OVERVIEW

This document was developed to assist members of the Texas Municipal League Intergovernmental Risk Pool (TMLIRP) with the development of a safety and accident prevention program. It is designed to be utilized as a guideline or template to develop new policies and procedures or enhance current programs that may already be in place within the entity. While every effort has been made to ensure completeness, this program is a template and is generic in design; therefore, not all information may be appropriate to your entity. In addition, your entity may conduct operations or provide services or functions that are not included or addressed within this document but may need to be included within policies. Please also remember that changes frequently occur in the safety field and that appropriate changes should be made with regard to policies and procedures.

The sample program is structured into three sections, plus an Appendix.

Section 1 contains seven recommended components of a comprehensive safety and accident prevention program, including:

- Management Statement of Safety
- Accident/Incident Investigation Policy
- Safety Education & Training Policy
- Safety Audit & Inspection Policy
- Recordkeeping Policy
- Accident/Incident Analysis Policy
- Safety Program Review & Revision Policy

Section 2 contains general administrative policies, procedures, and standards as well as written safety programs, specifically developed for high-risk tasks, including:

- Hazard Communication (‘Right to Know’)
- Safety-Related Disciplinary Policy
- Safety Committee Formation
- Return-to-Work (‘Modified Duty’) Policy
- Respiratory Protection
- Confined Space Entry
- Excavation and Trenching

Section 3 contains general safety rules, practices, and procedures for a variety of tasks and jobs, including administrative/clerical positions, a variety of maintenance and labor positions, public safety positions, and other general tasks common to all employees, regardless of the type of work.

The ***Appendix*** contains sample forms and reports referred to throughout the manual, such as an Accident/Incident Investigation Report, Inspection Forms, and other administrative reports and forms. The appendix is in Excel format. The forms are separate from the Microsoft Word document.

Instructions

As described above, this manual is designed to be used as a sample or template in the development of a comprehensive program for your entity. Please carefully read each section of the manual in its entirety before determining whether or not it will be used in your particular application.

Highlighted and/or parenthetically identified items, for example (ENTITY NAME), will need to be addressed by your entity prior to implementation. The 'Find' and/or 'Replace' tools in Microsoft Word can be used to assist with this endeavor as there are many references throughout the document.

However, in some cases, references will be made to a (RESPONSIBLE PERSON) or some other area in which non-generic information is required. Please read the document carefully to determine who the person(s) should be, based upon the topic or circumstance. It is unlikely that the same person would be the 'Responsible Person' throughout the entire program.

SECTION I - COMPONENTS OF A COMPREHENSIVE SAFETY AND ACCIDENT PREVENTION PROGRAM

MANAGEMENT STATEMENT OF SAFETY

Dear Employee:

The success of the (ENTITY NAME) depends upon the efficient and effective use of resources to maintain high quality services for the citizens of our community. Our most important resource is our employees and, to protect this resource, we are committed to providing a safe and healthful work place for all employees by establishing and maintaining an effective safety and accident prevention program. Safety is, and will continue to be, a fundamental part of our organization's operations.

The responsibility for safety resides within all of us and we are each challenged to stay informed and to take responsibility for our own safety and the safety of our co-workers. To ensure the success of the safety process, we must all give our full participation and support to the safety policies and procedures that have been developed to protect us. Working safely, and in accordance with established safety policies, is an absolute requirement for all employees, supervisors, and managers.

_____

(CHIEF EXECUTIVE) Signature

_____

Date

SAFETY RESPONSIBILITIES

The (RESPONSIBLE PERSON) has the responsibility to administer and implement this Safety & Accident Prevention Plan, assigning tasks to staff members as defined within the individual components.

Management Safety Responsibilities

Managers are responsible for providing a place of employment that is free from recognized hazards that could result in injuries or accidents. Since it is impossible for managers to personally observe all employee activities, they must ensure that all supervisors and employees alike are trained and are aware of their safety responsibilities. Other safety responsibilities for managers include:

- Provide leadership and direction concerning safety activities.
- Participate actively in the continuous evaluation of the safety program.
- Set goals concerning safety performance within the department.
- Review losses for potential trends on a regular basis.
- Enforce all safety rules.
- Participate in facility and work site audits.
- Participate and support all accident investigation activities.
- Review accident reports and recommend corrective actions.

