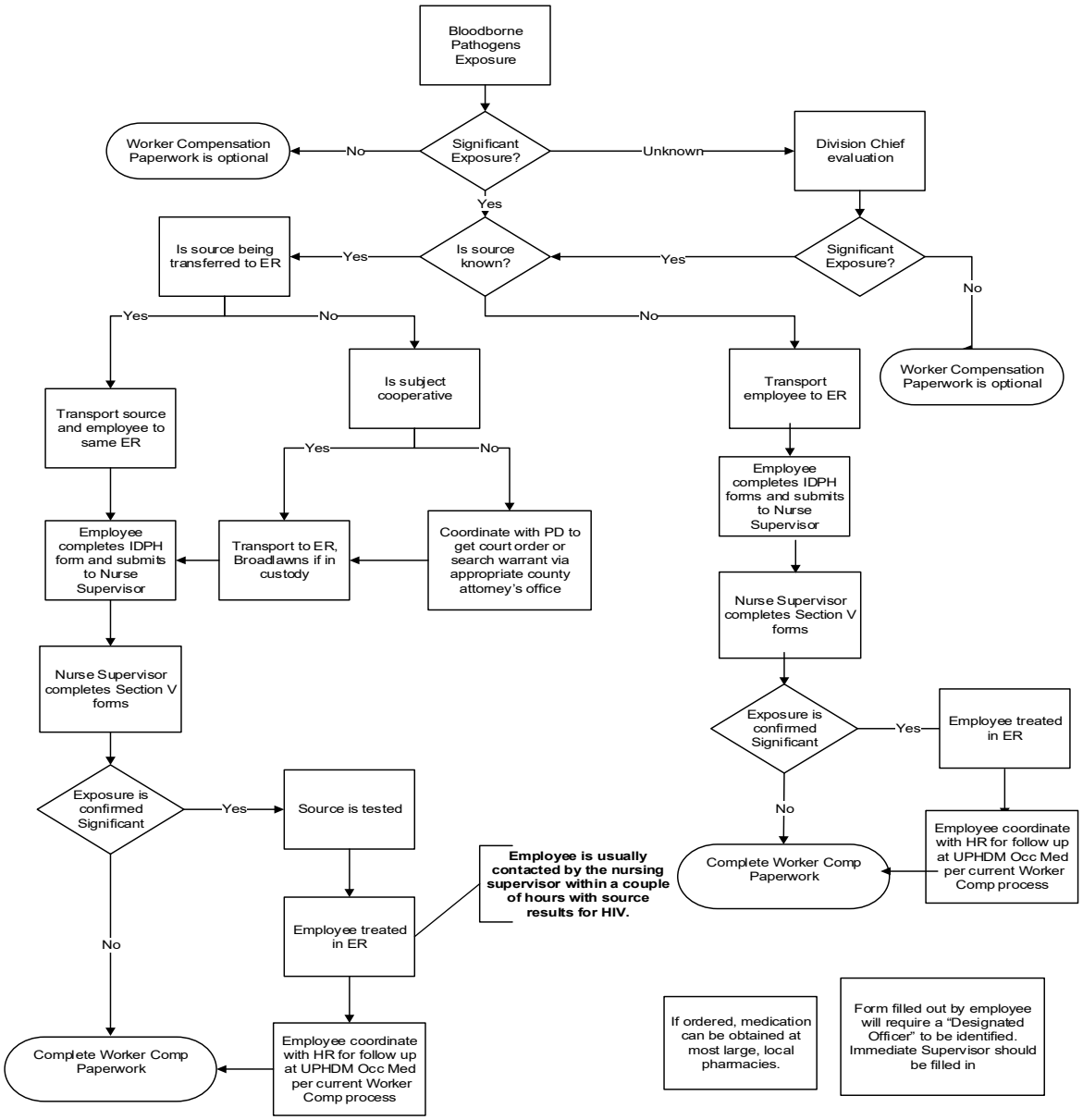
****

Dose #3 Manufacturer:_____ Lot #:_____ Exp. Date:_____

Dose:_____mL Deltoid IM Site: ☐ R ☐ L Needle/Gauge:_____

Date:_____ Time:_____ Staff Signature:_____

3.14 Appendix B: Bloodborne Pathogens Exposure Flow Diagram



Chapter 4 Control Of Hazardous Energy Sources (Lockout/Tagout)

29 CFR 1910.147
January 2017

4

4.1 Purpose

The purpose of this program is to protect employees from harm caused by the unexpected energization or startup of machines or equipment, or release of stored energy, while servicing and maintaining machines and equipment. This standard establishes minimum performance requirements for the control of such hazardous energy.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written lockout/tagout program in their respective departments.

4.2 Definitions

Affected employee means an employee whose job requires them to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.

Authorized employee means a person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Capable of being locked out means an energy isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energized means connected to an energy source or containing residual or stored energy.

Energy isolating device means a mechanical device that physically prevents the transmission or release of 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 ungrounded supply conductors, and, in addition, no pole can be operated independently.
- A line valve; a block; and any similar device used to block or isolate energy.
- Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Energy source means any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot tap means a procedure used in the repair, maintenance and service activities which involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout means the placement of a lockout device on an energy isolating device in accordance with an established procedure ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device means a device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevents the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal production operation means the utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance means workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting up means any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout means the placement of a tagout device on an energy isolating device in accordance with an established procedure to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device means a prominent warning device, such as a tab and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

4.3 General Requirements

City Department Director or the Department Safety Supervisor will develop supplements to this program that describe machine-specific energy control procedures (lockout/tagout procedures) that are consistent with this program.

This program applies to the control of energy during servicing and/or maintenance of machines and equipment. Servicing and/or maintenance which takes place during normal production operations is covered by this program if:

- An employee is required to remove or bypass a guard or other safety device.

- An employee is required to place any part of their body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Normal production operations. Minor tool change and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this program if they are routine, repetitive, integral to the use of the machine or equipment for production, and that the employee performing the work is effectively protected from unexpected energization, start up or release of stored energy by alternative measures, such as machine guarding.

This program does not apply to the following:

(1) Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start-up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

(2) Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines, provided it is demonstrated that:

- continuity of service is essential;
- shutdown of the system is impractical;
- documented procedures are followed; and
- special equipment is used which will provide proven effective protection for our employees.

4.4 Program Implementation

The City will establish a program and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy in order to prevent injury to employees.

The City shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start-up or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

If an energy isolating device is not capable of being locked out, the City's energy control program shall utilize a tagout system.

Whenever replacement or major repair, renovation of modification of a machine is performed, and whenever new machines or equipment are installed, energy

isolating devices for such machine or equipment shall be designed to accept a lockout device.

4.5 Full Employee Protection

Lockout equivalency demonstration. In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, the City shall demonstrate full compliance with all tagout-related provisions together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection shall include, where possible, the implementation of additional safety measures such as the:

- Removal of isolating circuit elements.
- Blocking of a controlling switch.
- Opening of an extra disconnecting device.
- Removal of a valve handle to reduce the likelihood of inadvertent energization.
- Posting of an employee watch to ensure compliance with tagout provisions.

4.6 Assessing the Need for Energy Controls

The Safety Supervisor Project Team shall cooperate with each Department Director or designee to determine which machines or pieces of equipment require machine-specific energy control supplements (lockout/tagout procedures). A complete listing of machines and equipment requiring or having such procedures will be maintained.

4.7 Energy Control Procedure Exceptions

Once a machine or equipment evaluation has been accomplished, machine-specific energy control supplements (lockout/tagout procedures) do not need to be developed for that machine or equipment when the following conditions exist:

- The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shutting down which could endanger employees.
- The machine or equipment has a single energy source which can be readily identified and isolated.
- The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
- The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
- A single lockout device will achieve a locked-out condition.

- The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance.
- The servicing or maintenance does not create hazards for other employees.
- The City, in utilizing this exception, has had no accidents involving the unexpected activation or reenergization of the machine or equipment during servicing or maintenance.

4.8 Energy Control Procedures

Machine-specific energy control supplements (lockout/tagout procedures) to the City's Control of Hazardous Energy Sources Program have been developed and are reviewed on an annual basis.

The following format will be followed for each machine requiring such supplement procedures. The respective Department Directors will be responsible for the implementation of these procedures.

The supplementary procedures shall clearly and specifically indicate how they will be used to control hazardous energy, and the means to enforce compliance including, but not limited to, the following:

- A clear identification of the machine covered by the procedure.
- Notice that the procedure is a supplement of the City's program for the control of hazardous energy sources.
- A specific statement of the intended use of the procedure.
- Identification of the names or titles of employees or third parties who are authorized to perform the servicing and/or maintenance on the described machine.
- Notification of all affected and authorized employees, and any necessary supervisory personnel, of the plan to lockout/tagout the machine.
- Specific procedural steps, in proper order, for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy (manufacturer's specifications will be followed whenever possible).
- The identification of each energy-isolating device to be controlled, including pictures or illustrations.
- Specific method for the placement, removal, and transfer of lockout devices or tagout devices on each energy-isolating device.
- Identification of the person(s) responsible for each lockout and tagout device, if available.
- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

- Steps required to be taken prior to restoring the machine to operation including:
  - Inspecting the work area to assure all personnel, parts, and tools are clear from the machine and work area and machine or equipment guards are reinstalled.
  - Notifying all affected employees that lockout/tagout devices will be removed.
  - Removing, by the person(s) who installed them, all lockout devices in the opposite sequence (reverse order) of previous steps.
  - Reconnecting the energy sources.
  - Operating the machine and assuring its operation meets City and manufacturer standards for safe operation.

Each department has its own machine-specific energy control supplement procedures. The master copy is located online.

4.9 Protective Materials and Hardware

Appropriate lockout devices such as locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the City for isolating, securing, or blocking of machines or equipment from energy sources.

1. Selection criteria. Lockout devices and tagout devices shall be singularly identified; shall be the only device(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

   - Selected lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
   - Selected tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.
   - Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.
   - Standardization. Lockout and tagout devices shall be standardized in at least one of the following criteria: color, shape, or size, and additionally, in the case of tagout devices, print and format shall be standardized.

2. Removal requirements

   - Lockout devices. 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.

- Tagout devices. Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device 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 and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

3. Identification requirements

- Lockout/tagout devices shall indicate the identity of the employee applying the device(s).
- Tagout devices shall warn against hazardous conditions if the machine or equipment is de-energized and shall include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate, etc.

4.10 Periodic Inspections and Certifications

1. Inspections. The City shall conduct a periodic inspection of the energy control procedure for each machine or piece of equipment at least annually to ensure that the procedure and the requirements of this program are being followed.

- The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the energy control procedure being inspected.
- Inspections will be conducted by the personnel authorized to evaluate lockout/tagout requirements.
- The periodic inspection shall be conducted to correct any deviations or inadequacies identified.
- Lockout inspections. Where lockout is used for energy control, the periodic inspection shall include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control procedure being inspected.
- Tagout inspections. Where tagout is used for energy control, the periodic inspection shall include a review between the inspector and each authorized and affected employee of that employee's responsibilities under the energy control procedure being inspected.

2. Certifications. The City shall certify that the periodic inspections have been performed. The certification shall as a minimum identify:

- The machine or equipment on which the energy control procedure was being utilized.
- The date of the inspection.
- The employees included in the inspection.
- The person performing the inspection.

4.11 Initial Training

The City shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

- Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- Each affected employee shall be instructed in the purpose and use of the energy control procedure.
- All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

When tagout systems are used, employees shall also be trained in the following limitations of tags:

- Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area in order to be effective. Non-legible or missing tags will be reported to the Department Director immediately.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

4.12 Refresher Training

Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

Additional retraining shall also be conducted whenever a periodic inspection reveals or whenever a Department Director or Supervisor has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

The City shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

4.13 Energy Isolation

Lockout or tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

4.14 Notification of Employees

Affected employees shall be notified of the application and removal of lockout devices or tagout devices. Notification shall be given before the controls are applied and after they are removed from the machine or equipment.

4.15 Application of Control

The lockout or tagout procedures shall cover the following elements and actions and shall be done in the following sequence:

1. Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

2. Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any

additional or increased hazard(s) to employees as a result of the equipment stoppage.

3. Machine or equipment isolation. All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

4. Lockout device application:

   - Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.
   - Lockout devices, where used, shall be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position.

5. Tagout device application. Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

6. Stored energy:

   - Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.
   - If there is a possibility of re-accumulation or stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

7. Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.

4.16 Release from Lockout or Tagout

Before lockout and tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed, and actions taken by the authorized employee(s) to ensure the following:

- The machine or equipment. The work area shall be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.
- Employees. The work area shall be checked to ensure that all employees have been safely positioned or removed.

After lockout or tagout devices are removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed.

Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device. When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the Department Director, provided that specific procedures and training for such removal have been developed, documented, and incorporated into the City's energy control program. The City shall demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

- Verification that the authorized employee who applied the device is not at the facility.
- Making all reasonable efforts to contact the authorized employee to inform them that their lockout or tagout device will be or, afterward, has been removed.
- Ensuring that the authorized employee has this knowledge before they resume work at that facility.

4.17 Testing of Machines, Equipment, or Components

In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment, or component thereof, the following sequence of actions shall be followed:

- Clear the machine or equipment of tools and materials (the work area shall be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are operationally intact.).
- Remove employees from the machine or equipment area (assure all employees are safely positioned and notified that re-energizing will occur).
- Remove the lockout or tagout devices as specified as part of the individual machine procedures (by employee(s) who applied the device(s)).
- Energize and proceed with testing or positioning.

- De-energize all systems and reapply energy control measures in accordance with machine procedures (Application of Control) and continue the servicing and/or maintenance.

4.18 Non-City Personnel (Contractors and Others)

Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this instruction, the Department Director or designee and the outside employer shall inform each other of their respective lockout or tagout procedures. The Department Director shall ensure that their employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

4.19 Group Lockout or Tagout

When servicing and/or maintenance is performed by a crew, craft, department, or other group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. Group lockout or tagout devices shall be used in accordance with the procedures required by this program governing individual procedures which shall include, but not necessarily limited to, the following specific requirements:

- Primary responsibility will be vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock).
- Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment will be made.
- When more than one crew, craft, department, etc. is involved, assignment of overall job lockout or tagout control responsibility will be vested to an authorized employee designated to coordinate affected work forces and ensure continuity or protection.
- Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when they begin work, and shall remove those devices when they stop working on the machine or equipment being serviced or maintained.

4.20 Shift or Personnel Changes

Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provisions for the orderly transfer of lockout or tagout device protection between off-going and oncoming

employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

Chapter 5 Respiratory Protection Program

29 CFR 1910.134
January 2017

5

5.1 Purpose

The purpose of this program is to protect employees from breathing contaminated air while at work.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written respiratory protection program in their respective departments.

5.2 Engineering Controls

To control and or minimize the threat of occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the City will, as far as feasible, implement accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective

engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

5.3 Respirator Usage

This program is intended to assure the use of respirators is effective and in compliance with OSHA standards. Respirators must be NIOSH approved, certified for use with the specific air contamination hazard, properly fitted to the medically qualified user and properly cared for.

This program is also designed to regulate the voluntary use by employees of particulate respirators (dust masks) during certain operations that do not require respiratory protection. The City will only approve such use if the health and safety of the users are not jeopardized, and the users understand the limitations of this type of respirator.

5.4 Voluntary Respiratory Filtration Usage

If the Respiratory Program Administrator (RPA) has verified a work area does not require respiratory protection during the performance of employees' duties and because of occasional nuisance dust in the work area, the RPA may authorize an employee to voluntarily wear a filtering device classified by its manufacturer as a comfort mask, dust mask, particulate respirator or general facepiece filtration device. The RPA may provide such respirators at the request of employees or permit employees to use their own respirators. Before permitting their use, the RPA shall verify that:

- The use of such respirator will not in itself create a hazard.
- Any employee using a respirator voluntarily is medically able to use that respirator.
- The respirator is properly stored when not in use.
- The respirator is properly discarded when and as required.
- The user reads, understands, and acknowledges the provisions of OSHA standard 29 CFR 1910.134, appendix D, entitled Information for Employees Using Respirators When Not Required Under the Standard (Appendix A of this program).

5.5 Respiratory Program Administrator

The Human Resources Department, in cooperation with the Safety Supervisor Project Team, shall designate a Respiratory Program Administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness. The Respiratory Program Administrator will assure that respirators, training, and medical evaluations are provided at no cost to the employee.

5.6 Definitions

The following definitions are important terms used in the respiratory protection program.

Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Atmosphere-supplying respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Demand respirator means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator means a respirator intended to be used only for emergency exit.

Filter or air purifying element means a component used in a respirator to remove solid or liquid aerosols from the air.

Filtering facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Interior structural firefighting means the physical activity of fire suppression, rescue, or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

Loose-fitting facepiece means a respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere means an atmosphere with an oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (*i.e.,* license, registration, or certification) allows them to independently provide, or be delegated the

responsibility to provide, some or all of the health care services required by paragraph (e) of the OSHA Respirator Standard.

Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

Respiratory Program Administrator (RPA) is the person designated in each department that would require this program, that is responsible to administer the department’s respiratory protection program and conduct the required evaluations of program effectiveness. The Respiratory Program Administrator may delegate to qualified personnel the administration of elements of this Program.

Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user. This section means this respiratory protection standard.

Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face.

User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

5.7 Respirator Selection and Usage

1. **Selection**. The Respiratory Program Administrator (RPA) may form a respiratory selection committee to assist in evaluating respirators prior to purchase. Respirators will be selected and provided based on relevant factors, including:
   - The respirator is adequate to protect the health of the employee.
   - The hazards to which each worker is exposed, *e.g*., to protect the employee against dust, ammonia, paints, or other air contaminants, depending upon applicability.
   - Workplace and user factors that affect respirator performance and reliability.
   - The respirator will ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
   - Evidence that the respirator manufacturer's certification meets the respiratory protection requirements for each job.
   - Approval for the intended use by NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services.

2. Usage. The use of respirators shall be subject to the following:
   - Each employee who wears a respirator while performing a job at the City will be instructed in the proper use of the respirator and its limitations.
   - User Seal Check Procedures (Mandatory): The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this program, or the respirator manufacturers recommended user seal check method shall be used.
   - All non-disposable respirators will be regularly cleaned and disinfected. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.
   - Respirators will be stored in convenient, clean, and sanitary locations.
   - Respirators used routinely will be inspected during cleaning. Worn or deteriorated parts will be replaced.

5.8 Medical Monitoring

Employees of the City will not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment.

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. These minimum requirements for medical evaluation ensure the employee's ability to use a respirator.

1. General: The Respiratory Program Administrator (RPA) will provide a medical evaluation to determine the employee's ability to use a respirator before the employee is fit tested or required to use the respirator in the workplace. The RPA may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

2. Medical evaluation procedures: The RPA will identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire. The medical evaluation will obtain the information requested by Part A, Sections 1 and 2 of the OSHA Respirator Medical Evaluation Questionnaire in Appendix C of 1910.134.

3. Follow-up medical examination: The RPA will ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A in the OSHA Respiratory Medical Evaluation Questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination.

   The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

4. Administration of the medical questionnaire and examinations: The medical questionnaire and examinations will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. The RPA will provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

5. Supplemental information for the PLHCP: The following information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

   - The type and weight of the respirator to be used by the employee.
   - The duration and frequency of respirator use (including use for rescue and escape).
   - The expected physical work effort.

- Additional protective clothing and equipment to be worn.
- Temperature and humidity extremes that may be encountered.

Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same. The RPA will provide the PLHCP with a copy of the written respiratory protection program and a copy of the relevant provisions of 29 CFR 1910.134 and appendices.

When the City replaces a PLHCP, the RPA must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP. OSHA does not expect the City to have employees medically reevaluated solely because a new PLHCP has been selected.

6. Medical determination: In determining the employee's ability to use a respirator, the RPA shall obtain a written recommendation from the PLHCP regarding the employee's ability to use the respirator. The recommendation will provide only the following information:

   - Any limitations on respirator use related to the medical condition of the employee or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.
   - The need, if any, for follow-up medical evaluations.
   - A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

   If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the RPA shall provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator or provide the employee with an alternative job function; if a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then the RPA is no longer required to provide a PAPR.

7. Additional medical evaluations: At a minimum, the RPA will provide additional medical evaluations that comply with the OSHA respiratory protection standard when:

   - An employee reports medical signs or symptoms that are related to the ability to use a respirator.
   - A PLHCP, Supervisor, or the RPA informs the City that an employee needs to be re-evaluated.

- Information from the Respiratory Protection Program, including observations made during fit testing and program evaluation, indicates a need for employee re-evaluation.
- A change occurs in workplace conditions (*e.g.*, physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

5.9 Fit Testing

Fit testing is required on each employee who will wear a respirator with a negative or positive pressure tight-fitting facepiece. The employee must be fit tested with the same make, model, style, and size of respirator that will be used. The employee must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) as described in 1910.134 Appendix A (Mandatory Fit Test Procedures). This fit testing will be conducted at least annually.

The Respiratory Program Administrator shall conduct fit testing using the following procedures. These requirements apply to all OSHA-accepted fit test methods, both QLFT and QNFT. The qualitative fit testing may be performed by the supplier of the respirators or designated competent personnel.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

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 an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.

3. The test subject shall be informed that they are being asked to select the respirator that provides the most acceptable 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 chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.

5. The more acceptable facepieces are noted in case the one selected proves unacceptable; 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 the following paragraph 6. 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 a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
   a. Position of the mask on the nose.
   b. Room for eye protection.
   c. Room to talk.
   d. Position of mask on face and cheeks.

7. The following criteria shall be used to help determine the adequacy of the respirator fit:
   a. Chin properly placed.
   b. Adequate strap tension, not overly tightened.
   c. Fit across nose bridge.
   d. Respirator of proper size to span distance from nose to chin.
   e. Tendency of respirator to slip.
   f. Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in 1910.134 Appendix B-1 or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B–1. Before conducting the negative and positive pressure checks, 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 facepiece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache, or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, they shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing their duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen: Prior to the commencement of the fit test, the test subject 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 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14. Test Exercises:

(A) The following test exercises are to be performed for all fit testing methods prescribed in 1910.134 Appendix A, except for the CNP method. A separate fit testing exercise regimen is contained in the CNP protocol.

The test subject shall perform exercises, in the test environment, in the following manner:

a. Normal breathing: In a normal standing position, without talking, the subject shall breathe normally.
b. Deep breathing: In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
c. Turning head side to side: Standing in place, the subject shall slowly turn their 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.
d. Moving head up and down: Standing in place, the subject shall slowly move their head up and down. The subject shall be instructed to inhale in the up position (*i.e.,* when looking toward the ceiling).
e. Talking: The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

> Rainbow Passage: When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a person looks for something beyond reach, friends say the person is looking for the pot of gold at the end of the rainbow.

f. Grimace: The test subject shall grimace by smiling or frowning (This applies only to QNFT testing; it is not performed for QLFT).
g. Bending over: The test subject shall bend at the waist as if they were to touch their toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
h. Normal breathing: Same as exercise (a).

(B) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

5.10 Corrective Glasses

Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eyeglasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Wearing of contact lenses in contaminated atmospheres with a respirator will not be allowed. Systems have been developed for mounting corrective lenses inside the full facepieces. When an employee must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

5.11 Respirators for IDLH Atmospheres

The Respiratory Program Administrator (RPA) will provide the following respirators for employee use in IDLH atmospheres:

- A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or
- A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

Respirators provided only for escape from IDLH atmospheres will be NIOSH-certified for escape from the atmosphere in which they will be used. All oxygen-deficient atmospheres will be considered IDLH.

Exception: If the City demonstrates that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges specified in Table 5-1 of this section (*i.e.,* for the altitudes set out in the table), then any atmosphere-supplying respirator may be used.

Table 5-1

Altitude (ft.) Oxygen deficient Atmospheres (% 02) for which City of West Des Moines may rely on atmosphere-supplying respirators

Less than 3,001	16.0–19.5
3,001–4,000	16.4–19.5
4,001–5,000	17.1–19.5
5,001–6,000	17.8–19.5
6,001–7,000	18.5–19.5
7,001–8,000 [1]	19.3–19.5

1. Above 8,000 feet the exception does not apply. Oxygen-enriched breathing air must be supplied above 14,000 feet.

For all IDLH atmospheres, the City will ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere.
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue.
- The RPA or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue.
- The RPA or designee authorized to do so, once notified, provides necessary assistance appropriate to the situation.
- Employee(s) located outside the IDLH atmospheres are equipped with:

    - Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either

- Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
- Equivalent means for rescue where retrieval equipment is not required under 29 CFR subsection 1910.134 (g)(3)(vi)(B).

For Interior Structural Firefighting or Hazmat Operations, if the City elects to have employees involved with either, it will ensure that:

- At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times.
- At least two employees are located outside the IDLH atmosphere.
- All employees engaged in interior structural firefighting use SCBAs.

Note 1: One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

Note 2: Nothing in this section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

5.12 Respirator Training

For safe use of any respirator, it is essential that the user be properly instructed in its selection, use and maintenance before being permitted to use it. Both Supervisors and workers shall be so instructed by competent persons. This training will be conducted annually or more often if necessary.

Minimum training shall include the following:

- Instruction in the nature of the hazard, whether acute, chronic, or both, and an accurate appraisal of what may happen if the respirator is not used.
- Explanation of why more positive control is not immediately feasible. This shall include recognition that every reasonable effort is being made to reduce or eliminate the need for respirators.
- A discussion of why this is the proper type of respirator for the particular purpose.
- A discussion of the respirator's capabilities and limitations.

- Instruction and training in actual use of the respirator (especially a respirator for emergency use) and close and frequent supervision to assure that it continues to be properly used.
- How improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- How to inspect, put on and remove, use, and check the seals of the respirator. User seal check procedures for a tight-fitting respirator shall comply with Appendix B-1 of 1910.134.
- What the procedures are for maintenance and storage of the respirator.
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
- Classroom and field training to recognize and cope with emergency situations.
- Other special training as needed for special use.

Training shall provide the employee with an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a long familiarity period, and finally, to wear it in a test atmosphere. Records shall be kept on attendance of respirator training programs.

Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be a growth of beard, sideburns, a skull cap that projects under the facepiece or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic checks. To assure proper protection, the facepiece fit shall be checked by the wearer each time the employee puts on the respirator.

Retraining shall be administered annually, and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete;
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

5.13 Standard Operating Procedures

1. **Self-Contained Breathing Apparatus**

The objective is to use the self-contained breathing apparatus properly and safely. The procedure is to:

- Read and follow the manufacturer's instructions.
- Open the case and remove the facepiece.
- Check the level on the cylinder gauge. It must read full or do not attempt to use the SCBA.
- Don the cylinder/harness assembly according to instructions.
- Fasten all straps and adjust for comfortable fit.
- Check to see that purge valve is closed on breathing regulator. Blow lightly into breathing regulator to ensure proper operations of exhalation valve. Fully depress air-saver switch and release.
- Reach back with right hand and fully open cylinder valve. The vibralert alarm should sound momentarily.
- Don facepiece according to the manufacturer's instruction. Make both a positive and negative pressure field fit test. The facepiece shall be the same model in which the operator was fit tested.
- Attach breathing regulator. Place against the facepiece with purge valve in the 12 o'clock position and rotate one-quarter turn to the left. Breathing regulator will lock into position. Inhalation will automatically initiate proper operation of the apparatus and supply breathing air to the facepiece.
- To doff or remove apparatus, remove breathing regulator by pressing release button and turning 1/4 turn to the right. At this time air will rush freely from the breathing regulator. Depress air-saver switch, close the cylinder valve, and open purge valve to bleed off pressure. Remove the face piece and cylinder and harness, clean and store according to the manufacturer's instructions.

2. **Air Purifying Respirators**

The objective is to use the air purifying respirator properly and safely. The procedure:

- Ensure that the oxygen content in the area where air purifying respirator is to be worn is at least 19.5%.
- Do not use in areas immediately dangerous to life or health, such as, 30 ppm for chlorine and 50 ppm for anhydrous ammonia.
- Read and follow the instructions provided by the manufacturer of the respirator.
- Make sure that respirator is assembled correctly and is equipped with the proper filter or canister for the work to be performed.
- If full facepiece style respirator, remove protective eyewear. If necessary, a Spectacle Mount may be used for holding corrective eyewear inside the facepiece.
- Loosen both ratchet adjustments or holding straps on the headgear.

- Place mask on the face with headgear raised over the head. Grasp outlet at the front with one hand to hold respirator facepiece against the face. With the other hand, move molded headgear down over the head or pull straps over the back side of your head. Tighten each ratchet adjustment or pull straps for a comfortable fit.
- Perform a positive pressure test by completely covering the exhalation valve while gently exhaling into the facepiece. There should be no escape of air from the facepiece.
- Perform a negative pressure test by covering the inlet openings completely with the palm of your hands. Do not press the respirator against the face. The user should inhale slightly so the respirator collapses against the face. No inward leakage should be detectable.

3. **Dust Mask Respirators**

The objective is to use the filtering facepiece respirator properly and safely. The procedure is to:

- Ensure that the oxygen content in the area where air purifying respirator is to be worn is at least 19.5%.
- Don dust mask by placing mask over nose and mouth and pulling straps over your head.
- Mold nose piece to your nose by forming metal nosepiece if equipped. Be careful not to pinch too tightly or you will not be able to breathe through your nose.
- Respirator should be worn until breathing becomes slightly difficult. This means it is time to change filters or discard disposable type dust masks. Disposable dust mask must have straps pulled and broken to be properly disposed of in accordance with OSHA regulations.
- Remember, the typical dust mask offers no protection from organic vapors, extremely hazardous dusts, or airborne particulates such as asbestos or paint fumes.

Respirators Available at City of West Des Moines

Manufacturer	Type	Containment	Misc. Info
	Dust Mask		
	Half Mask Respirator		
	Full Face Respirator w/Canister		
	Self-Contained Breathing Apparatus		

SCBA Tank Records

Serial Number	Manufactured Date	Fill Date	Hydrostatic Test Date

The department will collect the appropriate information and keep records for available respirators per location.

5.14 Cleaning of Respirators

Respirators must be cleaned and disinfected as frequently as necessary to ensure that proper protection is provided to the wearer.

- If worn regularly by one person, the equipment shall be cleansed, disinfected, and stored in a dry place out of direct sunlight.
- Equipment used by other persons will be cleansed and disinfected after each use.
- Mechanical servicing of respirator equipment may only be done by personnel trained and certified for that duty. Untrained personnel must never attempt to repair or modify respirator equipment.
- Respirators used for fit testing and training will be cleaned after each use.

Mandatory Respirator Cleaning Procedures are provided for employee's use when cleaning respirators. They are general in nature, and the employee as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in this procedure and must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

<u>Procedures for Cleaning Respirators.</u>

1. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses or any components recommended by the manufacturer. Discard or repair any defective parts.

2. Wash components in warm (43° C [110°F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

3. Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain.

4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

- Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43° C (110° F); or,
- Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6–8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43°C (110° F); or
- Other commercially available cleansers of equivalent disinfectant quality when used as directed if their use is recommended or approved by the respirator manufacturer.

5. Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

6. Components should be hand-dried with a clean lint-free cloth or air-dried.

7. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.

8. Test the respirator to ensure that all components work properly.

5.15 Continuing Respirator Effectiveness

Appropriate surveillance will be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the RPA will re-evaluate the continued effectiveness of the respirator.

The RPA will ensure that employees leave the respirator use area:

- To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use.
- If they detect vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece.
- To replace the respirator or the filter, cartridge, or canister elements.

If the employee detects vapor or gas breakthrough, changes in breathing resistance or leakage of the facepiece, the employee will replace or repair the respirator before returning to the work area.

5.16 Storage of Respirators

All respirators will be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they will be packed or stored to prevent deformation of the facepiece and exhalation valve. At a minimum, respirators will be stored in a zip-lock type bag.

Emergency respirators will be:

- Kept accessible to the work area.
- Stored in compartments or in covers that are clearly marked as containing emergency respirators.
- Stored in accordance with any applicable manufacturer instructions.

5.17 Inspection of Respirators

All respirators used in routine situations will be inspected before each use and during cleaning.

All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations and will be checked for proper function before and after each use.

Emergency escape-only respirators will be inspected before being carried into the workplace for use.

The RPA will ensure that respirator inspections include the following:

- A check of respirator function, tightness of connections and the condition of the various parts including, but not limited to; the facepiece, head straps, valves, connecting tube and cartridges, canisters, or filters.
- A check of elastomeric parts for pliability and signs of deterioration.

Self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders will be maintained in a fully charged state and will be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. The RPA determines that the regulator and warning devices function properly.

For respirators maintained for emergency use, the RPA will:

- Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the

inspection, the findings, required remedial action and a serial number or other means of identifying the inspected respirator.

- Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator or is included in inspection reports stored as paper or electronic files. This information will be maintained until replaced following a subsequent certification.

5.18 Repair of Respirator

The RPA will ensure that respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and will use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.
- Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed.
- Reducing and admission valves, regulators and alarms will be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

5.19 Breathing Air Quality and Use

Employees using atmosphere-supplying respirators (supplied-air and SCBA) shall be provided with breathing gases of high purity.

The City will ensure that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration accords with the following specifications:

1. Compressed and liquid oxygen will meet the United States Pharmacopoeia requirements for medical or breathing oxygen.

2. Compressed breathing air will meet at least the requirements for Type 1-Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G–7.1–1989, to include:

    - Oxygen content (v/v) of 19.5– 23.5%.
    - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less.
    - Carbon monoxide (CO) content of 10 ppm or less.
    - Carbon dioxide content of 1,000 ppm or less.
    - Lack of noticeable odor.

The RPA will ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.

The RPA will ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

The RPA will ensure that cylinders used to supply breathing air to respirators meet the following requirements:

- Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178).
- Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1—Grade D breathing air.
- The moisture content in the cylinder does not exceed a dew point of ′50 °F (′45.6°C) at 1 atmosphere pressure.

The RPA will ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:

- Prevent entry of contaminated air into the air-supply system.
- Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 °C) below the ambient temperature.
- Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters will be maintained and replaced or refurbished periodically following the manufacturer's instructions.
- Have a tag containing the most recent change date and the signature of the person authorized by the City to perform the change. The tag will be maintained at the compressor.

For compressors that are not oil-lubricated, the RPA will ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.

For oil-lubricated compressors, the City will use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply will be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

The RPA will ensure that breathing air couplings are incompatible with outlets for nonrespirable worksite air or other gas systems. No asphyxiating substance will be introduced into breathing air lines.

The RPA will use breathing gas containers marked in accordance with the NIOSH respirator certification standard, 42 CFR part 84.

5.20 Program Evaluation

The RPA shall conduct evaluations of the workplace as necessary to ensure that the provisions of this program are being effectively implemented and that it continues to be effective. Employee exposure and stress will be monitored.

The RPA will evaluate the training activities periodically and revise them when appropriate. The RPA will regularly inspect and evaluate the effectiveness of the Respiratory Protection Program (at least annually).

The RPA shall regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);
- Appropriate respirator selection for the hazards to which the employee is exposed;
- Proper respirator use under the workplace conditions the employee encounters; and
- Proper respirator maintenance.

Employees who wear respirators for comfort use only and not for protection from a known contaminant will comply with Appendix “A” of this program.

5.21 Appendix A: Non-Mandatory Use of Respirators

Section 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

At this time, no areas have been identified where Respiratory protection is required during the performance of employees' duties. However, some employees have requested that they be permitted to wear some sort of filtering device due to occasional nuisance dust in the work areas.

Products being requested by employees have classifications by the manufacturers as comfort masks (filters) or particulate respirators. Since no specific hazards have been identified at this time, products being purchased are not considered for any specific use, just general filtration.

Though the employees are using these items for nuisance dust situations, it is important that they read and understand the information provided by the product manufacturer. The following appendix to the OSHA Standard 1910.134, reiterates the employee's responsibility to understand the purpose and limitations of the product they are using for filtration:

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator. At the end of your shift / work assignment, break or cut the straps of the filter masks (so no one else uses it by mistake) and dispose of in the trash.

It is important that employees opting to wear these respiratory filtration devices understand that the items being provided are for general nuisance dust situations, not for any specific hazard material. If you have concern regarding any hazard associated with the material causing the nuisance, you need to check the SDS for that material. You may also contact the Human Relations Department with additional concerns.

The City of West Des Moines has informed me of this Standard and provided me with a copy.

_____ _____

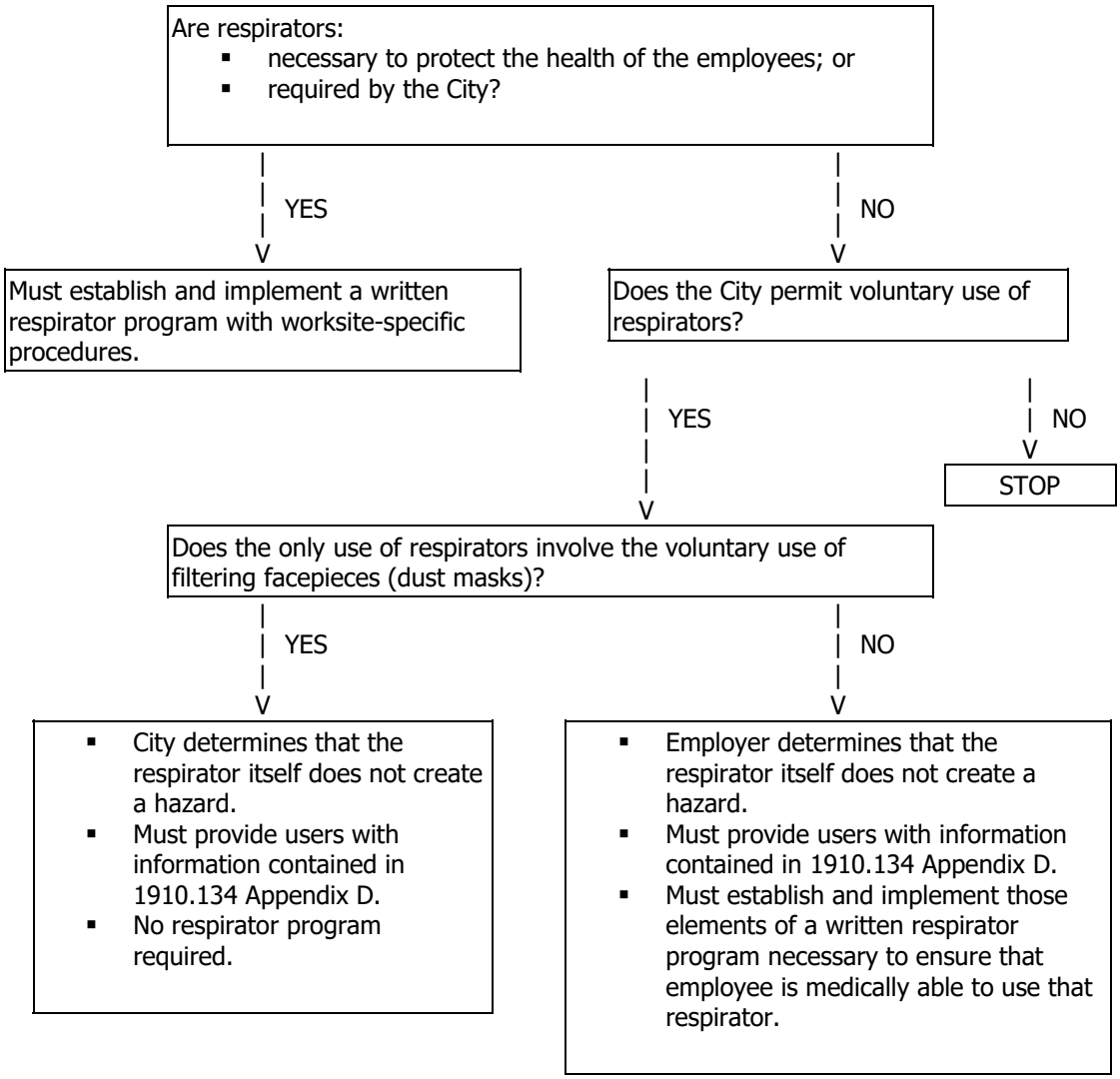
(Please print name) Date

_____

Signature

5.22 Appendix B: Respirator-Use Requirements Flow Chart

Respirator-Use Requirements Flow Chart
29 CFR 1910.134(c)



Chapter 6 Confined Space Program

29 CFR 1910.146
Revised January 2017

6

6.1 Purpose

The purpose of this program is to identify any confined spaces and to protect our employees from the hazards they pose.