Supervisor Safety Responsibilities

Safety is as much a part of the supervisor's responsibility as is getting the job done efficiently. In addition to the aforementioned responsibilities of managers, the important safety responsibilities of each and every supervisor also include:

- Familiarize yourself with and enforce the safety rules and regulations that have been established by applicable local, state, and federal organizations. These regulations are intended to set minimum standards for safety and the contents of the regulations should be enforced as minimum safety requirements for all activities on our work sites or in our facilities.

- Correct, or have corrected, all reported hazards. Operating under known hazardous conditions will not be tolerated.

- Do not permit new or inexperienced employees to work with power tools, machinery or complex equipment without proper instruction and training.

- Give adequate instructions. Do not assume that an employee knows how to do a job unless you personally have knowledge that the person can perform that task correctly.

- Ensure tools, equipment, and machinery being used in the workplace are in proper working condition.

- Ensure that proper personal protective equipment is available and utilized by employees when necessary or required.

- Always set a good example in safety, such as wearing the proper personal protective equipment and following policies and procedures.

- Consistently enforce the requirements of the organization's safety program and any associated rules or policies.

- Ensure that all employees have access to a copy of the organization's safety program.

- Encourage safety suggestions from employees under your supervision.

- Obtain prompt first aid for injured employees.

- Participate in accident or incident investigations involving your employees.

- Conduct audits of all work areas and facilities on a regular basis in an effort to improve housekeeping, eliminate unsafe conditions and encourage safe work practices.

Employee Safety Responsibilities

Employees bear a certain amount of responsibility in any safety program. You must be aware that your actions, knowledge, mental state, physical condition, and attitude directly affect the safety of yourself and your fellow employees. All employees will:

- Know your job, follow instructions, and think before you act

- Use appropriate personal protective equipment as dictated by the job and by policy.

- Work according to written safety practices as trained, posted, instructed, or discussed.

- Refrain from any unsafe act that might endanger yourself or your fellow workers.

- Never take short-cuts and will use all safety devices provided for your protection.

- Report any unsafe situation or act to your supervisor immediately.

- Assume responsibility for thoughtless or deliberate acts that may cause injury to yourself or your fellow workers.

- Never operate equipment that you are unfamiliar with or not trained to use. Also, equipment that is defective or in need of repair shall not be used and must be reported to your supervisor.

- Report all accidents/incidents to your supervisor as soon as they occur.

ACCIDENT/INCIDENT INVESTIGATION POLICY

It is the policy of the (ENTITY NAME) to investigate all work-related accidents, incidents, or 'near misses' that result in or could potentially have resulted in injury or property damage. As nearly all accidents and incidents have their own unique characteristics, only general rules and procedures can be outlined within this policy.

An ***accident*** is defined as "an undesirable or unfortunate happening that occurs unintentionally and usually results in harm, injury, damage, or loss". Examples of accidents include on-the-job injuries (regardless of severity) or vehicle collisions. An ***incident*** is defined as "an occurrence of seemingly minor importance". Examples of incidents include 'near misses' or events where injuries other accidents 'almost' occurred.

The standard (ENTITY NAME) *Accident/Incident Investigation Report* will be used for both initial and final investigations. The bottom of the report shall be marked to indicate whether it is an initial or final report using the check-box.

Roles and Responsibilities

- Employees must immediately report to their supervisor any on-the-job injury or illness they sustain, or suspect they have sustained, no matter how minor. They must also report any incidents that had the potential for injury to employees or third parties and any instances where property damage occurred.

- Supervisors shall first respond to the immediate medical needs of any injured persons. Following any necessary medical attention, they should begin reporting and investigative activities as described in this policy.

- Witnesses to the event that resulted in the accident or incident will provide statements about what they observed. Witnesses may also be asked to participate in the initial and/or final investigations.

- The (RESPONSIBLE PERSON) is responsible for receiving the initial reports of injury or property damage and forwarding them to the appropriate workers' compensation provider representatives in a timely manner.

- The (RESPONSIBLE PERSON) is also responsible for reviewing the initial accident/incident report and coordinating a final investigation, if necessary.

Investigation Procedures

The following procedures will be followed for any accident or incident as defined above.

- **Initial Notification**
  Employees are responsible for reporting all injuries, illnesses, or incidents as described earlier in this policy. Failure to report any injury or incident may be cause for disciplinary action. In the event of a serious or disabling injury, fellow employees must assume this reporting responsibility.

- **Initial Treatment**
  Any injury should be treated by the supervisor or other available personnel in accordance with the individual abilities of the employee and the severity of the injury. Medical treatment is mandatory for any of the following:

  - Severe chest pains
  - Traumatic injuries
  - Loss of consciousness or severe dizziness

  The first responders to any incident scene will be responsible for securing the area to prevent further damage or injury and also protecting the integrity of the incident scene until an investigation can be initiated.

  Any incident involving possible exposures to blood-borne pathogens, communicable diseases, or any other contagious substance shall be handled in accordance with those specific procedures regarding that particular incident.

  Injured employees are to be transported for medical treatment either by ambulance or another person, depending on the severity of the injury. Injured employees should never be allowed to transport themselves for initial medical treatment.

  If an employee refuses medical treatment for an on-the-job injury, the report should be completed and the employee's signature used to document the employee's refusal.

- **Further Notification**
  The (RESPONSIBLE PERSON) must be contacted following the occurrence of an accident or incident to ensure an initial report is completed and forwarded to the appropriate insurance provider representative. A copy of the report should also be sent to (RESPONSIBLE PERSON).

- **Drug/Alcohol Policy Requirements**
  (INSERT ENTITY'S POST-ACCIDENT DRUG & ALCOHOL POLICY HERE, IF APPLICABLE)

- **Initial Investigation**
  The supervisor shall immediately protect all other persons from the hazards that caused the initial problem and also preserve the area where the incident occurred for investigation. After the injured persons have been attended to and the site is secure, the supervisor should begin the initial investigation. The initial investigation should include:

  - Statement from the injured employee
  - Statements from witnesses
  - Photographs or sketches of area, if deemed necessary
  - Completion of the Accident/Incident Report in its entirety
  - Immediate corrective actions to prevent any possible reoccurrence.

- **Initial Report**
  An initial report will be completed for all accidents and incidents with twenty-four (24) hours of occurrence. The supervisor of the employee will complete the initial investigation and report as soon as possible after the occurrence.

The initial report will be submitted to (RESPONSIBLE PERSON) during normal work hours and (RESPONSIBLE PERSON) during all other times.

- **Final Investigation**
  Within seventy-two (72) hours of the original accident or incident, a final investigation will be completed, as necessary. Attendance at the investigation meeting will, as a minimum, include the following personnel: injured employee, if possible; injured employee's supervisor; witnesses; safety officer; risk manager; (INSERT OTHERS).

  The final investigation report should include:

  - Description of the event by the involved persons
  - Accounts of witnesses
  - Input from supervision
  - Listing of causes
  - Development of corrective actions

  Basically, the investigation must answer the following questions:

  - Who was injured or what was damaged?
  - When did the accident/incident occur?
  - Where did the accident/incident occur?
  - Why did the accident/incident occur?
  - What caused the accident/incident to occur?
  - How can it be prevented from occurring again?

The (RESPONSIBLE PERSON) will take responsibility for issuing the final report. The final investigation report will reflect all changes from the initial report and also must include:

- Finalized corrective actions
- Assigned completion dates for all corrective actions
- Assigned person(s) to complete the corrective actions. The persons assigned the corrective actions shall also be required to sign the final report when the corrective actions have been completed.

Copies of the final investigation report should be supplied to:

- Human Resources Manager
- Risk Manager/Safety Representative
- Department Manager

SAFETY EDUCATION & TRAINING POLICY

Safety Meetings & Training

Safety meetings are an effective way to encourage, educate, and train employees on safe work practices and will be held on a regular basis, based upon the specific department or operation. The (RESPONSIBLE PERSON) will provide information to be used in the meetings and will attend and participate in the meetings when possible. Safety meetings will normally be conducted by (RESPONSIBLE PERSON). Discussions of safety rules, possible hazards to be encountered in future job duties, or changes in procedures or equipment are some topics that should be covered on a regular basis. Topics discussed during safety meetings should pertain to the specific hazards associated with the employee's assigned job or task as well as general hazards associated with the workplace. All employee safety meetings and training will be documented according to the *Recordkeeping Policy*.

Employees who do not attend regularly scheduled safety meetings or training will be identified and scheduled to attend makeup training at the supervisor's discretion. Documentation of makeup training will be made as well.