A confined space is commonly defined as an enclosed area with limited accessibility and room (space) that is only entered by workers to perform maintenance. Confined spaces can be extremely hazardous. Hazards often include limited oxygen, electrocution, entrapment, dangerous moving parts, and submersion in liquids or free-flowing granular solids such as in grain bins.

Confined space accidents are common, often fatal, and can be avoided with proper planning. Too often, would-be rescuers panic and unnecessarily risk their own lives.

If the City has any confined spaces, affected workers must be trained to recognize them, to avoid their hazards and to rescue someone from them. This written program will be available for inspection by employees, their authorized representatives and government inspectors.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

The Safety Supervisor Project Team will review the permit-required confined space program, using the canceled permits retained within one year after each entry and revise the program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are

affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written confined space program in their respective departments.

6.2 General Requirements Responsibility and Scope

The Safety Supervisor Project Team will establish confined space operational procedures through the use of this document. The City shall evaluate the facilities to determine if any spaces meet the criteria for designation as a confined space. The decision flow chart in Appendix A to 29 CFR 1910.146 will be used to facilitate compliance with this requirement.

Permit-required confined space (permit space) means 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 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.

Permit-required confined space program (permit space program) means the City's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit system means the City’s written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry. Those spaces meeting the criteria delineated in this chapter and having a known potential to contain hazardous atmospheres and/or other known hazards will be designated as permit-required confined spaces. All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise.

The City shall inform exposed employees, by posting danger signs, conducting awareness training, or by any other equally effective means, of the existence and location of and the danger posed by the permit confined spaces. A sign reading “DANGER PERMIT REQUIRED CONFINED SPACE, DO NOT ENTER” or similar language will be used to satisfy the requirement for a sign. In accordance with 29 CFR 1910.146 (c)(2), closed street manholes are exempted from the sign requirement.

Non-permit confined space means 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.

Spaces defined as non-permit confined spaces and having no known hazards will be designated as non-permit confined spaces. These spaces should be rechecked on an annual, or as needed, basis to check the atmospheric condition and other hazards.

The City, having evaluated the facilities, will maintain a master listing online that permanently identifies locations meeting the criteria for a confined space. Each Department must maintain and provide updates to the Human Resources Department as needed.

If the City decides that only specific employees will enter permitted spaces, the City shall take effective measures to prevent non-trained employees from entering the permit-required confined spaces.

For employees that are required to perform work in permit-required confined spaces, the City shall implement this confined space program.

Non-permit required confined spaces will be designated where the atmosphere and safety conditions can be controlled. Confined spaces may be entered without the need for a written permit or attendant provided that: 1) The space is determined not to be a permit-required-confined space; and 2) The space can be maintained in a safe condition for entry by mechanical ventilation alone. All spaces shall be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The City will ensure that any employee required or permitted to pre-check or enter a confined space shall have successfully completed the training as required by this instruction. A written copy of operating and rescue procedures as required by this instruction shall be at the work site for the duration of the job.

A site-specific Confined Space Pre-Entry Check List must be completed by the appropriate personnel before entry into a confined space. This list will verify completion of the items required to verify safe entry. This check list shall be kept at the job site for the duration of the job. If circumstances dictate an interruption in the work in excess of 30 minutes, the permit-required confined space must be re-evaluated and a new check list must be completed including the atmospheric testing. Assuming the following conditions can be met:

1. It can be demonstrated that the only hazard posed by the permitted space is an actual or potentially hazardous atmosphere.

2. It can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space safe for entry.

3. Monitoring and inspection data supports the demonstrations required by conditions 1 and 2.

The following elements of the permit-required confined space program need not be complied with:

- Permit required confined space program.
- Permit system.
- Entry permit.
- Duties of authorized entrants.
- Duties of attendants.
- Duties of entry supervisors.
- Rescue and emergency services.

If an initial entry of the permit space is necessary to obtain monitoring and inspection data worst case will be assumed and the full provisions of permit-required confined space entry procedures will be implemented. Entry can be performed by City employees properly trained, once determinations and supporting data required by conditions 1, 2, and 3 are documented, and are made available to each employee who enters the permit space.

The following requirements apply to entry into permit spaces that meet the conditions set forth by conditions 1, 2, and 3. No personnel will enter the confined space unless:

1. Conditions making it unsafe to remove an entrance cover are eliminated before the cover is removed.

2. The opening at entrance covers are guarded by a railing, temporary cover, or other temporary barrier that will prevent accidental fall-through and will protect each employee working in the space from foreign objects entering the space.

3. The internal atmosphere has been tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

• Oxygen content.	OSHA Mandated
• Flammable gases and vapors.	OSHA Mandated
• Potential toxic air contaminants.	OSHA Mandated
• Airborne combustible dusts.	Site Specific

There may be no hazardous atmosphere within the space whenever any employee is inside the space.

Continuous forced air ventilation shall be used, as follows:

1. No employee may enter the space until testing confirms that the forced air ventilation has eliminated any hazardous atmosphere.

2. The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space.

3. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

4. The atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

5. If a hazardous atmosphere is detected during entry:

    - All employees will evacuate.
    - The space shall be evaluated to determine how the hazardous atmosphere developed.
    - Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

Permit-Required Confined Space Certification. The City shall verify that the space is safe for entry and that the measures required by a written certification permit meeting the criteria in 29 CFR 1910.146 are accomplished. This written certification will contain at a minimum; the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space.

Non-Permit Required Confined Space Certification. When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the City shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

Permit to Non-Permit Reclassification. A space classified by the City as a permit-required confined space will be reclassified as a non-permit confined space under the following conditions:

1. If the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.

2. If it is necessary to enter the permit space to eliminate hazards, such entry shall be performed under the assumption that a hazard exists. If testing and inspection during that entry demonstrate that the hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space for as long as the hazards remain eliminated.

3. The City shall document the basis for determining that all hazards in a permit space have been eliminated, through a certification that contains at a minimum; the date, the location of the space, and the signature of the person making the determination. The certification shall be made available to each employee entering the space.

4. If hazards arise within a permit space that has been declassified to a non-permit space, each employee in the space shall immediately exit the space and notify their Supervisor. The City shall then reevaluate the space and determine whether it must be reclassified as a permit space, in accordance with other applicable provisions of this instruction.

The City's Responsibilities Regarding Contractor Operations in Permitted Confined Spaces. When the City arranges to have employees of another employer (contractor) perform work that involves permit space entry, the City shall include in its contract documents the requirement to comply with all OSHA standards.

6.3 Definitions

The following is a list of definitions applicable to the Confined Space Safety Program Chapter:

Acceptable entry conditions means 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.

Acute effect means an adverse effect on a human or animal body, with severe symptoms developing rapidly and coming quickly to a crisis. Also see "chronic."

Attendant means 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 means an employee who is authorized by the employer to enter a permit space.

Blanking or blinding means 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.

Ceiling level means the maximum airborne concentration of a toxic agent to which an employee may be exposed for a specified period of time (usually 15 minutes). Also see "PEL" and "TLV."

Chronic toxicity means the effects resulting from repeated doses of or exposures to a substance over a relatively prolonged period of time. Ordinarily used to denote effects in experimental animals.

Combustible dust means a dust capable of undergoing combustion or of burning when subjected to a source of ignition.

Confined space means a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work.
- 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).
- Is not designed for continuous employee occupancy.

Dilution Ventilation refers to air flow designed to dilute contaminants to acceptable levels. Also see "general exhaust" or "ventilation."

Double block and bleed means 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 means 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 means the surrounding and effective capture of a person by a liquid or finely divided (flowable) 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 means the 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 (permit) means 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 Section VI "Entry Permit" of this Chapter.

Entry supervisor means the person (such as the employer, foreman, 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.
NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role they fill. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

General exhaust means a system for exhausting air containing contaminants from a general work area. Also see "local exhaust."

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, and 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:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL).
- Airborne combustible dust at a concentration that meets or exceeds its LFL.

NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in CFR 1910.1000, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit.

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- Any other atmospheric condition that is immediately dangerous to life or health.

NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot work permit means the City'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) means 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.
NOTE: Some materials -- hydrogen fluoride gas and cadmium vapor, for example -- may

produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Inerting means 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.
NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.

Isolation means 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.

LEL or LFL means the Lower Explosive Limit or Lower Flammable Limit of a vapor or gas; the lowest concentration (lowest percentage of the substance in air) that will produce a flash or fire when an ignition source (heat, arc, or flame) is present. At concentrations lower than the LEL, the mixture is too "lean" to burn. Also see "UEL."

Line breaking means 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.

Local exhaust refers to a system for capturing and exhausting contaminants from the air at the point where the contaminants are produced (welding, grinding, sanding, other processes, or operations).

Mechanical exhaust refers to a powered device, such as a motor-driven fan or air steam venturi tube, for exhausting contaminants from a workplace, vessel, or enclosure.

Non-permit confined space means 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 means an atmosphere containing less than 19.5 percent oxygen by volume.

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

PEL stands for Permissible Exposure Limit; which is an exposure limit established by OSHA regulatory authority. May be a time-weighted average (TWA) limit or a maximum concentration exposure limit.

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

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

Permit-required confined space program (permit space program) means the employer's overall program for controlling and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces.

Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

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

REL is the NIOSH Recommended Exposure Limit which is the highest allowable airborne concentration which is not expected to injure workers. It may be expressed as a ceiling limit or as a time-weighted average (TWA).

Rescue service means the personnel designated to rescue employees from permit spaces.

Retrieval system means the 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.

Skin is a notation, sometimes used with PEL or TLV exposure data; indicates that the stated substance may be absorbed by the skin, mucous membranes, and eyes -- either airborne or by direct contact -- and that this additional exposure must be considered part of the total exposure to avoid exceeding the PEL or TLV for that substance.

Testing means the 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.
NOTE: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

TLV or Threshold Limit Value is a term used by the American Conference of Governmental Industrial Hygienists (ACGIH) to express the airborne concentration of a material to which nearly all persons can be exposed day after day, without adverse effects. ACGIH expresses TLV's in three ways:

- TLV-TWA: the allowable time-weighted average concentration for a normal 8-hour workday or 40-hour work week.
- TLV-STEL: the short-term exposure limit, or maximum concentration for a continuous 15-minute exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods, and providing that the daily TLV-TWA is not exceeded).
- TLV-C: the ceiling exposure limit -- the concentration that should not be exceeded even instantaneously.

UEL or UFL is the Upper Explosive Limit or Upper Flammable Limit of a vapor or gas; the highest concentration (highest percentage of the substance in air) that will produce a flash of fire when an ignition source (heat, arc, or flame) is present. At higher concentrations, the mixture is too rich to burn. Also see "LEL."

The following is a list of highlights applicable to the Confined Space Safety Program Chapter.

1. Scope covers general industry workers including 1.6 million who enter confined spaces annually and an additional 10.6 million employed at the 240,000 work sites covered by the standard. Expected to prevent about 85 percent of deaths and injuries - 54 deaths and 10,949 injuries each year.

2. Confined space is defined as an area which:

    - Has adequate size and configuration for employee entry.
    - Has limited means of access or egress.
    - Is not designed for continuous employee occupancy.

3. Permit-required confined space is a confined space that presents or has the potential for hazards related to atmospheric conditions (toxic, flammable, asphyxiating), engulfment, configuration, or any other recognized serious hazard.

4. Prohibited condition is defined as any condition not allowed by permit during entry operations.

5. Evaluation requires employers initially to evaluate their workplaces and determine if there are any permit-required confined spaces, inform employees through signs or other equally effective means, and prevent unauthorized entry.

6. Permit-required confined space program mandates a written program to prevent unauthorized entry, identify and evaluate hazards and establish procedures and practices for safe entry including testing and monitoring conditions. Calls for an attendant stationed outside permit spaces during entry; procedures to summon rescuers and prevent unauthorized personnel from attempting rescue; and a system for preparing, issuing, using, and canceling entry permits. Requires coordinated entry for more than one employer, procedures for concluding entry

operations and canceling entry permits and review of permit program at least annually and additionally as necessary.

7. Permit system requires an entry supervisor to authorize entry, prepare and sign written permits, order corrective measures if necessary and cancel permits when work is completed. Permits must be available to all employees and extend only for duration of the task. They must be retained for a year to facilitate review of the confined space program.

8. Permits must include or state:

   - Identification of space.
   - Purpose of entry.
   - Date and duration of permit.
   - List of authorized entrants.
   - Names of current attendants and entry supervisor.
   - List of hazards in the permit space.
   - List of measures to isolate permit space and eliminate/control hazards.
   - The acceptable entry conditions.
   - Results of tests initialed by the person(s) performing tests.
   - Rescue and emergency services and means to summon.
   - Communication procedures for attendants/entrants.
   - Required equipment (such as respirators, communications, alarm, etc.).
   - Any other necessary information.
   - Any additional permits (such as for hot work).

9. Training mandates initial and refresher (when duties change, hazards in space change or whenever evaluation determines inadequacies in employee's knowledge) training to provide employees understanding, skills and knowledge to do job safely. Employer certification of training must include employee's name, signature or initials of trainer and date of training.

10. Authorized entrants must know the hazards they may face, be able to recognize signs or symptoms of exposure and understand the consequences of exposure to hazards. Entrants must know how to use any needed equipment, communicate with attendants as necessary, alert attendants when a warning symptom or other hazardous condition exists and exit as quickly as possible whenever ordered or alerted (by alarm, warning sign or prohibited condition) to do so.

11. Attendants must know hazards of confined spaces, be aware of behavioral effects of potential exposures, maintain continuous count/identification of authorized attendants, remain outside space until relieved, and communicate with entrants as necessary to monitor entrant status. Attendants also must monitor activities inside and outside the permit space and order exit if required, summon rescuers if necessary, prevent unauthorized entry into confined space, and perform non-entry

rescues if required. They may not perform other duties that interfere with their primary duty to monitor and protect the safety of authorized entrants.

12. Entry supervisors must know hazards of confined spaces, verify that all tests have been conducted and all procedures and equipment are in place before endorsing permit, terminate entry and cancel permits and verify that rescue services are available and the means for summoning them are operable. Supervisors are to remove unauthorized individuals who enter confined spaces. They also must determine, at least when shifts and entry supervisors change, that acceptable conditions as specified in permit continue.

13. Rescue services may be on-site or off-site. Rescue is to use employee retrieval systems whenever possible. On-site teams must be properly equipped. They must receive the same training as authorized entrants plus training to use personal protective and rescue equipment and first aid training, including CPR. They must practice simulated rescues at least once every 12 months. Outside rescue services must be made aware of hazards, receive access to comparable permit spaces to develop rescue plans and practice rescues. Employer must provide hospitals or treatment facilities any SDS's or other information on a permit space hazard exposure situation that may aid in treatment of rescued employees.

14. Contractors. Calls for host employers to provide information to contractors on permit spaces, the permit space program and procedures and likely hazards that the contractor might encounter. Joint entries must be coordinated, and the contractor debriefed at the conclusion of entry operations.

15. Alternative protection procedures for permit spaces where the only hazard is atmospheric, and ventilation alone can control the hazard; employers may use alternative procedures for entry. To qualify for alternative procedures employers must:

    - Ensure that it is safe to remove the entrance cover.
    - Determine that ventilation alone is sufficient to maintain the permit space safe for entry and work to be performed within the permit-required space must introduce no additional hazards.
    - Gather monitoring and inspection data to support bullet points above.
    - If entry is necessary to conduct initial data gathering, perform such entry under the full permit program.
    - Document the determinations and supporting data and make them available to employees. Entry can take place after:
        - It has been determined safe to remove the entrance cover.
        - Any openings are guarded to protect against falling and falling objects.
        - Internal atmospheric testing.
        - Air remains without hazard whenever any employee is inside the space.

- Continuous forced air ventilation has eliminated any hazardous atmosphere.
- Space is tested periodically.

- Employees must exit immediately if a hazardous atmosphere is detected during entry, and the space must be evaluated to determine how the hazardous atmosphere developed.

16. Nonmandatory appendices include flow chart for compliance, procedures for atmospheric testing, examples of confined space programs, sample permits, and procedures for sewer system entry.

6.4 Permit-Required Confined Space Program

Under the permit-required confined space program required by 29 CFR 1910.146, the City shall:

1. Implement the measures necessary to prevent unauthorized entry.

2. Identify and evaluate the hazards of permit spaces before employees enter them.

3. Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:

   - Specifying acceptable entry conditions.
   - Isolating the permit space.
   - Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
   - Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
   - Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
   - Developing and utilizing checklists based on this standard practice instruction and 29 CFR 1910.146.

4. Provide the following equipment at no cost to employees, maintain that equipment properly, and ensure that employees are trained in the proper use of the equipment:

   - Testing and monitoring equipment needed to determine if hazardous conditions exist or to verify that they do not exist.
   - Ventilating equipment needed to obtain acceptable air quality entry conditions.
   - Communications equipment necessary for communication between personnel involved in the entry operation.
   - Personal protective equipment, insofar as feasible, engineering and work practice controls do not adequately protect employees.
   - Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

- Barriers and shields as required to protect workers from pedestrian, and vehicular traffic.
- Ladders needed for safe ingress and egress by authorized entrants.
- Rescue, Retrieval, and Emergency equipment needed to extract or treat injured personnel, except to the extent that the equipment and or service is provided by rescue services that are immediately available.
- Any other equipment necessary for safe entry into and rescue from permitted spaces at our facility.
- Principal equipment needed to conduct confined space operations. The below listed intrinsically safe equipment as a minimum will be maintained where required for confined space operations.
    - Multi-gas monitors.
    - Ventilation Equipment.
    - Rescue tripod/davit arm and winch system.
    - Body harnesses.
    - Extraction cable and lanyards.
    - Air Compressors (as required).
    - Supplied Air respirators (as required).
    - Air purifying respirators (as required).
    - SCBA equipment (as stated in Chapter 5 of the Safety Programs Manual).
    - Emergency escape breathing apparatus (as required).
    - Radio communication system (as required).
    - Signage (as required).
    - Lock-out/Tag-out Equipment (as stated in Chapter 4 of the Safety Programs Manual).
    - Intrinsically safe lighting equipment (GFCI an explosion-proof equipment).
    - Personal protective clothing (as required).
    - Hearing protection equipment (as required).
    - Head protection equipment.
    - Eye Protection equipment.
    - First Aid kits.
    - Time keeping equipment.
    - Hand tools.
    - Escape ladders for depths of four feet or shoulder height.

5. Evaluation of Permitted Space Conditions. The City will evaluate permit space conditions as follows when entry operations are conducted:

    - Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working.

- Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
- Use the following protocol: first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

NOTE: Atmospheric testing conducted in accordance with the procedures for atmospheric testing section of this instruction or Appendix B to 29 CFR 1910.146 will be used to satisfy this requirement. This appendix can also be used to develop procedures for permit space operations in sewers and other job sites, when supplemented by Appendix C (Examples) to 29 CFR 1910.146. Attendants may be assigned to monitor more than one permit space provided their duties can be effectively performed for each permit space that is monitored. Likewise, attendants may be stationed at any location outside the permit space to be monitored as long as their duties can be effectively performed for each permit space that is monitored.

- Annotate the permit if multiple spaces are monitored by a single attendant to provide the means and procedures by which the attendant is to respond to an emergency affecting one or more of the permit spaces being monitored.
- Designate, by department, in advance the persons who will have active roles in the entry operation, when a confined space entry is to take place as part of the preplanning process. Additionally, the duties of each such employee will be identified, and provided with the training required by the training section of this instruction. The confined space entry team will include but is not limited to the following:
  - Authorized entrants.
  - Attendants.
  - Entry supervisors.
  - Atmospheric monitoring personnel.
  - Certifying personnel.
  - Rescue/Emergency services personnel.
- Develop departmental procedures prior to the commencement of confined space operations for the following but not limited to:
  - Summoning rescue and emergency services.
  - Rescuing entrants from permit spaces.
  - Providing necessary emergency services for rescue.
  - Preventing unauthorized personnel from attempting a rescue.
- Development and implementation for the preparation, issuance, use, and cancellation of entry permits will be as follows:

  When employees of contractor personnel or non-trained employees are working simultaneously as authorized entrants in a permit space, the certifying official of the permit (or predesignated representative) will ensure that all parties concerned are aware of the accepted entry procedures for the specific operation. This will ensure entry operations are properly coordinated.

  The certifying official of the permit (or predesignated representative) will ensure that all parties concerned are aware of the accepted procedures necessary

for concluding the entry after entry operations have been completed (such as closing off a permit space and canceling the permit).

The City will immediately review and as necessary halt and revise entry operations when there is reason to believe that the measures taken under the permit space program may not protect employees. The focus will be directed at the correction of deficiencies found to exist before subsequent entries are authorized. Examples of circumstances requiring the review of the permit-required confined space program are as a minimum:

- Any unauthorized entry of a permit space.
- The detection of a permit space hazard not covered by the permit.
- The detection of a condition prohibited by the permit.
- The occurrence of an injury or near-miss during entry.
- A change in the use or configuration of a permit space.
- Employee complaints about the effectiveness of the program.
- Review of the permit-required confined space program, using the canceled permits retained will be accomplished within 1 year after each entry and the program revised as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

6.5 Permit System

- To comply with the permit-system required by 29 CFR 1910.146, the City shall:
- Before entry is authorized, document the completion of the following measures:
    - Specifying acceptable entry conditions.
    - Isolating the permit space.
    - Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards.
    - Provide pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards.
    - Verify that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
    - Develop and utilize checklists based on this standard practice instruction and 29 CFR 1910.146.
- Before entry begins, the entry supervisor identified on the permit shall sign the entry permit to authorize entry.
- The completed permit shall be made available at the time of entry to all authorized entrants, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.
    - The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.

- The entry supervisor shall terminate entry and cancel the entry permit when:
  - The entry operations covered by the entry permit have been completed.
  - A condition that is not allowed under the entry permit arises in or near the permit space.
  - The City shall retain each canceled entry permit for at least one year to facilitate the review of the permit-required confined space program. Any problems encountered during an entry operation shall be noted on the pertinent permit so that appropriate revisions to the permit space program can be made.

6.6 Entry Permit

This Safety Supervisor Project Team shall develop or use a standardized entry permit form (see Section 6-14, Appendix B of this document) that documents compliance with this section and authorizes entry to a permit space. As a minimum, the permit in use shall identify the following:

- The permit space to be entered.
- The purpose of the entry.
- The date and the authorized duration of the entry permit.
- The authorized entrants within the permit space, by name or by such other means (for example, through the use of rosters or tracking systems) as will enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space. If a tracking system is used for certain entries this requirement may be met by inserting a reference on the entry permit as to the means used, such as a roster or tracking system, to keep track of the authorized entrants within the permit space.
- The personnel, by name, currently serving as attendants.
- The individual, by name, currently serving as entry supervisor, with a space for the signature or initials of the entry supervisor who originally authorized entry.
- The hazards of the permit space to be entered.
- The measures used to isolate the permit space and to eliminate or control permit space hazards before entry. Such as; the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.
- The acceptable entry conditions.
- The results of initial and periodic atmospheric tests performed, accompanied by the names or initials of the testers and by an indication of when the tests were performed.

- The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services.
- The communication procedures used by authorized entrants and attendants to maintain contact during the entry.
- Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with the permit requirement.
- Any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety.
- Any additional permits, such as for hot work, that have been issued to authorize work in the permit space.
- The City shall provide training so that all employees whose work is regulated by this section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

6.7 Training

The Departments shall develop a standardized training format to meet the requirement for a safe confined space entry. Training shall be provided to each affected employee:

- Before the employee is first assigned duties that require a confined space entry.
- Before there is a change in assigned duties.
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained.
- Whenever the City has reason to believe that there are deviations from the permit space entry procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this instruction and shall introduce new or revised procedures, as necessary, for compliance with this instruction or when future revisions occur.

The City shall certify that the training required by this section has been accomplished. The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certification shall be available for inspection by employees and their authorized representatives.

Each department shall maintain a file on the training received by all employees. The department should forward a copy of lists of employees receiving training and the type of training to Human Resources.

6.8 Duties of Authorized Entrants

The City shall ensure that all authorized entrants:

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Properly use equipment as required by paragraph 29 CFR 1910.146 (d)(4) of this section.
- Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required by this section.
- Alert the attendant whenever: (1) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation or (2) The entrant detects a prohibited condition.
- Exit from the permit space as quickly as possible whenever (1) An order to evacuate is given by the attendant or the entry supervisor; (2) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation; (3) The entrant detects a prohibited condition; or (4) An evacuation alarm is activated.

6.9 Duties of Authorized Attendants

The City shall ensure that each attendant:

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Is aware of possible behavioral effects of hazard exposure in authorized entrants.
- Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants under this section accurately identifies who is in the permit space.
- Remains in a predesignated location outside the permit space during entry operations until relieved by another attendant.

NOTE: When the City's permit entry program allows attendant entry for rescue, attendants may enter a permit space to attempt a rescue if they have been trained and equipped for rescue operations as required by the rescue and emergency services section of this instruction and if they have been relieved as required by this section.

- Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
- Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions: (1) If the attendant detects a prohibited condition; (2) If the attendant detects the behavioral effects of hazard exposure in an entrant; (3) If the attendant detects a situation outside the space that could

endanger the entrants; or (4) If the attendant cannot effectively and safely perform all the duties required under this section.

- Summon rescue and other emergency services as soon as the attendant determines that entrants may need assistance to escape from permit space hazards.
- Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway: (1) Warn the unauthorized persons that they must stay away from the permit space; (2) Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and (3) Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space.
- Performs non-entry rescues as specified by this employer's rescue procedure.
- Performs no duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

6.10 Duties of Entry Supervisors

The City shall ensure that each entry supervisor:

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
- Terminates the entry and cancels the permit as required in accordance with the permit.
- Verifies that rescue services are available and that the means for summoning them are operable.
- Ensures removal of unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

6.11 Rescue and Emergency Services

The following requirements apply to all personnel who enter permit spaces to perform rescue services:

- The City shall ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from permit spaces.

- Each member of the rescue service shall be trained to perform the assigned rescue duties. Each member of the rescue service shall also receive the training required of authorized entrants under the “duties of authorized entrants” section of this instruction.
- Each member of the rescue service shall practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which this safety project team anticipates rescue is to be performed.
- Each member of the rescue service shall be trained in basic first aid and in cardiopulmonary resuscitation (CPR). At least one member of the rescue service holding current certification in first aid and in CPR shall be available.
- Non-trained rescue personnel. When non-trained personnel are designated to perform permit space rescue, the City shall: (1) Inform the rescue service of the hazards they may confront when called on to perform rescue and (2) Provide the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
- To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems used by the trained personnel shall meet the following requirements: (1) Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head. Wristlets may be used in lieu of the chest or full body harness if it is demonstrated that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative; and (2) The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.
- If an injured entrant is exposed to a substance for which a Safety Data Sheet (SDS) or other similar written information is required to be kept at the worksite, that SDS or written information shall be made available to the medical facility treating the exposed entrant.

6.12 Procedures for Atmospheric Testing

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

Evaluation testing. The City will ensure that the atmosphere of a confined space is analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise. This is required to ensure that appropriate permit entry procedures specific to the operation can be developed and acceptable entry conditions stipulated for that specific space. Evaluation and interpretation of these data, and development of the entry procedure, will be done by, or reviewed by, a technically qualified professional (e.g., OSHA consultation service, or certified industrial hygienist, registered safety engineer, certified safety professional, certified marine engineer etc.) based on evaluation of all serious hazards. The internal atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

1.	Oxygen content.	OSHA Mandated
2.	Gases and vapors.	OSHA Mandated
3.	10% LEL of flammable gases and vapors.	OSHA Mandated
4.	Hydrogen sulfide.	OSHA Mandated

Verification testing. The atmosphere of a permit space which may contain a hazardous atmosphere will be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) will be recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition. The atmosphere will be verified, with a calibrated direct-reading instrument, for the following conditions in the order given:

1.	Oxygen content.	OSHA Mandated
2.	Gases and vapors.	OSHA Mandated
3.	10% LEL of flammable gases and vapors.	OSHA Mandated
4.	Hydrogen sulfide.	OSHA Mandated

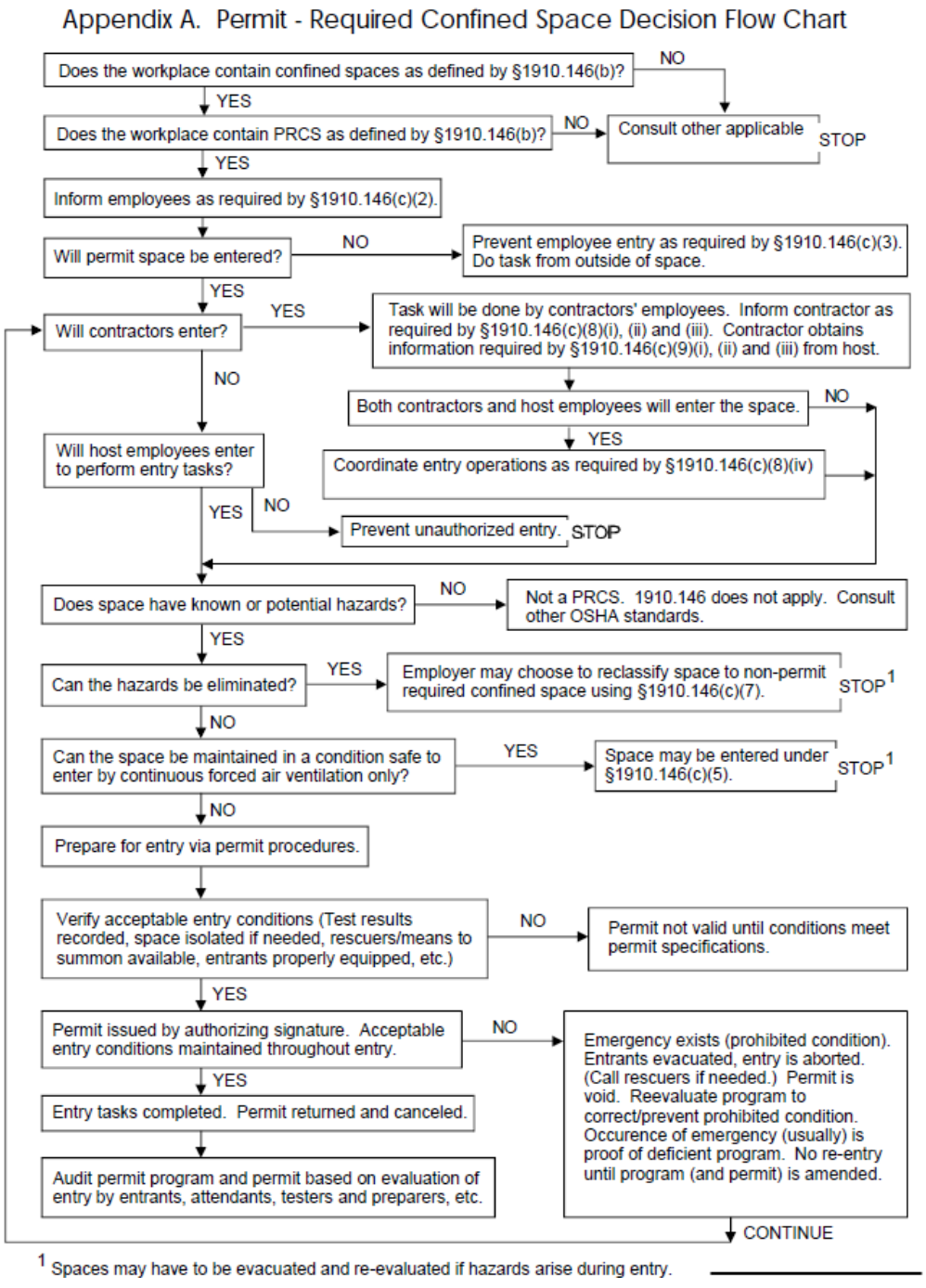
Duration of testing. Measurement of values for each atmospheric parameter will be made for at least the minimum response time of the test instrument specified by the manufacturer.

Testing stratified atmospheres. When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope will be tested a distance of approximately 4 feet (1.22 m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress will be slowed to accommodate the sampling

speed and detector response. The stratified atmosphere will be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

1.	Oxygen content.	OSHA Mandated
2.	Gases and vapors.	OSHA Mandated
3.	10% LEL of flammable gases and vapors.	OSHA Mandated
4.	Hydrogen sulfide.	OSHA Mandated

6.13 Appendix A: Flow Chart to Assess Confined Spaces



6.14 Appendix B: Confined Space Permit

The City of West Des Moines
Confined Space Entry Permit

All Copies of Permit to Remain at the Job Until Complete

General Information

Location and Description of Confined Space:		Name of Entry Supervisor:
Permit Start Date/Time	Expires Date/Time:	Name of Attendant:
Purpose of Entry/Work to be Performed:		Name(s) of Entrants:

Preparation for Entry

Entrants, attendants, supervisor, contractors all trained in confined space safety?	Yes NR
All have reviewed and understand entry procedure, especially anticipated hazards, acceptable entry conditions, emergency procedures, etc.?	Yes NR
Means to communicate with entrants?	Yes NR
PPE/Respiratory protection to be worn?	Yes NR
All moving parts, augers, etc. are locked and tagged out?	Yes NR
Flow of incoming material, including gases, positively controlled (*i.e.* pumps locked out, feed lines disconnected or blanked, lines plugged or capped, etc.)?	Yes NR
Mechanical ventilation running prior to entry and continuously throughout?	Yes NR
Atmospheric testing equipment running? (4-gas meter, detector tubes, etc.)	Yes NR
Ingress/egress equipment provided? (*i.e.* tripod, safety harness, lifelines, boatswain's chair)	Yes NR
Appropriate fire extinguisher provided?	Yes NR
Safety Data Sheet (SDS) provided?	Yes NR
Hot Work Permit completed?	Yes NR
MANDATORY Before entry contact WDM Fire Department Duty Officer at **515-208-0985**	**Yes**

* NR – Not required by procedure

Initial Pre-Entry Atmospheric Check (Continuous monitoring to occur while in confined space)

Person Conducting Test	Time	To Be Measured:	Acceptable Range
		Oxygen (O_2): _____	19.5%-23.5%
		Hydrogen Sulfide (H_2S): _____	Less than 10 ppm
		Carbon Monoxide (CO): _____	Less than 35 ppm
Instrument(s) Used Identification Number RKI GX2009 125140878 RN		Lower Explosive Limit (LEL): _____ Other _____ Other _____ Other _____ Other _____	Less than 10% _____ ppm _____ ppm _____ ppm _____ ppm

Is authorized attendant certified in CPR/First Aid? Yes No. If no, must be in contact with _____.

Emergency Phone Number: 911

Supervisor's Authorization

I have reviewed the relevant confined space entry procedure and verified that all necessary steps to prepare for entry have been taken. I authorize this work to begin at this point.

Entry Supervisor Signature: _____ Date/Time: _____

Permit Cancellation: Date _____Time _____Entry Supervisor Signature: _____

Conclusion – Complete this section after work has concluded

Permit cancelled because: Work was completed as planned Yes No

Prohibited condition/emergency Yes No

Any event that would merit a review of the confined space program/procedure? Yes No

Chapter 7 Personal Protective Equipment/Job Hazard Analysis Program

29 CFR 1910 Subpart I
Revised January 2017

7

7.1 Purpose

The ultimate goal of all safety programs is to avoid work-related illnesses and injuries. The potential for such harm to employees is referred to as a hazard. The purpose of this program is to identify potential hazards in jobs and to reduce their risks by, if necessary, using proper personal protective equipment. This program is intended to describe how to analyze a job's tasks to discover the possible causes of hazards. The objective of this program is to select equipment that is suitable for each employee and that most effectively reduces or eliminates specific sources of hazards.

This program serves two objectives: Describing the process of assessing the safety of jobs and the process of selecting suitable personal protective equipment (PPE).

A job hazard analysis is a technique that focuses on job tasks as a way to identify and assess hazards before they cause harm. It focuses on the relationship between the worker, the task, the tools, and the work environment.

Supervisors can use the findings of a job hazard analysis to eliminate and prevent hazards in their workplaces. This is likely to result in fewer worker injuries and illnesses; safer, more effective work methods; reduced workers' compensation costs; and increased worker productivity. The analysis also can be a valuable tool for training new employees in the steps required to safely perform their jobs.

Performing job hazard analyses also serves an important educational function. As employees and Supervisors observe the process, it can help them become more vigilant about possible risks. They may notice and report hazards that would have been previously overlooked. The analysis process can also increase employee awareness of how one's job tasks may sometimes put co-workers at risk.

7.2 Written Program

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed;
c. When adjustments in the City's operations require program changes; or
d. When there is an accident or near miss that relates to this topic.

When uncontrolled hazards are identified, City management will demonstrate its commitment to safety and health by minimizing or eliminating the hazards. In addition to maintaining management credibility, effective follow-through encourages employees to report dangerous conditions to managers.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written personal protective equipment/job hazard analysis program in their respective departments.

7.3 General Requirements

Clothes worn at work that meet generally accepted business standards can also provide the first line of defense against minor hazards. As potential hazards increase so should the protective qualities of clothing. City employees must wear clothing suitable for the work performed.

7.4 Selection of Jobs for Hazard Analysis

A job hazard analysis can be conducted on many jobs in the workplace. Priority should be assigned to the following types of jobs:

- Jobs with the highest rates or risks of illness, injury or near misses;
- Jobs with the potential to cause severe or disabling injuries or illness, even if there is no history of previous incidents;
- Jobs in which one simple human error could lead to severe consequences;

- Jobs that are new to the operation or have undergone changes in processes and procedures; and

- Jobs complex enough to require written instructions.