Special Training

Additional or specialized safety training will be conducted for the following areas as the need arises:

- New equipment purchases
- New/changes in operations
- Identified areas of increased accidents
- Newly identified areas of exposure

New Employee Safety Orientation

The (RESPONSIBLE PERSON) will provide an orientation to all new employees to address the hazards associated with their position and will include a review of all safety rules, policies/procedures, and equipment that are applicable to the employee's area of assignment. New employees will be given an opportunity to ask relevant questions that may pertain to their assigned duties and safety. Documentation of the new employee safety orientation will be complete using the appropriate form and maintained in accordance with the *Recordkeeping Policy*.

New employees' work activities will be limited to (DEFINE TASKS) until the safety orientation is completed.

Documentation of Safety Meetings & Training

Documentation from any formal meeting, 'tailgate' meeting, or training courses attended by employees, supervisors, or managers will also be maintained for recordkeeping purposes using the appropriate form. Documentation should include the topic(s) covered, presenter information, and copies of any materials or handouts used during the training. The documentation associated with safety meetings and training will be kept in accordance with the *Recordkeeping Policy*.

SAFETY AUDIT & INSPECTION POLICY

In an effort to detect unsafe acts or unsafe conditions and initiate necessary corrective actions as soon as possible, regularly scheduled, documented inspections will be conducted for all (ENTITY NAME) facilities, vehicles, and equipment. The (RESPONSIBLE PERSON) will coordinate the completion of these inspections with the appropriate departmental personnel. Employees may be requested or required to assist in conducting the inspections.

Employees are responsible to continually inspect their work areas, vehicles, and equipment for possible hazards. Potential hazards should be immediately reported to supervisory personnel and may also be documented using the *Employee Report of Unsafe Act or Condition*. Required corrective actions should be documented on the forms for any identified deficiencies. Follow-up after corrective actions have been taken should also be documented on the inspection forms.

The appropriate (ENTITY NAME) inspection forms will be completed for each facility, vehicle, or piece of equipment. Employees assigned to drive the (ENTITY NAME) vehicles and/or machinery and equipment will conduct inspections and complete the applicable forms each day, prior to using the vehicle or equipment. All completed inspection reports will be maintained according to the *Recordkeeping Policy*.

RECORDKEEPING POLICY

It is the policy of the (ENTITY NAME) to maintain records of all safety and accident documents for a minimum of (ENTER NUMBER) years, unless otherwise specified. The (RESPONSIBLE PERSON) will perform annual checks of the records for inclusion of all required safety documentation as described in this policy and will ensure that records are maintained by the (ENTITY NAME) and will include, but are limited to:.

Injury Loss Records

- A copy of each TDI Division of Workers' Compensation Form DWC-1 (Employer's First Report of Injury).

- A copy of each TDI Division of Workers' Compensation Form DWC-6 (Supplemental Report of Occupational Injury or Illness).

- An injury log will be maintained to track all work-related injuries and illness reported by employees. The log will be updated and kept current by the (RESPONSIBLE PERSON).

- Claim and loss information from TML-IRP for all lines of coverage shall be maintained as well. This information will be used for various means of trend analysis.

Accident Investigation Reports

The (RESPONSIBLE PERSON) will ensure that an accident investigation report is completed for each reported accident or incident. A copy of all completed accident investigation reports will be maintained at the (LOCATION OF FILES). Only (ENTITY NAME) approved accident investigation report forms shall be used to document accident investigation data. See *Accident/Incident Investigation Policy* for specific details.

Inspection Reports

All vehicle, equipment, and facility inspection reports will be maintained at the (LOCATION OF FILES). The (RESPONSIBLE PERSON) will ensure that all required inspection reports are completed in a timely manner. Only (ENTITY NAME) approved inspection forms will be used. Follow-up to necessary corrective actions, including date, tasks, or jobs completed, should be documented as well.

Safety Meetings & Training Records

Documentation of monthly safety meetings and other training records will be maintained at the (LOCATION OF FILES). Only (ENTITY NAME) approved safety meeting forms shall be used to document the activities. When safety meetings are used as training activities, appropriate notations should be made on the form. The (RESPONSIBLE PERSON) is responsible for returning a copy of the appropriate form(s) to the (LOCATION OF FILES).

Accident/Incident Analysis

A file containing Accident/Incident Analysis reports, using the (ENTITY NAME) form, will be maintained in the (LOCATION OF FILES).