Priority determination may also include the use of OSHA and insurance industry statistics, vendor reports, industry publications and surveys of employees.

7.5 Pre-Survey for Job Hazard Analysis

Prior to beginning a job hazard analysis, the pre-survey in Appendix A will be conducted to evaluate the general conditions under which the job is performed.

7.6 OSHA Standard Applicability

Specific standards issued by OSHA will be consulted as part of the overall job hazard analysis. When OSHA standards apply to a specific job, these standards will be incorporated into the hazard analysis to ensure that the requirements of the standard and hazard analysis are combined to create optimally safe job conditions.

7.7 Job Hazard Analysis

Once trained, Supervisors will be responsible for job hazard analysis. Once the pre-survey has been conducted this information will be used to reduce general hazards in the work area. After the general hazards in the work area have been reduced to the lowest appropriate level. The following procedures for job hazard analysis will be followed:

1. Supervisor involvement. The procedure will be discussed with the employee's supervisor to explain its purpose and ensure the Supervisor understands that the job is being analyzed, not the employee's job performance. This will also serve as training for the Supervisor. Supervisors will be versed in the procedures used for job hazard analysis. Once trained, Supervisors will be required to conduct future job hazard analyses for the City.

2. Employee involvement. Discuss the procedure with the employee performing the job to explain its purpose and ensure the employee understands that the job is being analyzed, not the employee's job performance. Their input to procedural changes is critical.

3. Hazard analysis. Record the steps required to accomplish the on- the- job hazard task analysis form, Appendix C. If the job is complex, it should be broken down into detailed segments. Each step will be reviewed in the order of occurrence as

the employee is observed performing the job. Each segment will be reviewed in proper sequence.

4. Video hazard analysis method. The use of video recording, where feasible, may be used as a method for analysis of the work process. Slow-motion video or equivalent visual records of workers performing their routine job tasks will be used where practical to determine the demands of the task on the worker and how each worker actually performs each task. A job hazard analysis log/form will be used to break down the job into components that can be individually analyzed.

5. Immediate feedback. From reviewing the job steps, discuss the potential hazards with the worker. Obtain their comments concerning safety improvements.

6. Documentation. Each job hazard analysis will be documented. The City will use the "Protective Measures Determination" form, Appendix B. Attachments will be included to the form as required to document or support protective measures requirements for the specific job. Copies of the form will be maintained as follows:

    - Employees will be given a copy of the form.
    - The department will maintain a copy in their office files.
    - A copy of the form will be sent to the Human Resources Department and maintained in the employee's file.
    - The City will maintain a copy of the form.

7. Job hazard reevaluation. Supervisors will conduct a reevaluation when one or more of the following conditions occur:

    - When an accident or injury occurs. It must be determined if the incident occurred as a result of the employee ignoring established safety practices or if the safety practices need revision.
    - Anytime there is a change in the methods, materials, machinery, or procedures used in the conduct of the job.
    - Annual review. An annual review will be conducted to ensure that the job is evaluated for safety.

The purpose of training and education is to ensure that our employees are sufficiently informed about the job hazards to which they may be exposed and thus are able to participate actively in their own protection.

1. Employees will be adequately trained about the City personal protective equipment program. Proper training will allow managers, Supervisors, and workers to better understand the hazards associated with a job, task, or process. The training program will include all affected employees.

2. Learning level. The program will be presented in a language and at a level of understanding appropriate for the individuals being trained. It will provide an overview of the potential job hazards, their causes, and means of correction.

3. Evaluation. The program will also include a means for adequately evaluating its effectiveness. This will be achieved by using combinations of:

    - Employee surveys.
    - Injury and illness statistics.
    - Observation of work practices.

4. Training for affected employees will consist of both general and specific job training.

    - General Training. Employees who are working in jobs requiring changes due to a job hazard analysis will be given formal instruction on the hazards associated with their jobs and with their equipment. This will include information on the varieties of hazards associated with the job, what risk factors cause or contribute to them, and how to recognize and report suspected hazards.

    - Job-Specific Training. New employees and reassigned workers will receive an initial orientation and hands-on training prior to job assignment. Each new hire will receive a demonstration of the proper use of and procedures for all required tools and equipment. The initial training program will include the following:

        - Care, use, and handling techniques pertaining to tools.
        - Use of special tools and devices associated with work areas.
        - Use of appropriate guards and safety equipment, including PPE.
        - Use of proper lifting techniques and devices.

5. Training for Supervisors. Supervisors are responsible for ensuring that employees follow safe work practices and receive appropriate training to enable them to do this. Supervisors therefore will undergo training comparable to that of the person doing the initial job hazard analysis.

6. Training for Engineers and Maintenance Personnel. The City engineers and maintenance personnel will be trained in the prevention and correction of job hazards through job and work area design and proper maintenance both in general and as applied to the specific conditions.

7. Visitors observing operations will have the same level of protection provided to the worker being observed if in work area.

8. Initial training. Worker training will involve instruction and where necessary hands-on training in the following:

- A description and identification of the hazards associated with particular jobs/tasks/machines/workstations.
- Specific safeguards, how they provide protection, and the hazards for which it is intended to block.
- How to properly use the safety devices and why.
- How to install, operate, and remove safety devices.
- What to do if the device is damaged, missing, and/or unable to provide adequate protection.
- Training in the recognition of applicable hazard sources.
- Recognition of applicable hazards associated with guarding devices.
- Procedures for removal of a guard from service.
- Guard identification. Guards having identification numbers will be checked for legibility. Guards having illegible identification will be turned in for testing and remarking.
- Personal protective equipment requirements of the individual worker.
- Documentation. The City shall document that employee training has been accomplished and is being kept up to date. The documentation shall contain each employee's name and dates of training.

9. Refresher training. Refresher training will be conducted on an as needed basis or when the following conditions are met:

- Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard, or when there is a change in the type of guard installed on a given machine. Training will be provided before reassignment.
- Additional retraining shall be conducted whenever a periodic inspection reveals or whenever the City has reason to believe that there are deviations from or inadequacies in the employees' knowledge of safe job operations.
- The retraining shall reestablish employee proficiency and introduce new or revised safe work practices, methods, procedures, and use of PPE as necessary.
- Documentation. The City shall document that employee training has been accomplished and is being kept up to date. The documentation shall contain each employee's name and dates of training.

7.8 Personal Protective Equipment Selection

Where engineering controls and job hazard analyses do not eliminate all job hazards, employees will (where appropriate) wear personal protective equipment (PPE). The City shall provide the most cost effective and appropriate personal protective equipment for employees.

1. These include items such as hard hats, hair nets, face shields, safety goggles, glasses, hearing protection, steel toe shoes, gloves, safety vests, etc. Supervisors will ensure that equipment selected will meet the following requirements:

    - It will be appropriate for the particular hazard.
    - It will be maintained in good condition.
    - It will be properly stored when not in use to prevent damage or loss.
    - It will be kept clean, fully functional, and sanitary.

2. Hazards associated with wearing of protective clothing, PPE, personal clothing, and jewelry. Protective clothing and PPE can present additional safety hazards. Supervisors will ensure workers wear appropriate clothing and PPE. These items will be worn so as not to create additional hazards.

The greatest hazards posed by tools usually result from misuse and/or improper maintenance. Tool selection sometimes is not considered a priority when arrangements are made to begin work. The tools, personal protective equipment, and dimensions and adjustability of the work area will be noted for each job hazard analysis. All employees will consider the following when selecting tools:

- Is the tool correct for the type of work to be performed?
- Are guards installed properly and in good condition?
- Are grounding methods sufficient when working in wet conditions?
- Does the tool create sparks or heat? Has this been considered when working around flammable substances?
- Do impact tools such as chisels, wedges, or drift pins have mushroomed heads? The heads can shatter on impact sending sharp fragments flying!
- Are wooden handled tools loose or splintered? This can result in the heads flying off and striking the user/coworkers!
- Are cutting tools sharp? Dull tools are more hazardous than sharp ones.
- Is the tool used on the proper working surface? Tools used on dirty or wet working surfaces can create a multitude of hazards.
- Are tools stored properly when not being used? Saw blades, knives, scissors and like sharp tools should be stored so that sharp edges are directed away from aisles and coworkers.
- Is there sufficient clearance for tools requiring swinging motions such as hammers, axes, picks, etc.?
- Tools will be checked for excessive vibration.
- Have tools been modified beyond the manufacturer's specification? If so, have the modifications been approved by a "competent person?"

7.9 Appendix A: Pre-Survey for Job Hazard Analysis Form

Safety Status	**Yes**	**No**
Are there tripping hazards in the job vicinity?		
Is the lighting adequate for work conditions?		
Are there explosive hazards associated with the job?		
Are there electrical hazards associated with the job?		
Are tools associated with the job in good condition?		
Is the noise level excessive (above 85db TWA)?		
Is communication hampered because of excessive noise?		
Is the vibration level excessive, leading to numbness?		
Is fire protection equipment readily available?		
Have employees received fire training?		
Are emergency exits properly marked and accessible?		
Are employees wearing proper protective equipment?		
Are trucks/motorized vehicles properly equipped?		
Have employees received training in the use of trucks?		
Have industrial hygiene complaints been received?		
Does the job involve confined spaces?		
Does the job involve lock-out tag-out?		
Do employees know emergency response procedures?		
Does the job isolate workers from other co-workers?		
How often does the Supervisor visit the job location?		
What is the maximum amount of time a worker is alone?		
Do employees know the evacuation relocation point?		
What atmospheric testing has been performed?		
What atmospheric contaminants are present?		
Will jewelry or clothing get caught in machinery?		
Can the worker get caught between moving parts?		
Can the worker fall from one level to another?		
Can anything fall on the worker from above?		
Is the worker in an off-balance position at any time?		
Is the standing surface clean to maintain stability?		
Are the environmental conditions (heat/cold) adequate?		
Do possible eye/face injury conditions exist?		
Do possible head injury conditions exist?		
Do possible foot injury conditions exist?		
Do possible hand injury conditions exist?		
Are employees exposed to vehicular traffic?		
Lifting Hazards. Any work having tasks requiring manual materials handling will have the maximum weight-lifting values calculated. The NIOSH 1994 Lifting Users Guide should be used for basic calculations. (Note that this guide does not address lifting that involves twisting or turning motions.)		

7.10 Appendix B: Protective Measures Determination

Job Hazard Analysis
Protective Measures Determination

Job Title	**ID Code**	**Location**
Date Conducted:	Related Operating Procedures Reviewed: ____ Yes ____ No	All Affected Employees Notified: ____ Yes ____ No

Hazards and Needed Personal Protective Equipment

Indicate specific hazards with initials

Initials	**Hazard**	**Remarks/Recommendations**	**PPE Required**
_____	Oxygen deficiency:	(less than 19.5%)	
_____	Oxygen enrichment:	(more than 23.5%)	
_____	Flammable gases or vapors:	(more than 10% of LEL)	
_____	Airborne combustible dust:	(meets or exceeds LFL)	
_____	Toxic gases or vapors:	(more than PEL)	
_____	Mechanical hazards		
_____	Electrical hazards:		
_____	Respiratory hazards:		
_____	Engulfment hazards:		
_____	Fall hazards:		
_____	Skin hazards:		
_____	Eye/Face hazards:		
_____	Head/Hand/Foot hazards:		
_____	Confined spaces:		
_____	Lock-Out Tag-Out:		
_____	Other: :		

EMPLOYEE NOTIFICATION

I certify that I understand the hazards involved with the job and will comply with the requirements detailed in this Job Hazard Analysis.

Employee Signature: _____ Title/Employee #: _____ Date: _____

Supervisor's Signature: _____ Title/Employee #: _____ Date: _____

Superintendent Signature: _____ Title/Employee #: _____ Date: _____

AUTHORIZATION		
I certify that I have conducted a Job Hazard Analysis of the above-named job and have detailed the findings of the Job Hazard Analysis on this form.		
Signature: _____	Print Name: _____	
Title: _____	Date: _____	Time: _____

* Further detailed on attachment: ____ Yes ____ No

ANALYSIS FORM RETENTION INFORMATION AND ATTACHMENTS

Permanent Retention File: _____Location: _____ * ____ Yes ____ No

Date Filed: _____Filed By: _____ * See Following Page

7.11 Appendix C: Job Hazard Analysis Form

JOB HAZARD ANALYSIS FORM

JOB TITLE:	DATE OF ANALYSIS:	JOB LOCATION:

STEP	HAZARD	CAUSE	PREVENTIVE MEASURE

SAMPLE JOB HAZARD ANALYSIS FORM

JOB TITLE: Grinding Castings	DATE OF ANALYSIS:	JOB LOCATION:

STEP	HAZARD	CAUSE	PREVENTIVE MEASURE
1. Reach into right box and select casting	Strike hand on wheel	Box is located beneath wheel	Relocate box to side of wheel
2. Grasp casting, list and position	Tear hand on corner of casters	Corners of casters are sharp	Require wearing of leather gloves
3. Push casting against wheel and grind burr	Strike hand against wheel Wheel explodes Flying sparks/chips Respirable dust Sleeves caught in machinery	Wheel guard is too small Incorrect wheel installed Cracked wheel Wheel friction with caster Dust from caster metal and wheel material Loose sleeves	Provide larger guard Check rpm rating of wheel Inspect wheel for cracks Require wearing of eye goggles Provide local exhaust system Provide bands to retain sleeves
4. Place finished casting into box	Strike hand on castings	Buildup of completed stock	Remove completed stock routinely

Chapter 8 Hot Work Permit Program

29 CFR 1910 Subpart Q (.251-.255)
Revised January 2017

8

8.1 Purpose

The purpose of this program is to establish minimum safety procedures to be followed for performing any hot work outside of a designated hot work area. Hot work includes flame cutting, welding, brazing, soldering, grinding and application of roofing material with a torch.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel who are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written hot work permit program in their respective departments.

8.2 Fire Prevention

Fire and explosion pose a serious risk to our employees during hot work. Sparks can travel as much as 35 feet and spatter can bounce on the floor or fall through openings, creating hazards in other work areas.

1. Basic Safety Precautions

Authorization

Before hot work is permitted, the area must be inspected by the individual responsible for authorizing hot work. When granting the authorization, the inspector must designate the precautions to be followed if hot work is to proceed. Preferably, the permit will be in writing.

Restrictions

Hot work shall not be performed if the following requirements cannot be met:

1. The hot work area must be approved by an authorized manager.
2. Fire hazards. All movable fire hazards in the vicinity of the hot work shall be taken to a safe place. All immovable fire hazards in the vicinity of the hot work shall be protected against heat, sparks, and slag.
3. Guards. If the object upon which hot work is to be performed cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag and to protect the immovable fire hazards.
4. The hot work equipment must be in safe condition.
5. If protection is impaired in sprinklered areas.
6. No explosive atmospheres are present, such as
    a. Flammable gasses, dust, and vapor; or
    b. Explosive atmospheres that may develop inside unclean or improperly prepared tanks or equipment which previously contained flammable material or combustible dust;
7. In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulfur, baled paper, or cotton.

2. Combustibles and noncombustibles

- Relocation of combustibles: where practicable, all combustibles must be relocated at least 35 feet (10.7 m) from the work site. Where relocation is impracticable, combustibles must be protected with flame-proofed covers or otherwise shielded with metal or asbestos guards or curtains.
- Combustible material: wherever there are floor openings or cracks in the flooring that cannot be closed, precautions must be taken so that no readily combustible materials on the floor below will be exposed to sparks that may drop through the floor. The same precautions must be observed for cracks or holes in walls, open doorways and open or broken windows.

- Combustible walls: fire-resistant shields or guards must be provided to prevent ignition where hot work is done near walls, partitions, ceilings, or roofs of combustible construction.
- Combustible cover: hot work must not be attempted on a:
    - Metal partition, wall, ceiling, or roof having a combustible covering; or
    - Wall or partition of combustible sandwich-type panel construction.
- Noncombustible walls: if hot work is to be done on a metal wall, partition, ceiling or roof, precautions must be taken to prevent ignition of combustibles on the other side, due to conduction or radiation. Preferably prevention will be achieved by relocating any combustibles. If relocating combustibles is not practicable, a fire watch on the opposite side of the hot work must be provided.
- Floors: where combustible materials such as paper clippings, wood shavings, or textile fibers are on the floor, the floor must be swept clean for a radius of 35 feet (10.7 m). Combustible floors must be kept wet, covered with damp sand, or protected by fire-resistant shields. Where floors have been wet down, personnel operating arc-welding or arc-cutting equipment must be protected from shock.
- Ducts: ducts and conveyor systems that can carry sparks to distant combustibles must be suitably protected or shut down.
- Pipes: hot work on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs must not be undertaken if the work is close enough to cause ignition by conduction.
- Fire extinguishers. Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose, or portable extinguishers depending upon the nature and quantity of the combustible material exposed.
- Ensure that hot work workers and their Supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.
- Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.
- Fire prevention precautions. Hot work shall be permitted only in areas that are or have been made fire safe. When work cannot be moved practically, as in most construction work, the area shall be made safe by removing combustibles or protecting combustibles from ignition sources.
- Gas cylinder shutoff. In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off whenever the

torch is not to be used for a substantial period of time, such as during the lunch hour or overnight.

- First-aid equipment. First-aid equipment shall be available at all times. All injuries shall be reported to the City as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

3. **Hot work containers**

- Used containers. No hot work shall be performed on used drums, barrels, 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.
- Venting and purging. All hollow spaces, cavities or containers shall be vented to permit the escape of air or gases before preheating or performing hot work. Purging with inert gas is recommended.

8.3 Protection of Personnel

1. General.

- Employees working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished by the use of railings, harnesses, lifelines, or some other equally effective safeguards.
- Employees shall place welding cables and other equipment so that it is clear of passageways, ladders, and stairways.

2. Eye protection.

- Selection.
    - Helmets or hand shields shall be used during all arc welding or arc cutting operations, excluding submerged arc welding. Helpers or attendants shall be provided with proper eye protection.
    - Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations. Spectacles without side shields with suitable filter lenses are permitted for use during gas welding operations on light work for torch brazing or for inspection.
    - All operators and attendants of resistance welding or resistance brazing equipment shall use transparent face

shields or goggles depending on the particular job to protect their faces or eyes, as required.

- Eye protection in the form of suitable goggles shall be provided where needed for brazing operations.

- Specifications for protectors.
  - The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs:

Welding operation	**Shade No.**
Shielded metal-arc welding: 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10
Gas-shielded arc welding (nonferrous): 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous): 1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16-, 7/32-, 1/4-inch electrodes	12
5/16-, 3/8-inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

Note: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

- All filter lenses and plates purchased by the City shall meet the test for transmission of radiant energy prescribed in ANSI Z87.1--1968--American National Standard Practice for Occupational and Educational Eye and Face Protection.

3. Protective clothing general requirements. Supervisors will ensure that employees exposed to the hazards created by hot work be protected by personal protective equipment in accordance with the requirements of 29 CFR 1910.132 (Personal Protective Equipment, General Requirements). Appropriate protective clothing required for any hot work will vary with the size, nature, and location of the work to be performed.

4. Work in confined spaces.

- General. As used herein, confined space is intended to mean a relatively small or restricted space such as a tank, boiler, or pressure vessel.
- Ventilation. Ventilation is a prerequisite to work in confined spaces. The City's confined space procedures will delineate ventilation requirements for specific operations where hot work is required.
- Securing cylinders and machinery. When hot work is being performed in any confined space the gas cylinders and welding machines shall be left on the outside. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.
- Lifelines. Where a worker performing hot work must enter a confined space through a manhole or other small opening means shall be provided for quickly removing them in case of emergency. When safety belts and lifelines are used for this purpose, they shall be so attached to the welder's body their body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure (see Confined Space Procedures) shall be stationed outside to observe the worker performing hot work at all times and be capable of putting rescue operations into effect.

8.4 Health Protection and Ventilation

1. General.

    - Screens. When hot work must be performed in a space entirely screened on all sides, the screens shall be so arranged that no serious restriction of ventilation exists. It is desirable to have the screens so mounted that they are about 2 feet (0.61 m) above the floor unless the work is performed at so low a level that the screen must be extended nearer to the floor to protect nearby workers from the glare of welding.
    - Maximum allowable concentration. Local exhaust or general ventilating systems shall be provided and arranged to keep the amount of toxic fumes, gases, or dusts below the maximum allowable concentration as specified in 29 CFR 1910.1000 (Toxic and Hazardous Substances).

2. Ventilation for general hot work. Whenever possible, all hot work should be performed in an area designated for hot work, using local exhaust hoods. However, if it is not possible to perform the hot work using local ventilation, it must be done in a well-ventilated area.

3. Cleaning compounds. In the use of cleaning materials, because of their possible toxicity or flammability, appropriate precautions such as manufacturers' instructions shall be followed.

8.5 Training

1. Initial Training. Prior to job assignment, the City shall provide training to ensure that the hazards associated with hot work are understood by employees and that the knowledge and skills required for the safe application and usage of workplace equipment are acquired by employees. The training shall include the following:

    - Each authorized employee shall receive training in the recognition of applicable hazards involved with a particular job. The methods and means necessary for safe work.
    - Each affected employee shall be instructed in the purpose and use of the confined space entry procedure (where needed).
    - All other employees whose work operations are or may be in an area where hot work is to be performed, shall be instructed about the procedure, and about the prohibitions relating to working in that area.

2. Refresher Training. Scheduled refresher training will be conducted on an as needed basis.

    - Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in hot work equipment, or a change in processes that present a new hazard when their work takes them into hazardous areas, or when there is a change in the confined space entry procedures (when used).
    - Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the City has reason to believe, that there are deviations from, or inadequacies in, the employee's knowledge of known hazards or use of equipment or procedures.
    - The retraining shall re-establish employee proficiency and introduce new equipment or revised control methods and procedures, as necessary.

3. Documentation. The City shall ensure that employee training has been accomplished and is being kept up to date. No employee shall perform any

hot work if they have not been trained on the contents of this program. The documentation shall contain each employee's name and dates of training.

8.6 Definitions

Approved means listed or approved by a nationally recognized testing laboratory. Refer to 29 CFR 1910.155 for definitions of listed and approved and 29 CFR 1910.7 for nationally recognized testing laboratory.

Brazing means a technique used to join base metals with a filler metal. The base metals are not melted in brazing.

Cutting means the use of a torch to melt metal and cut a unit part into multiple parts.

Fire Watcher means a worker who is assigned to stay in the hot-work area and look out for fires. A fire watcher must be capable of traveling above, below and to the sides of the hot work or additional personnel must be assigned to watch these exposures. Fire watch personnel must be equipped with and trained on how to use fire-suppression equipment and must know how to activate the fire alarm. A fire watcher is not a fire brigade.

Grinding means using a grinder to remove metal or another material. Grinding creates sparks capable of causing fires.

Hot Work means flame cutting, welding, brazing, soldering, grinding and application of roofing material with a torch.

Hot Work Permit means a permit issued after an area has been inspected and found not to contain fire hazards. After issuance of the permit, hot work can be undertaken for the duration of the permit but never longer than one shift.

Incipient Stage Fire means the beginning or initial stage of a fire. Generally, the heat and smoke production and fire growth are manageable. If an employee believes that a fire is too big, too smoky, or too hot, the fire is *not* an incipient stage fire.

Resistance Welding means a technique that uses the resistance of pieces of metal to create heat and fuse the pieces together.

Vendor means a non-city employee being paid to perform a service on City property.

Welding means the technique of joining metal by melting the base metals with or without the use of filler metal with an electric current or a gas-fed flame.

Welder and welding operator means any operator of electric or gas welding and cutting equipment.

All other welding terms are used as defined by the American Welding Society.

8.7 Hot Work Permit

Hot Work Permit

Date: _____ Time: _____ AM/PM Floor Location:_____

Fire Watch:_____

Permit Expiration: _____AM/PM (not valid longer than one shift)

- ☐ **WELDING/BRAZING**
- ☐ **FLAME CUTTING/TORCHING**
- ☐ **SOLDERING**
- ☐ **GRINDING**
- ☐ **OTHER _____**

PRECAUTIONS

- ☐ Cutting, welding and other equipment are in safe condition
- ☐ At least one trained fire watcher has been assigned
- ☐ Fire watcher(s) can check areas above, below and to the sides of the job site
- ☐ Area personnel has been notified of the job
- ☐ Fire suppression and alarm systems are operational
- ☐ Effective fire extinguishers are on-site (minimum 10 lb. ABC dry chemical)
- ☐ Flammable and combustible liquids are at least 35 feet away
- ☐ Combustible materials are at least 35 feet away or shielded with fire-resistant covers
- ☐ Wall, floor, and other openings within a 35-feet radius are covered
- ☐ Floor has been swept and is free of combustibles
- ☐ Combustible flooring has been wet down or covered
- ☐ Enclosed equipment has been cleaned and purged of flammable vapor and dust
- ☐ Confined Space Entry Permit has been issued (if required)

Supervisor Approval: _____

Fire Watcher Final Inspection: _____
(30 minutes after conclusion of the job)

Chapter 9 First Aid Program

29 CFR 1910.146
Revised January 2017

9

9.1 Purpose

The purpose of this program is to ensure that any illness or injury that an employee may suffer can be treated or managed until health care professionals arrive.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed;
c. When adjustments in the City's operations require program changes; or
d. When there is an accident or near miss that relates to this topic.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written first aid program in their respective departments.

9.2 First Aid Response Actions

General Instructions.

- Provide total care for those injuries clearly within your capability to handle. All questionable cases should be referred to the City's health care provider or local emergency care.

- Enter all injuries and subsequent treatment or disposition, as required or defined as an OSHA recordable, in the first aid logbook/computer file.
- Follow-up at the end of the shift or as appropriate.

First Aid. Volunteers will be trained from each of the City departments to respond to a minor injury such as small cuts, abrasions, sprains, strains, or other non-life-threatening harm. Any illness or injury requiring outside emergency services will reported as required in Section 9.4 of this document.

9.3 Training

The City will develop a standardized training format to meet the requirement for medical and first aid response.

1. Training shall be provided to each affected employee:

    - Before the employee is first assigned duties that require him or her to serve as a first aid responder.
    - Before there is a change in assigned duties.
    - Whenever there is a change in first aid procedures or operations.
    - Whenever the employee has reason to believe that there are deviations from the first aid response procedures required by this instruction or inadequacies in the employee's knowledge or use of these procedures.

2. The training shall establish employee proficiency in the duties required by this instruction and shall introduce new or revised procedures, as necessary, for compliance with this instruction or when future revisions occur.

3. The City shall certify that the training required by this section has been accomplished. The certification shall contain each employee's name, the signatures or initials of the trainers and the dates of training. The certification shall be available for inspection by employees and their authorized representatives.

4. Levels of first aid training.

    - First Aid. This basic course is available to all employees. It covers treatment of minor injuries and basic emergency procedures for more serious injuries or health problems.
    - CPR. The City encourages at least one employee from every department to take a recognized course in cardiopulmonary resuscitation, including the use of automated external defibrillator (AED).

9.4 Emergency Reporting (External Emergency Services)

IF YOU'RE NOT SURE OF THE SEVERITY, SEEK OUTSIDE ASSISTANCE

Note: The local 911 system will be used by all employees for the reporting of any emergency requiring the assistance or presence of outside emergency services.

- Summoning outside emergency services. Dial 911 for emergency services.
- In-house notification. Immediately notify a Supervisor any time outside emergency services are summoned or medical treatment is provided.
- Directing ambulance services. Post an employee(s) at a key point(s) to direct ambulance services to the injured employee's location. A member of the department should accompany the person being treated. This person should report back to the Department Head and/or a Supervisor concerning the status of the employee being transported.

9.5 Emergency Reporting (Internal Emergency Services)

Minor injuries such as cuts, scratches, bruises, and burns that do not require a physician's treatment may be treated by one of the City's department first-aid responders. If the situation escalates and additional or outside emergency services are required, see Section 9.4.

9.6 First Aid Kits

First aid kits will be maintained for each department. The type of first aid kit to be maintained will be for minor emergencies such as cuts and skin abrasions. Where it is unclear as to what type of kit to procure, the department's manager or Supervisor will be consulted.

9.7 Eyewashes and Deluge Showers

Where the eyes or body of any employee may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. This will include but is not limited to portable and fixed emergency eyewash stations and deluge showers. Where installed, these facilities will be installed in locations within the work area having ready access and periodically inspected in accordance with ANSI requirements.

1. Considerations for installation. The following criteria will be considered when making a determination for installation of eyewashes and deluge showers:

    - Employee use of personal protective equipment.
    - Type and chemical concentration of concern.

- Special guards and/or precautions intended to provide for employee protection from exposure.
- Based upon employee job functions, determine the extent and type of probable employee exposure.

Note: In areas where the extent of possible exposure is small and proper personal protective equipment is used, a specially designated pressure controlled and labeled (with a sign) water hose or an appropriate portable eye wash device will, at minimum, suffice. The water hose must be equipped with a proper face and body wash nozzle and capable of providing copious amounts of low velocity potable water. The eye wash devices must contain not less than one gallon of potable water, be readily available and be mounted for use.

2. Personal Protective Equipment. Personal protective equipment for eyes, face, head, and extremities, protective clothing and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of chemical hazards encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact.

3. The City facility layout. The City's facility layout will be one of the key considerations when installing eyewashes or deluge showers. Ease of access, line-of-sight, single level access, lighting, proximal electrical hazards, and other considerations will be addressed when installing such equipment. Eye wash equipment should provide copious low velocity flow of potable water at a suitable temperature, generally between 60 degrees F and 105 degrees F.

Chapter 10 Hearing Protection Program

29 CFR 1910.95
Revised January 2017

10

10.1 Purpose

Loud sounds can damage hearing. The purpose of this program is to detect loud noise early and reduce its potential harmful effects.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed;
c. When adjustments in the City's operations require program changes; or
d. When there is an accident or near miss that relates to this topic.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written hearing protection program in their respective departments.

10.2 Audiometric Testing Program

The City will maintain an audiometric testing program in accordance with the following guidelines:

- The City will establish and maintain an audiometric testing program free of charge for employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels.
- Audiometric tests will be performed by a licensed or certified audiologist, otolaryngologist, or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist, or physician.
- All audiograms obtained pursuant to this program will meet the requirements of 29 CFR 1910.95, Appendix C: Audiometric Measuring Instruments.
- The City will provide protection against the effects of noise exposure when the sound levels within the City exceed those shown in Table 10-1, when measured on the "A" scale of a standard sound level meter at slow response.

Table 10-1 PERMISSIBLE NOISE EXPOSURES

Duration per day, hours	Sound level dB slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
0 ½	110
¼ or less	115

- When noise levels are determined by octave band analysis, the equivalent A-weighted sound level will be determined by using the appropriate table from 29 CFR 1910.95, appendix 1, equivalent sound level contours. Octave band sound pressure levels may be converted to the equivalent A-weighted sound level by plotting them on the graph shown as Figure G-9, 29 CFR 1910.95 and noting the A-weighted sound level corresponding to the point of highest penetration into the sound level contours. This equivalent A-weighted sound level, which may differ from the actual A-weighted sound level of the noise, will be used to determine exposure limits from Table 10-1 of this instruction.
- When employees are subjected to sound exceeding those listed in Table 10-1, the City will administer or have administered by qualified personnel, audiometric examinations, obtain valid audiograms, and ensure proper controls are reviewed and implemented where feasible. If such controls fail to reduce sound levels within the levels of Table 10-1, personal

protective equipment will be provided and used to reduce sound levels within the levels of the table.

- If the variations in noise level involve intervals of 1 second or less, it will be considered to be continuous. When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect will be considered, rather than the individual effect of each.
- Exposure to impulsive or impact noise will not exceed 140 dB peak sound pressure level.

10.3 Hearing Conservation Program

The City is dedicated to providing a safe and healthful working environment. Safety in all operations and activities is of primary importance. Ultimately however, it is the employee's responsibility to seek assistance when required, and to carry out the job in a safe manner. The City will administer a continuing, effective hearing conservation program as described in the following paragraphs whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures will be computed without regard to any attenuation provided by the use of personal protective equipment.

1. An 8-hour time-weighted average of 85 decibels or a dose of fifty percent will also be referred to as the action level.

2. Monitoring. When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the City will implement this monitoring program.

    - It will conduct sampling on an annual basis and will be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors.
    - Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, it will use representative personnel sampling to comply with the monitoring requirements of this instruction unless it can be shown that area sampling produces equivalent results.
    - All continuous, intermittent, and impulsive sound levels from 80 decibels to 130 decibels will be integrated into the noise measurements. Instruments used to measure employee noise exposure will have been calibrated to ensure measurement accuracy.
    - Monitoring will be repeated whenever a change in production, process, equipment, or controls increases noise exposures to the extent that:
        - Additional employees may be exposed at or above the action level.

  - The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet the requirements of paragraph (j) of 29 CFR 1910.95.
- Employee notification. The City will notify each employee exposed at or above an 8-hour time-weighted average of 85 decibels of the results of the monitoring.
- Observation of monitoring. The City will provide affected employees or their representatives with an opportunity to observe any noise measurements conducted.
- Baseline audiogram. Within 6 months of an employee's first exposure at or above the action level, the City will establish a valid baseline audiogram against which subsequent audiograms can be compared. The City will obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level. Where baseline audiograms are obtained more than 6 months after the employee's first exposure at or above the action level, employees will wear hearing protectors for any period exceeding six months after first exposure until the baseline audiogram is obtained.
  - Testing to establish a baseline audiogram will be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.
  - The City will notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.
- Annual audiogram. At least annually after obtaining the baseline audiogram, the City will obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.
- Evaluation of audiogram. Each employee's annual audiogram will be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. This comparison may be done by an individual trained to technician level. If the annual audiogram shows that an employee has suffered a standard threshold shift, a retest will be administered within 30 days and the results considered as the annual audiogram.
- Problem audiograms. The City will ensure that an audiologist, otolaryngologist, or physician reviews problem audiograms and determine whether there is a need for further evaluation. The reviewer will be provided the following information:
  - The baseline audiogram and most recent audiogram of the employee to be evaluated.
  - Measurements of background sound pressure levels in the audiometric test room (if the testing was not conducted at the reviewer's facility).

- Records of audiometer calibrations (if the testing was not conducted at the reviewer's facility).

- Follow-up procedures. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the employee will be informed of this fact in writing, within 21 days of the determination.
- Standard threshold shift. A standard threshold shift is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear. In determining whether a standard threshold shift has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F, 29 CFR 1910.95: Calculation and Application of Age Correction to Audiograms. Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the City will ensure that the following steps are taken when a standard threshold shift occurs:
  - Employees exposed or potentially exposed to high noise will be fitted with hearing protectors, trained in their use and care, and required to use them. For known high noise job assignments employees will be fitted and trained prior to job assignment.
  - Employees already using hearing protectors will be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.
  - Employees will be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if it is suspected that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
  - Employees will be informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.
  - If subsequent audiometric testing of an employee whose exposure to noise is less than an 8-hour TWA of 90 decibels indicates that a standard threshold shift is not persistent, the City:
    - Will inform the employee of the new audiometric interpretation.
    - May discontinue the required use of hearing protectors for that employee.
- Revised baseline. An annual audiogram may be substituted for the baseline audiogram when, in the judgment of the audiologist, otolaryngologist or physician who is evaluating the audiogram determines that:
  - The standard threshold shift revealed by the audiogram is persistent.
  - The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

- Audiometric test requirements. Audiometric tests conducted on employees of the City will be pure tone, air conduction, hearing threshold examinations, with test frequencies including as a minimum 500, 1000, 2000, 3000, 4000, and 6000 Hz. Tests at each frequency will be taken separately for each ear.
    - Audiometric tests will be conducted with audiometers (including microprocessor audiometers) that meet the specifications of, and are maintained and used in accordance with, American National Standard Specification for Audiometers, S3.6-1969.
    - Pulsed-tone and self-recording audiometers, if used, will meet the requirements specified in Appendix C, 29 CFR 1910.95: Audiometric Measuring Instruments.
    - Audiometric examinations will be administered in a room meeting the requirements listed in Appendix D, 29 CFR 1910.95: Audiometric Test Rooms.
    - Audiometer calibration. The functional operation of the audiometer will be checked before each day's use by testing a person with known, stable hearing thresholds, and by listening to the audiometer's output to make sure that the output is free from distorted or unwanted sounds. Deviations of 10 decibels or greater require an acoustic calibration.
    - Audiometer calibration will be checked acoustically at least annually in accordance with Appendix E: Acoustic Calibration of Audiometers. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this check. Deviations of 15 decibels or greater require an exhaustive calibration.
    - An exhaustive calibration will be performed at least every two years in accordance with sections 4.1.2; 4.1.3.; 4.1.4.3; 4.2; 4.4.1; 4.4.2; 4.4.3; and 4.5 of the American National Standard Specification for Audiometers, S3.6-1969. Test frequencies below 500 Hz and above 6000 Hz may be omitted from this calibration.

3. Hearing protectors. The City will make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors will be replaced at no cost as necessary.

    - The City will ensure that hearing protectors are worn:
        - By any employee who is required by previous testing to wear personal protective equipment.
        - By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who has not yet had a baseline audiogram established or has experienced a standard threshold shift.
    - Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided.

- It will provide training in the use and care of all hearing protectors provided to employees.
- It will ensure proper initial fitting and supervise the correct use of all hearing protectors.

4. Hearing protector attenuation. The City will evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. One of the evaluation methods described in Appendix B: Methods for Estimating the Adequacy of Hearing Protection Attenuation will be used.

   - Selected hearing protectors will attenuate employee exposure at least to an 8-hour time-weighted average of 90 decibels.
   - For employees who have experienced a standard threshold shift, selected hearing protectors must attenuate their exposure to an 8-hour time-weighted average of 85 decibels or below.
   - The adequacy of hearing protector attenuation will be re-evaluated whenever employee noise exposures increase to the extent that the hearing protectors provided may no longer provide adequate attenuation. More effective hearing protectors will be provided where necessary.

10.4 Training Program

The City will institute a training program for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels and will ensure employee participation in such program.

The training program will be repeated annually for each employee included in the hearing conservation program. Information provided in the training program will be updated to be consistent with changes in protective equipment and work processes. Each employee will be informed of the following:

- The effects of noise on hearing.
- The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care.
- The purpose of audiometric testing, and an explanation of the test procedures.

The City will make available to affected employees, or their representatives, copies of this standard practice instruction and 29 CFR 1910.95 and will also post a copy in the workplace. It will provide to affected employees any informational materials pertaining to 29 CFR 1910.95 that are supplied by OSHA.

10.5 Recordkeeping

The City will maintain an accurate record of all employee exposure measurements.