Reviews and Revisions of the Safety & Accident Prevention Program

A file containing reviews and revisions of the program, using the (ENTITY NAME) form will be maintained at the (LOCATION OF FILES).

ACCIDENT/INCIDENT ANALYSIS POLICY

At least once each year, the (RESPONSIBLE PERSON) will review all reported injuries, incidents, near misses, property damage, accident investigations, unsafe condition reports, and inspection reports that have been completed over the past twelve months to determine if injury or hazard trends are developing. Where potential trends are identified, the cause(s) will be determined to assist in the implementation of corrective actions, as needed, to eliminate or reduce hazardous exposures to employees. The (RESPONSIBLE PERSON) will follow up on the effectiveness of the corrective actions to ensure the situations have been mitigated, abated, or are in the process of being corrected.

Items to be addressed during the analysis include progress on previous corrective actions, trends, recently identified exposures, and safety meeting and inspection reports.

The *Accident/Incident Analysis* form shall be used to document this analysis. If there were no reported injuries or incidents during the analysis period, the attached form should still be completed as documentation of the activity.

SAFETY PROGRAM REVIEW & REVISION POLICY

The (RESPONSIBLE PERSON) will, at least annually, review the entire Accident Prevention & Safety Program for revisions to help address any potential new exposures within current operations. Areas that should be evaluated include, but are not limited to: operations added, equipment added/changed, changes in environmental conditions, adequacy of personal protective equipment, and employee training. In addition, procedures should be reviewed to make sure they are still applicable.

Additional review(s) will be conducted whenever changes are needed to the Accident Prevention & Safety Program prior to the annual review of the program. Upon changes in the Accident Prevention & Safety Program, all employees will be informed of these changes and provided proper training as needed. (RESPONSIBLE PERSON) will ensure that changes or revisions are added to the program in timely manner.

This review will be documented using the appropriate form and maintained according to the *Recordkeeping Policy*.

SECTION 2 - GENERAL ADMINISTRATIVE POLICIES/PROCEDURES & HIGH-RISK ACTIVITY SAFETY POLICIES

RETURN-TO-WORK (MODIFIED DUTY) PROGRAM

Overview

The (ENTITY NAME) has implemented a program for employees who are injured on the job. This program will provide the injured employee with immediate and appropriate medical attention and will attempt to provide opportunities to return the employee to safe, productive work as soon as medically reasonable.

The ultimate goal is to return qualified employees to their original jobs. The *Return-to-Work Program* will attempt to provide alternative productive work that meets the injured employee's capabilities.

These procedures are developed to meet the Texas workers' compensation laws and rules, Americans with Disabilities Act, and Family Medical Leave Act that support and encourage return to work programs.

The support and participation of management and all employees are essential for the success of the (ENTITY NAME) Return-to-Work program.

Procedures

The (ENTITY NAME) has a return-to-work program applicable to all full-time employees. The return-to-work coordinator is (RESPONSIBLE PERSON).

An employee who is injured must immediately report the injury or incident to a supervisor or an appropriate person in management.

If medical attention is required, the injured employee will be accompanied by his/her supervisor or designee to receive medical services.

Following an injury, employees should:

- Report all injuries immediately, no matter how minor
- Complete an accident report
- Provide correct information immediately so that the DWC-1 form may be completed and filed within 24 hours
- Verify that we have your current phone number and address
- Inform the physician that alternative productive work, with or without restrictions, is available
- Contact your supervisor/manager at least weekly to discuss your restrictions and other return-to-work opportunities
- Report to work on the next scheduled shift after you have been released by the doctor (either regular duties, modified duties, or reduced time)
- Perform only the jobs described by the doctor and manager, according to the doctor's restrictions

The (RESPONSIBLE PERSON) will complete an incident report for every reported incident whether or not medical attention is needed.

After medical treatment, if the employee is unable to return to work the next day, the employee should request a written statement of any restrictions he/she may have in performing their tasks and an expected return-to-work date from the physician. The employee is required to provide

this information to his or her supervisor as soon as possible, preferably on the day of the injury and at least weekly until the employee returns to work. The supervisor should deliver the physician's information to the return to work coordinator as soon as possible, at least within the workday it is received from the employee.

For injuries requiring time away from work, the return-to-work coordinator will send a return-to-work package to the physician. This package contains a description of the entity's policies on return-to-work, the employee's current job description, a list of alternative duty assignments and an employee physical evaluation form (DWC-73). The physician will be asked to complete the employee physical evaluation form and return it to the return-to-work coordinator and workers' compensation carrier by the end of the second working day following the date of the examination.

If the physician indicates that the employee is not able to return to their regular duties, even with minor modifications, but is physically able to perform alternative assignments in their own or another department, the employee will be required to report to that position. The priority will be to return employees to their own departments if there is approved alternative work available.

Employees participating in return-to-work through either a modified, regular position or an alternative position may not work overtime hours or at any employment outside of the entity without approval from the (RESPONSIBLE PERSON) or until returned to their regular position.

Upon receipt of notification from the physician that the employee can return-to-work to either their job with modifications or another assignment, the return-to-work coordinator will notify the employee in writing with a bona fide offer of employment stating the specifics of the assignment. The offer should stipulate the pay to be received by the employee, shift/schedule of the position and any other pertinent information. If the offer is made at a lower pay rate, the worker's compensation carrier will make up 70% of the difference of the employee's former pay. This document will be sent certified mail with return receipt requested.

The return-to-work coordinator will also contact the employee with the information that they have been approved for return-to-work by their physician and that a position exists effective on a specific date with details to follow by mail.

The employee, the employee's supervisor and the return-to-work coordinator will meet at the prescribed work site to discuss details of the alternative position. These may include: any physical limitations of the employee, the maximum length of and periodic review of the alternative assignment and any other issues any of the parties present may have.

The injured employee will be in communication with the physician and return-to-work coordinator until:

- the alternative assignment ends;
- the physician temporarily prohibits the employee from performing the alternative assignment;
- there is no longer any useful task available within the entity that the employee can perform;
- the employee is able to return to his/her regular, pre-injury duties;
- the employee is terminated.

The return-to-work coordinator will continually review the return-to-work program and make such changes that enhance its effectiveness.

Employee Responsibilities
All employees are responsible for working safely and following all safety rules.

If you are injured on the job, you must report the injury to your supervisor that business day, or within (ENTER NUMBER) hours if before 8 AM or after 5 PM, Monday-Friday. Go to the doctor for treatment immediately if needed.

It is essential that contact be maintained in order to promote your return to work. We care about your health, well being and future with (ENTITY NAME).

Failure to follow these procedures will result in disciplinary action according to the policies and procedures in the employee manual.

Supervisor/Management Responsibilities
Management is responsible for providing a smooth transition back to work for any employee who has experienced a work-related injury or illness.

Employees who are off work due to a work-related injury or illness will be encouraged to return to work as soon as medically reasonable. We will provide modified work tasks as necessary and available.

Employees and supervisors will work together to set guidelines for modified duty according to the doctor's restrictions.

HAZARD COMMUNICATION PROGRAM

General Information

The Texas Hazard Communication Act (THCA), codified as Chapter 502 of the Texas Health and Safety Code (HSC), requires all public employers in Texas to provide their employees with information regarding hazardous chemicals to which employees may be exposed in their workplace. In order to comply with Section 502.009(b) of the THCA and Section 295.7(a) of the THCA Rules (Title 25 of the Texas Administrative Code (TAC), Section 295.1-295.12), the following written Hazard Communication Program has been established for (ENTITY NAME).

The master copy of the written hazard communication program will be maintained in (LOCATION). Copies of the written program will be modified as needed for each separate workplace where hazardous chemicals are used or stored and a copy maintained at each workplace. The written program will be available to all employees and their representatives upon request.

To facilitate administration of and compliance with this Program, the following levels of responsibility have been established:

- The (RESPONSIBLE PERSON) will have overall responsibility for administering and maintaining this program and ensuring that it meets all requirements of the THCA.
- Supervisors will be responsible for (ENTER RESPONSIBILITIES HERE)
- Individual employees will be responsible for (ENTER RESPONSIBILITIES HERE)

NOTE:
This policy was developed using the Model Written Hazard Communication program prepared by the Hazard Communication Branch of the Texas Department of State Health Services. For additional guidance, please contact the Hazard Communication Branch at 800-452-2791 (toll free) or 512-834-6603. The Branch may also be reached through its web site at www.dshs.state.tx.us.