1. Audiometric tests. The City will retain all employee audiometric test records. This record will include as a minimum:

    - Name and job classification of the employee.
    - Date of the audiogram.
    - The examiner's name.
    - Date of the last acoustic or exhaustive calibration of the audiometer.
    - Employee's most recent noise exposure assessment.
    - It will maintain accurate records of the measurements of the background sound pressure levels in audiometric test rooms.

2. Record retention. It will retain audiometric and related records for at least the following periods.

    - Noise exposure measurement records will be retained for two years.
    - Audiometric test records will be retained for the duration of the affected employee's employment.

3. Access to records. All records cited in this standard practice instruction will be provided upon request to employees, former employees, representatives designated by the individual employee, and representatives of OSHA. The provisions of 29 CFR 1910.20 apply to access to records under this section.

4. Transfer of records. If the City ceases to do business, the records will be transferred to its successor and maintained by the successor. Should the City cease to function entirely the records will be provided to the respective employees, or as required by current law.

10.6 Definitions

Definitions commonly found in the OSHA Occupational Noise Exposure Standard or that relate to the contents of the standard practice instruction.

Action level means an 8-hour time-weighted average of 85 decibels measured on the A-scale, slow response, or equivalently, a dose of fifty percent.

Audiogram means a chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiologist means a professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech-Language-Hearing Association or licensed by a state board of examiners.

Baseline audiogram means the audiogram against which future audiograms are compared.

Criterion sound level means a sound level of 90 decibels.

Decibel (dB) means a unit of measurement of sound level.

Hertz (Hz) means a unit of measurement of frequency, numerically equal to cycles per second.

Medical pathology means a disorder or disease. For purposes of this instruction, a condition or disease affecting the ear which should be treated by a physician specialist.

Noise dose means the ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time-averaged, squared A-weighted sound pressure and (2) the product of the criterion duration (8 hours) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

Noise dosimeter means an instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Otolaryngologist means a physician specializing in diagnosis and treatment of disorders of the ear, nose, and throat.

Representative exposure means measurements of an employee's noise dose or 8-hour time-weighted average sound level that the employers deem to be representative of the exposures of other employees in the workplace.

Sound level means ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this instruction, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

Sound level meter means an instrument for the measurement of sound level.

Time weighted average sound level means that sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

10.7 Appendix A: Noise Exposure Computation

29 CFR 1910.95

- When the sound level, L, is constant over the entire work shift, the noise dose, D, in percent, is given by: D = 100 C/T where C is the total length of the workday, in hours, and T is the reference duration corresponding to the measured sound level, L, as given in Table 10-2 below or by the formula.
- When the work shift noise exposure is composed of two or more periods of noise at different levels, the total noise dose over the workday is given by:

$$D = 100 (C1/T1+C2/T2+ \ldots + Cn/Tn),$$

Where Cn indicates the total time of exposure at a specific noise level, and Tn indicates the reference duration for that level as given by Table 10-2. The eight-hour time weighted average sound level (TWA), in decibels, may be computed from the dose, in percent, by means of the formula: TWA = 16.61 log10 (D/100)+90. For an eight-hour work shift with the noise level constant over the entire shift, the TWA is equal to the measured sound level.

Table 10-2

A-weighted sound level L (decibel)	Reference duration T (hour)
80	32.0
81	27.9
82	24.3
83	21.1
84	18.4
85	16.0
86	13.9
87	12.1
88	10.6
89	9.2
90	8.0
91	7.0
92	6.1
93	5.3
94	4.6
95	4.0
96	3.5
97	3.0
98	2.6
99	2.3
100	2.0
101	1.7
102	1.5
103	1.3
104	1.1
105	1.0
106	0.87
107	0.76
108	0.66
109	0.57
110	0.5
111	0.44
112	0.38
113	0.33
114	0.29
115	0.25
116	0.22
117	0.19
118	0.16
119	0.14
120	0.125
121	0.11
122	0.095
123	0.082

A-weighted sound level L (decibel)	Reference duration T (hour)
124	0.072
125	0.063
126	0.054
127	0.047
128	0.041
129	0.036
130	0.031

In the above table the reference duration, T, is computed by

$T = \frac{8}{2^{(L-90)/5}}$ where L is the measured A-weighted sound level.

Conversion between "Dose" and "8-Hour Time-Weighted Average" Sound Level.

- Compliance will be determined by the amount of exposure to noise in the workplace. The amount of such exposure will usually be measured with an audio dosimeter which gives a readout in terms of "dose." Dosimeter readings can be converted to an "8-hour time-weighted average sound level." (TWA).
- In order to convert the reading of a dosimeter into TWA, see Table below. This table applies to dosimeters that are set by the manufacturer to calculate dose or percent exposure according to the relationships in Table 10-3. So, for example, a dose of 91 percent over an eight-hour day results in a TWA of 89.3 dB, and a dose of 50 percent corresponds to a TWA of 85 dB.
- If the dose as read on the dosimeter is less than or greater than the values found in Table 10-3, the TWA may be calculated by using the formula: TWA = 16.61 log10 (D/100)+90 where TWA = 8-hour time-weighted average sound level and D = accumulated dose in percent exposure. Conversion From "Percent Noise Exposure" or "Dose" to "8-Hour Time-Weighted Average Sound Level" (TWA)

Table 10-3

Dose or percent noise exposure	TWA	Dose or percent noise exposure	TWA	Dose or percent noise exposure	TWA	Dose or percent noise exposure	TWA
10	73.4	104	90.3	270	97.2	650	103.5
15	76.3	105	90.4	280	97.4	660	103.6
20	78.4	106	90.4	290	97.7	670	103.7
25	80	107	90.5	300	97.9	680	103.8
30	81.3	108	90.6	310	98.2	690	103.9
35	82.4	109	90.6	320	98.4	700	104
40	83.4	110	90.7	330	98.6	710	104.1
45	84.2	111	90.8	340	98.8	720	104.2
50	85	112	90.8	350	99	730	104.3
55	85.7	114	90.9	360	99.2	740	104.4
60	86.3	115	91.1	370	99.4	750	104.5
65	86.9	116	91.1	380	99.6	760	104.6
70	87.4	117	91.1	390	99.8	770	104.7
75	87.9	118	91.2	400	100	780	104.8
80	88.4	119	91.3	410	100.2	790	104.9
81	88.5	120	91.3	420	100.4	800	105
82	88.6	125	91.6	430	100.5	810	105.1
83	88.7	130	91.9	440	100.7	820	105.2
84	88.7	135	92.2	450	100.8	830	105.3
85	88.8	140	92.4	460	101	840	105.4
86	88.9	145	92.7	470	101.2	850	105.4
87	89	150	92.9	480	101.3	860	105.5
88	89.1	155	93.2	490	101.5	870	105.6
90	89.2	160	93.4	500	101.6	880	105.7
91	89.3	165	93.6	510	101.8	890	105.8
92	89.4	170	93.8	520	101.9	900	105.8
93	89.5	175	94	530	102	910	105.9
94	89.6	180	94.2	540	102.2	920	106
95	89.6	185	94.4	550	102.3	930	106.1
96	89.7	190	94.6	560	102.4	940	106.2
97	89.8	195	94.8	570	102.6	950	106.2
98	89.9	200	95	580	102.7	960	106.3
99	89.9	220	95.7	590	102.8	970	106.4
100	90	230	96	600	102.9	980	106.5
101	90.1	240	96.3	610	103	990	106.5
102	90.1	250	96.6	620	103.2	999	106.6
103	90.2	260	96.9	640	103.4		

10.8 Appendix B: The Adequacy of Hearing Protection Attenuation

29 CFR 1910.95

For employees who have experienced a significant threshold shift, hearing protection provided will have an attenuation that is sufficient to reduce employee exposure to a TWA of 85 dB. The following method will be used to estimate the adequacy of hearing protector attenuation.

The Noise Reduction Rating (NRR) developed by the Environmental Protection Agency (EPA) will be used. Only approved hearing protection equipment showing the NRR on the hearing protector package will be used by employees of the City. The NRR will be related to an individual employee's noise environment in order to assess the adequacy of the attenuation of a given hearing protector. When using the NRR to assess hearing protector adequacy, one of the following methods will be used:

1. Dosimeter (C-weighted):

    - Obtain the employee's C-weighted dose for the entire work shift and convert to TWA.
    - Subtract the NRR from the C-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

2. Dosimeter (not capable of C-weighted measurements):

    - Convert the A-weighted dose to TWA.
    - Subtract 7 dB from the NRR.
    - Subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

3. Sound level meter (set to the A-weighting network):

    - Obtain the employee's A-weighted TWA.
    - Subtract 7 dB from the NRR and subtract the remainder from the A-weighted TWA to obtain the estimated A-weighted TWA under the ear protector.

4. Sound level meter (set to the C-weighting network):

    - Obtain a representative sample of the C-weighted sound levels in the employee's environment.
    - Subtract the NRR from the C-weighted average sound level to obtain the estimated A-weighted TWA under the ear protector.

5. When using area monitoring procedures and a sound level meter set to the A-weighting network:

   - Obtain a representative sound level for the area in question.
   - Subtract 7 dB from the NRR and subtract the remainder from the A-weighted sound level for that area.

6. When using area monitoring procedures and a sound level meter set to the C-weighting network:

   - Obtain a representative sound level for the area in question.
   - Subtract the NRR from the C-weighted sound level for that area.

Table 10-4: Age Correction Values in Decibels for Males

	Audiometric test frequency (Hz)				
Years	**1000**	**2000**	**3000**	**4000**	**6000**
20 or younger	5	3	4	5	8
21	5	3	4	5	8
22	5	3	4	5	8
23	5	3	4	6	9
24	5	3	5	6	9
25	5	3	5	7	10
26	5	4	5	7	10
27	5	4	6	7	11
28	6	4	6	8	11
29	6	4	6	8	12
30	6	4	6	9	12
31	6	4	7	9	13
32	6	5	7	10	14
33	6	5	7	10	14
34	6	5	8	11	15
35	7	5	8	11	15
36	7	5	9	12	16
37	7	6	9	12	17
38	7	6	9	13	17
39	7	6	10	14	18
40	7	6	10	14	19
41	7	6	10	14	20
42	8	7	11	16	20
43	8	7	12	16	21
44	8	7	12	17	22
45	8	7	13	18	23
46	8	8	13	19	24
47	8	8	14	19	24

	Audiometric test frequency (Hz)				
Years	**1000**	**2000**	**3000**	**4000**	**6000**
48	9	8	14	20	25
49	9	9	15	21	26
50	9	9	16	22	27
51	9	9	16	23	28
52	9	10	17	24	29
53	9	10	18	25	30
54	10	10	18	26	31
55	10	11	19	27	32
56	10	11	20	28	34
57	10	11	21	29	35
58	10	12	22	31	36
59	11	12	22	32	37
60 or older	11	13	23	33	38

Table 10-5: Age Correction Values in Decibels for Females

	Audiometric test frequency (Hz)				
Years	**1000**	**2000**	**3000**	**4000**	**6000**
20 or younger	7	4	3	3	6
21	7	4	4	3	6
22	7	4	4	4	6
23	7	5	4	4	7
24	7	5	4	4	7
25	8	5	4	4	7
26	8	5	5	4	8
27	8	5	5	5	8
28	8	5	5	5	8
29	8	5	5	5	9
30	8	6	5	5	9
31	8	6	6	5	9
32	9	6	6	6	10
33	9	6	6	6	10
34	9	6	6	6	10
35	9	6	7	7	11
36	9	7	7	7	11
37	9	7	7	7	12
38	10	7	7	7	12
39	10	7	8	8	12
40	10	7	8	8	13
41	10	8	8	8	13
42	10	8	9	9	13

	Audiometric test frequency (Hz)				
Years	**1000**	**2000**	**3000**	**4000**	**6000**
43	11	8	9	9	14
44	11	8	9	9	14
45	11	8	10	10	15
46	11	9	10	10	15
47	11	9	10	11	16
48	12	9	11	11	16
49	12	9	11	11	16
50	12	10	11	12	17
51	12	10	12	12	17
52	12	10	12	13	18
53	13	10	13	13	18
54	13	11	13	14	19
55	13	11	14	14	19
56	13	11	14	15	20
57	13	11	15	15	20
58	14	12	15	16	21
59	14	12	16	16	21
60 or older	14	12	16	17	22

Example to determine Age Correction Values in Decibels for Males and Females.

	Audiometric test frequency (Hz)				
Employee's age	**1000**	**2000**	**3000**	**4000**	**6000**
Age 32	6	5	7	10	14
Age 27	5	4	6	7	11
Difference	1	1	1	3	3

The difference represents the amount of hearing loss that may be attributed to aging in the time period between the baseline audiogram and the most recent audiogram. In this example, the difference at 4000 Hz is 3 dB. This value is subtracted from the hearing level at 4000 Hz, which in the most recent audiogram is 25, yielding 22 after adjustments. Then the hearing threshold in the baseline audiogram at 4000 Hz (5) is subtracted from the adjusted annual audiogram hearing threshold at 4000 Hz (22). Thus, the age-corrected threshold shift would be 17 dB (as opposed to a threshold shift of 20 dB without age correction).

Chapter 11 Emergency Preparedness and Crisis Management Program

29 CFR 1910.36, .38, .157, .165
Revised January 2017

11

11.1 Purpose

The purpose of this program is to prepare for an emergency or crisis so employees will know how to safely respond.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation of this program requires support from all levels of management within the City. This written program will be communicated to all personnel that are affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written emergency preparedness and crisis management program in their respective departments.

11.2 General Requirements

The City will ensure that action plans are developed for this program which address a variety of emergencies. This program details the basic steps and planning documents the City will initiate to prepare for emergencies at City facilities and/or field work sites. These emergencies include accidental releases of toxic gases, chemical spills, fires,

explosions, natural disasters, and personal injury. This program is intended to serve as a guideline for evaluating and identifying potential emergencies, planning for emergencies, developing appropriate written procedures, and communicating information concerning these hazards to employees.

11.3 Planning Requirements

Proper planning for emergencies is necessary to minimize employee injury and property damage. The effectiveness of response during emergencies depends on the amount of planning and training performed. It is management's responsibility to ensure that this program is instituted, reviewed, and updated as required. All employees are encouraged to support this program to ensure the program's effectiveness. The emergency response plans required by the City will be developed internally for each department and/or facility and they will be comprehensive enough to deal with all known types of emergencies.

1. Emergency Action Plans: When emergency action plans are required by a particular OSHA standard, the plan will be in writing and the plan will include, as a minimum, the following elements:

    - Emergency escape procedures, emergency escape route assignments, and clearly identified emergency shelter areas.
    - Procedures to be followed by employees who remain to perform (or shut down) critical operations before they evacuate.
    - Procedures to account for all employees after emergency evacuations have been completed.
    - Rescue and medical duties for those employees who are to perform them.
    - The means for reporting fires and other emergencies.
    - The names or regular job titles of persons to be contacted for further information or explanation of duties under the plan.
    - Procedures for employees to follow if contacted by the media.

2. Hazard Audits: The emergency action plan will address all potential emergencies that can be expected at City facilities. Therefore, it will be necessary to perform a hazard audit to determine potentially toxic materials and unsafe conditions at these facilities.

    - For information on chemicals, the City will maintain the required Safety Data Sheets. These forms describe the hazards that a chemical may present, list precautions to take when handling, storing, using the substance, and outline emergency and first-aid procedures.
    - Emergency essential employees may include emergency dispatch personnel or other essential classifications identified by the Department Directors. The plan will list in detail the procedures to be taken by those employees who must remain behind to care for essential department operations until their evacuation becomes absolutely necessary. This may include monitoring communications, water supplies, and other essential services that cannot be shut down for every emergency alarm.

- For emergency evacuation, floor plans or workplace maps that clearly show the emergency escape routes and refuge areas will be included in the plan. All employees will be advised what actions they are to take in the emergency situations that may occur in the workplace.

3. Plan Revision: This plan will be reviewed with employees initially when the plan is developed, whenever the employees' responsibilities under the plan change, and whenever the plan is changed.

11.4 Chain of Command

Each program developed by the City, which addresses an emergency preparedness topic, will ensure that a clear chain of command is established. The goal is to minimize confusion so that employees will have no doubt who has authority for making decisions.

Responsible individuals will be selected to coordinate the work of the emergency response team. Where necessary, a facility coordinator in charge of facility-wide operations, public relations, and ensuring that outside aid is called in will be established. Because of the importance of these functions, adequate backup must be arranged so that trained personnel are always available. An Emergency Response Team Coordinator will be identified for each City operated facility where employees are normally assigned. The duties of the Emergency Response Team Coordinator, where established, may include the following:

- Assessing the situation and determining whether an emergency exists that requires activating the emergency procedures.
- Directing all efforts in the area including evacuating personnel and minimizing property loss.
- Ensuring that outside emergency services such as medical aid and local fire departments are called in (or provisions for notification) when necessary.
- Directing the shutdown of operations when necessary.

11.5 Communications

Each action plan developed by the City, which addresses an emergency preparedness topic, will ensure that communication requirements are addressed. During a major emergency involving a fire or explosion it may be necessary to evacuate multiple facilities. Normal services, such as electricity, water, and telephones, may be nonexistent. Under these conditions, it may be necessary to have an evacuation relocation point established to which employees can report or that can act as a focal point for incoming and outgoing calls. Since time is an essential element for adequate response, the person designated as being in charge will make this the alternate headquarters so that they can be easily reached.

Emergency Notification – Outside Agencies: Notification/requests for assistance shall be made by any employee witnessing the event or situation. Management will ensure all telephones in use at each City facility have easy to understand instructions (in plain view) informing users how to quickly contact the Police, Fire and EMS Departments, etc.

Emergency Notification - Employee: A method of communication also is needed to alert employees to the evacuation or to take other action as required in the plan.

Alarms or other means of communication shall be identified for each facility by type of emergency and will be audible or seen by all employees at each City facility. That means of communication will have an auxiliary power supply in the event electricity is affected. The alarm should be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan.

- The employee alarm system shall provide warning for necessary emergency action as called for in the crisis action plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.
- The alarm system shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices will be used to alert those employees in areas where they would not otherwise be able to recognize the audible or visual alarm.
- The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the crisis action plan.
- The City shall establish procedures for sounding emergency alarms in the workplace.
- All employee emergency notification systems will be restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction shall be available in sufficient quantities and locations for prompt restoration of the system.
- The City shall assure that all employee emergency notification systems are maintained in operating condition except when undergoing repairs or maintenance.
- The City shall ensure the reliability and adequacy of the employee emergency notification systems by performing regular tests.

The City will explain to each employee the means for reporting emergencies, such as manual pull box alarms, public address systems, or telephones. Emergency phone numbers will be posted on or near telephones, on employees' notice boards, or in other conspicuous locations.

An alarm warning plan should be developed. Management must be sure each employee knows what it means and what action is to be taken.

Off-duty key personnel notification. It may be necessary to notify other key personnel during off-duty hours. An updated written list of key personnel in order of priority will be maintained by each department.

11.6 Accounting for Personnel

Management will need to know when all personnel have been accounted for. This can be difficult during shift changes or if contractors are on site. Supervisors, managers, or designated team members will account for personnel and inform rescue personnel and/or Emergency Response Team members of those persons believed missing.

- An accurate updated list of employees shall be maintained in each department and be readily accessible to Emergency Response Team members during all emergencies.
- Each department will develop a system to track the whereabouts of contractors/vendors who may be on site during an emergency.

11.7 Emergency Response Teams

Each department will establish an Emergency Response Team and designate an Emergency Response Team Leader for each assigned facility. Since several departments may occupy one facility, the Emergency Response Team should have representatives for each department assigned to a facility. Emergency Response Teams should be trained in the types of possible emergencies and the emergency actions to be performed. They should be aware of special hazards such as storage and use of flammable materials, toxic chemicals, radioactive sources, and water-reactive substances. This information may need to be relayed to emergency response personnel.

11.8 Training

Training is important to the effectiveness of an emergency plan. Before implementing an emergency action plan, a sufficient number of persons must be trained to assist in the safe and orderly evacuation of employees. Training for each type of disaster response is necessary so that employees know what actions are required.

1. All employees will be trained on the following topics:

    - Evacuation plan(s) and procedure(s).
    - Emergency notification systems for each type of emergency.
    - Appropriate reporting procedures for personnel.
    - Shutdown procedures, where applicable.
    - Proper use of fire extinguishers.

2. Training will be provided as follows:

    - Initially when plan is developed.
    - For all new employees.
    - When new equipment, materials, or processes are introduced.
    - When procedures have been updated or revised.

- When exercises indicate that employee performance must be improved.
- At least annually, according to department safety training schedules.

11.9 Drills and Performance Evaluation Criteria

Emergency control procedures will be written in concise terms for each City facility and made available to all personnel. A drill will be held for all personnel at random intervals at least annually and an evaluation of performance made immediately by management and employees. When possible, drills will include groups supplying outside services such as Fire, Emergency Medical Services, and Police Departments. The emergency plan will be reviewed periodically and updated to maintain adequate response personnel and program efficiency. Performance evaluation criteria will be developed and used to measure the effectiveness of periodic drills. Drills will incorporate the use of different types of scenarios.

11.10 Personal Protection

Effective personal protection is essential for any person who may be exposed to potentially hazardous substances. Refer to Chapter 7, Personnel Protective Equipment/Job Hazard Analysis Program, and Job Hazard Analysis Forms for everyday activities requiring personal protective equipment.

11.11 Medical Assistance

In a major emergency, time is a critical factor in minimizing injuries. The City will ensure the ready availability of medical personnel for advice and consultation on matters of employee health. If health problems develop in the workplace, medical help will be available to resolve them. To fulfill the above requirements the following actions will be considered:

- The City has made arrangements to handle routine first aid cases and emergency cases.
- At least one and preferably more employees on each shift at each facility will be adequately trained to render first aid.
- First-aid supplies will be provided for emergency use.
- Emergency phone numbers will be posted in conspicuous places near or on telephones.

11.12 Security

During an emergency, it is often necessary to secure the area to prevent unauthorized access and to protect vital records and equipment. The Department Directors or designees shall make this determination and ensure appropriate plans and procedures are established.

11.13 Types of Emergencies and Related Procedures

Management will develop appropriate evacuation plans and identify appropriate emergency shelter areas for each facility and all employees will adhere to the procedures. The Department Directors or designees will coordinate with local Emergency Management officials concerning the safety of the facility. This person will provide a single point of contact for their facility. The decision to authorize employees to return to work will not be made until coordination is complete. No Supervisor will allow any employee to return to the facility or exit the shelter area until the all clear has been given.

1. Severe Weather: To ensure employee safety in case of a tornado, or other severe weather, the City requires all employees to follow this plan when a Tornado Warning sounds either by siren, media, or sighting.

    - Local Emergency Management authorities will be consulted to assess the location of the facility tornado shelter(s). When tornado actions are activated, employees should report to the storm shelter(s).
    - Employees should quickly proceed to the storm shelter and sit down on the floor and cover head, face, and body if the tornado hits. Everyone should also stay in the shelter until an "all clear" signal is given, or it is known to be safe outside the shelter.

2. Fires: The City recognizes that many disasters are averted every year by an employee or bystander, when they take the action to use a small hand fire extinguisher to put out a fire. However, in accordance with OSHA Standard 29 CFR 1910.38, the City will ensure that all occupants are safely removed from the building in case of a fire.

    - Any employee who notices a fire should immediately contact the Fire Department and sound the appropriate alarm to trigger the evacuation of the facility.
    - The City will properly train all employees on the correct usage of the fire extinguishing equipment and the various stages of fire. The City's policy is to teach all required employees to properly use a fire extinguisher only when the fire is in the incipient (beginning) stages.
    - Employees will assemble at the assembly point as designated in the facility's emergency evacuation plan.

3. Floods: The City has determined that flooding may occur in our area. When conditions are prone to flooding, the City's Municipal Emergency Management Coordinator will maintain constant watch for flood conditions and will notify the City when to initiate a response. Initial Response Actions may include:

- Employees may be released from normal duties and sent to a safe haven for further instructions or sent home in the case of an imminent flooding incident.
- Where possible, all moveable electrical equipment and hazardous chemicals shall be relocated to high ground enough as to not increase the hazard to employees or the community.
- All employees should help any visitors and other personnel from the facility and instruct them in evacuation procedures from the area.
- All employees will be advised not to drive across roadways having running water. The roadway cannot be seen to detect areas of road surface failure.
- Supervisors should direct the shut-off of all power to equipment and natural gas or propane at the source if possible.
- Employees will assemble at the assembly point as designated in the facility's emergency evacuation plan.

4. Earthquake: The City has identified that earthquakes are not likely but there is a remote possibility that they may occur in our area. Earthquakes seldom provide any warning. Instinctive reactions are critical to survival and to avoid injury.

5. Workplace Violence: Violent acts in the workplace are becoming more and more commonplace. The City is committed to ensuring the safety of all employees and visitors to this facility. Violent act for the purposes of this program is defined as an act in which a person or persons act in such a way as to threaten or endanger another person's safety. Examples of violent acts in the workplace include the following:
   - Terrorism
   - Bomb Threats
   - Assault (may be committed by an employee or somebody outside the organization)
   - Shootings
   - Robbery
   - Homicide
   - Kidnapping
   - Rape
   - Harassing phone calls
   - Personal Threats

6. Guidelines for Employees to Follow During and After a Workplace Violence incident:

   - Calmness is contagious, try to remain calm and try to remember as much about the event as possible.
   - Your immediate goal is to prevent anyone from being injured or killed. In many cases the assailant will not harm anyone as long as they perceive that their objectives are being met. Also, in many cases, someone may

determine that the incident is building. Early intervention may then be possible.

- Call the police as soon as possible. If you are out of sight of the assailant and a phone is available, cautiously notify the police if your judgment of the circumstances dictates this action to be appropriate. If you feel you will be detected, attempt to call the police as soon you are able to do so safely or when the assailant leaves your area. If the phone lines at your location have been disabled, when you can safely leave, do so and notify the police. Relay all the information requested to help the dispatcher determine the extent of the emergency to dispatch the appropriate services. Volunteer any additional information you feel would be helpful. The dispatcher will send Police, Emergency Medical Services, or Fire Departments as needed.
- In most cases the best thing to do is to cooperate. Remember as much as possible concerning the incident, write notes after the fact if possible. Be a good witness to assist the police in apprehending the assailant. Cooperate in accordance with your best judgment given the circumstances.
- If you are out of sight of the assailant and a silent alarm is available, cautiously activate the alarm if your judgment of the circumstances dictates this action to be appropriate.
- If someone is injured, render first aid until help arrives.
- If there is a fatality or multiple fatalities, keep everyone back until the police arrive.
- If the assailant leaves a weapon, don't touch it or move it. Inform the police upon their arrival.
- Make every effort to disturb the crime scene as little as possible.
- As a witness it is important to try to remember details or take notes so you will be able to provide a description of the assailant and their vehicle. Remind anyone that may have witnessed the incident to write down what they saw and to provide it to the police.

Assailant Identification: To help you remember what the assailant looked like use, a comparative description. For example, do they look like someone else you know or a movie star, employee, spouse, brother, neighbor, or anyone else from who the police could develop a description. Consider the following characteristics when developing a description:

- General Build
- Skin Color
- Eye Color
- Hair Color/Style
- Beard/Mustache Color/Style
- Glasses Color/Style
- Clothes/Shoes
- Speech Type (*i.e.*, accent, stutter, etc.)
- Smell or odor

Assailant Vehicle Description: To help you remember what the vehicle looked like, use a comparative description. If you don't know exactly what it was describe the:

- Vehicle Body Style *(i.e*., 2-door, 4-door, hatchback, truck, etc.)
- Year, Make, and Model of Vehicle
- Color and Special Markings/Features (*i.e.,* stripes, decals, wheels, etc.)
- License Number and State

- Employees may be contacted by the media regarding an incident similar to those outlined in this program. Employees are encouraged to refer media people to City personnel who are experienced in working with the press and authorized to speak for the City. This helps assure that the media gets the facts they need and minimizes the likelihood of harmful rumors.

- In incidents involving workplace violence, the City asks all employees to cooperate with authorities conducting an investigation, including the City's Police and Fire Departments, the FBI, OSHA, the EPA, and any other agency that has jurisdiction in the incident. The Human Resources Department, in conjunction with department managers, may help arrange any interviews that need be conducted. In addition, the City may require that an attorney representing the City be present during interviews.

- The City has an Employee Assistance Program available for all employees to assist them during a crisis situation. Employees exposed to a workplace violence incident may be referred to the Employee Assistance Program by their Supervisor. The City provides this service to all employees even if the crisis is not related to the workplace.

  Any employee who is involved in an incident described in this program may be asked to complete a report, stating the incident details. Human Resources representatives will assist employees with preparing and filing the necessary report forms.

  Among the entities that may need such reports are workers' compensation or other insurance companies; Fire or Police Departments; government agencies such as OSHA or Iowa OSHA; emergency medical services agencies, attorneys, and others.

  Employees are well advised to speak carefully about coworkers who may have been involved in an emergency or crisis. It is best to withhold judgment about actions taken until all the facts are known. Confidentiality will be maintained in accordance with all City policies and applicable laws.

7. Robbery response actions: In the case of a robbery, the City instructs you to turn over money or City property upon demand.

   Try to remember details or take notes so you will be able to provide a description of the assailant and their vehicle, as described in the guidelines for employees section above.

8. Shooting Response Actions: In the case of a shooting quickly determine the most reasonable way to protect yourself: Run, Hide or Fight.

9. Shooting Aftermath: After the shooting and the assailant is gone, lock all doors so the assailant cannot easily return. Call the police if you haven't already done so. Tell the dispatcher what has happened and do not let anyone inside the building until the police arrive.

10. Threatening Employee or Visitor: The City policy concerning threatening employees or visitors is as follows: If a confrontation occurs and it is not getting resolved through communication, immediately ask the threatening person to leave the premises and inform your Supervisor. If the threatening person refuses to leave, notify the police immediately, and have the authorities remove the threatening person.

11. Harassing Phone Calls: If you receive any harassing phone calls at work, notify your Supervisor immediately. If you know who the caller is, report the incident to the local police, and the phone company. As soon as the call is over, write down any details of the incident to the best of your recollection. In the case of a harassing call, simply hang up if the call is offensive to you. Any employee found to be placing harassing calls may face disciplinary action.

12. Bomb Threats: Although most bomb threats are false and are intended to create a disturbance, a bomb threat should never be ignored and should be handled with the utmost caution. Every bomb threat should be evaluated to determine if evacuation of the facility is appropriate.

    - If an employee receives a bomb threat via the telephone, they should take note of the conversation and proceed as follows:
      - The recipient of the call should attempt to engage the caller in a conversation to determine when the bomb is to go off, where the bomb is located, and why the bomb was placed in the facility.
      - Take notes and try to write down exactly what the caller says. Indicate the exact time of the call in your notes.
      - Listen for unusual noises in the background.
      - Record the time of the call.
      - Try to determine the caller's gender, age, and accent, if any.
      - Once the call is completed, immediately notify your Supervisor, Department Director, and/or facility manager.

If an employee receives a bomb threat through a letter or note they should take the following action:

- When you determine that a letter or note is a bomb threat, immediately put it down and do not touch it or let anyone else touch it.
- Do not throw away the envelope.
- Call the police.

- Once the call is completed or you determine a letter or note is a bomb threat, immediately notify your Supervisor, Department Director, and/or facility manager.
- Once becoming aware of the incident, the Supervisor, Department Director, and/or facility manager will contact the police. Once the police have been contacted, employees will be instructed how to proceed.
- Employees may be instructed to search their individual work areas for any strange boxes, bags or other items that appear to be out of place. Anything out of the ordinary should be reported to the police immediately. UNDER NO CIRCUMSTANCES SHOULD ANY CITY OF WEST DES MOINES EMPLOYEE TOUCH THE SUSPECTED OBJECT.
- If the facility needs to be evacuated, managers will notify employees. Employees will assemble at the assembly point as designated in the facility's emergency evacuation plan.
- No Supervisor will allow any employee to return to the facility until the all clear has been given.

13. Rape and Kidnapping: The majority of these kinds of incidents are committed by persons known to the victim. However, random attacks often occur when the employee is alone, commuting to and from work. If you are attacked and feel your life is in danger, attempt escape if your judgment of the circumstances dictates this action to be appropriate. Once you escape or the attack is over, call the police as soon you're able to do so safely or when the assailant leaves your area.

    To reduce the likelihood of these types of incidents, employees are encouraged to follow the tips provided below:

    - It is recommended that City employees use the buddy system as often as possible when going to and from their vehicles.
    - Park your vehicle in well-lighted areas.
    - Always look in the back seat of your vehicle before entering it.
    - Have your keys out and ready to open your vehicle.

11.14 OSHA Standards

The following OSHA general industry standards can be used as guidelines while planning for an emergency (Code of Federal Regulations, Title 29, Part 1910).

1. Subpart E – Means of Egress
   - 1910.37 Means of Egress
   - 1910.38 Employee Emergency Plans and Fire Prevention Plans

   Appendix to subpart E – Means of Egress
2. Subpart H – Hazardous Materials: 1910.120 Hazardous Waste Operation and Emergency Response
3. Subpart I –Personal Protective Equipment
   - General Requirements— Personal Protection
   - Eye and Face Protection
   - Respiratory Protection
   - Occupational Head Protection
   - Occupational Foot Protection
   - Permit Required Confined Space Entry
4. Subpart K – Medical and First Aid: 1910.151 Medical Services and First Aid
5. Subpart L – Fire Protection
   - Fire Protection and Fire Brigades
   - Fire Suppression Equipment
   - Fire Detection Systems
   - Employee Alarm Systems
   - Appendix A-E of Subpart L - Fire Protection

Chapter 12 Incident and Near Miss Program

29 CFR 1904
Revised January 2017

12

12.1 Purpose

The purpose of this program is to investigate and determine the causes of incidents (injuries and accidents) and near misses (close calls) so they can be avoided in the future.

The Safety Supervisor Project Team will ensure this program is reviewed and, if necessary, updated:

a. At least annually;
b. When relevant government laws and regulations (including 29 CFR 1910) are changed; or
c. When adjustments in the City's operations require program changes.

Effective implementation requires a written program for job safety and health that is endorsed and advocated by the highest level of management within the City and that outlines our goals and plans. This written program will be communicated to all required personnel. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts. It is designed to establish clear goals and objectives.

The Department Directors/Managers are responsible for the effective implementation of this written incident and near miss program in their respective departments.

12.2 General Requirements

The City will establish incident and near miss investigation procedures and improve operations through the use of this document. Preventing future workplace mishaps at the City is the principal purpose of an incident investigation. This document will provide a basis for studying and recording the reasons an event occurred, identifying existing or potential job hazards (both safety and health), and determining the best course of action to take to reduce or eliminate these hazards.

12.3 Accident Investigation Project Team

The City's Accident Investigation Project Team will serve as workplace incident investigators. Workplace incident investigations will be conducted by a designated investigation team member.

12.4 Incident Investigation

A workplace incident investigation is primarily a fact-finding procedure. The facts revealed are used to prevent recurrences of similar incidents. The focus of a workplace incident investigation will be to prevent future workplace mishaps and to protect the safety and health of the City's employees, contractors, and visitors.

1. Immediate Concerns:

    - Ensure any injured person receives proper care.
    - Ensure co-workers and personnel working with similar equipment or in similar jobs are aware of the situation. This is to ensure that procedural problems or defects in certain models of equipment do not exist.
    - Start the investigation promptly.

2. Review: To ensure pertinent information is conveyed to all affected personnel and appropriate remedial actions are employed, all incident investigations will be reviewed and investigated by the Accident Investigation Project Team and reported to Safety Supervisor Project Team members and management regularly.

12.5 Hazard and Near Miss Reporting

The City of West Des Moines Near Miss Form will be used by all employees to report potential or known hazards and near misses. The following procedures apply:

1. Person Reporting Hazard
    - Immediately notify department Safety Supervisor of hazard or near miss.
    - Fill out Near Miss Report Form and submit to your department Safety Supervisor.

2. Safety Supervisor

    - Notify all affected personnel of hazard/near miss.
    - Notify maintenance personnel of hazard/near miss as necessary.
    - Ensure the hazard is properly marked, controlled, and corrected.

- Once the hazard has been addressed and eliminated, notify all affected personnel of corrective action and give the Near Miss Report form to your Department Director to review, confirm and sign off on the corrective action that was taken.
- Bring the Near Miss Report form to the next scheduled Safety Supervisor meeting to be reviewed and discussed.
- Enter the data from the Near Miss Report form into the Near Miss Report Spreadsheet in SharePoint.
- Once all of the above steps have been completed the Near Miss Report form can be properly discarded.

A copy of the Near Miss Report form can be found in this program, Appendix A.

12.6 Job Hazard Analysis

The City will identify jobs that place employees at risk through the use of information sources and screening surveys (after a workplace incident or near miss, the task or job in question may require a job hazard analyses). This analysis would help to verify that all required actions are being taken to determine if risk factors for a work position have been reduced or eliminated to the maximum extent feasible.

See Chapter 7 of this Safety Program Manual for further information regarding job hazard analysis procedures.

12.7 Administrative Controls

Once data has been gathered and an investigation completed, the City's administrative controls will be used based on the Accident Investigation Project Team's recommendations where needed to eliminate or reduce the frequency and severity of workplace incident and near misses. Ensure all employees are properly trained in the hazards associated with the job before work is performed unsupervised.

12.8 Medical Management

The Human Resources Department, along with the City's workers' compensation insurance carrier, will manage the medical program. Employees of each work shift will have access to health care providers or designated alternates in order to facilitate treating, monitoring activities, and recording of information.

12.9 Incident Trend Analysis

The information gained from the trend analysis may help determine the effectiveness of the various programs initiated to decrease workplace incidents.

12.10 Training and Education

The purpose of workplace incident investigation training and education is to ensure all employees are sufficiently informed about the investigation program.

12.11 Appendix A: Near Miss Report Form

NEAR MISS REPORT

A near miss is a potential hazard or incident that has not resulted in any personal injury. Unsafe working conditions, unsafe employee work habits, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries. It is every employee's responsibility to report and /or correct these potential accidents/incidents immediately.

Please complete this form as a means to report near-miss situations and notify your Department Safety Supervisor immediately.

Department Incident Occurred: _____ Date: _____

Location: _____ Time: _____ ❑am ❑pm

Please check all appropriate conditions:
❑ Unsafe Act ❑ Unsafe equipment ❑ Unsafe Condition ❑ Unsafe use of equipment ❑ Other

Description of incident or potential hazard: _____
_____
_____
_____
_____
_____

Employee Name: _____ Dept: _____ Date: _____
(optional)

NEAR MISS INVESTIGATION

Description of the near-miss condition: _____
_____

Causes (primary & contributing): _____
_____

Corrective action taken (Removal of the hazard, replacement of equipment, contacted appropriate Department to correct, or retrained in the proper procedures for the task):
_____
_____
_____

Safety Supervisor Signature: _____ Date Completed: _____

Not completed for the following reason: _____

Department Head: _____ Date: _____

After completing this form, submit it to your Department Safety Supervisor.