Exemptions
The following chemicals are exempt from the requirements of the THCA and are outside the scope of this written program:

- Hazardous waste that is subject to regulation by the Texas Commission on Environmental Quality and/or the U.S. Environmental Protection Agency.
- A chemical in a laboratory under the direct supervision or guidance of a “technically qualified individual” if:
    - Labels on incoming containers of chemicals are not removed or defaced,
    - This employer complies with Sections 502.006 and 502.009 of the THCA with respect to laboratory employees; and
    - The laboratory is not used primarily to produce hazardous chemicals in bulk for commercial purposes.
- Tobacco or tobacco products.
- Wood or wood products.

- Articles formed to a specific shape or design during manufacture and that do not release or otherwise result in exposure to a hazardous chemical under normal conditions of use.

- Food, drugs, cosmetics or alcoholic beverages.

- Consumer products or hazardous substances used in the workplace in the same manner as normal consumer use and if the use results in a duration and frequency of exposure that is not greater than exposures experienced by a consumer.

- Radioactive waste.

Workplace Chemical List

- The (ENTITY NAME) will develop and maintain a list of hazardous chemicals normally present in the workplace in excess of 55 gallons or 500 pounds. This Workplace Chemical List will be developed for each workplace where such quantities of hazardous chemicals are used or stored and will be available for review by employees and their designated representatives.

- The (RESPONSIBLE PERSON) will be responsible for reviewing and updating the Workplace Chemical List for the (ENTITY NAME) as necessary, but at least by December 31 of each year.

- The Workplace Chemical List will be maintained for at least 30 years.

- Further information on each noted chemical can be obtained by reviewing Safety Data Sheets (SDSs) located in each workplace where these hazardous chemicals are used or stored.

Safety Data Sheets (NEW in 2015: Globally Harmonized System: Safety Data Sheets)

- The (ENTITY NAME or SPECIFIC WORK SITE) will maintain a current and appropriate Safety Data Sheet (SDS) for each hazardous chemical purchased.

- The (RESPONSIBLE PERSON) will be responsible for the SDS system for (ENTITY NAME) and will ensure that:

    - Incoming SDSs are reviewed for new and significant health/safety information and that any new information is passed on to the affected employees.

    - Hazardous chemicals received without an SDS are withheld from use until a current SDS is obtained.

    - Missing SDSs are requested from an appropriate source (e.g., chemical manufacturer, distributor, or electronic database) within 30 days from receipt of the hazardous chemical.

    - Affected employees are provided a description of any alternative system (such as electronic databases) being used in lieu of actual SDSs.

    - Emergency responders are provided SDSs as soon as practical upon request.

- SDS files for (ENTITY NAME or SPECIFIC WORK SITE) will be kept in (LOCATION).

- SDSs will be readily available for review by employees or their designated representatives upon request.

Chemical Container Labels

- All containers of hazardous chemicals used or stored by (member and/or specific workplace) will be appropriately labeled.

- The (RESPONSIBLE PERSON) will be responsible for the hazardous chemical labeling system and will verify that:

    - All **primary** containers of hazardous chemicals are clearly labeled to include:
        - The identity of the chemical as it appears on the SDS.
        - The appropriate hazard warnings.
        - The name and address of the manufacturer.

    - All **secondary** containers of hazardous chemicals are clearly labeled to include:
        - The identity of the chemical as it appears on the SDS.
        - The appropriate hazard warnings.

    - A description of alternative labeling systems, if used, is provided to employees. Examples of alternative labeling systems are the National Fire Association (NFPA) 704m Standard and the Hazardous Materials Information Systems (HMIS) Standard.

    - Every effort will be made to label pipes that carry materials that could be hazardous. Labeling can be specific markings identifying the contents of the pipes. If hazardous chemicals run through the pipes, the potential hazards and necessary safety precautions relative to the chemicals must be obtained and given to the employees in the area.

    - Any empty container being considered for re-use must be fully cleaned and all labels removed prior to its use.

- The (ENTITY NAME) will rely on the chemical manufacturers or distributors to provide labels which meet the above requirements for primary containers of all hazardous chemicals purchased, and will re-label containers only when the label is illegible or otherwise does not meet the above requirements.

Employee Training Program

- The (ENTITY NAME) will provide an education and training program to all employees who routinely use or handle hazardous chemicals in their workplace.

- The (RESPONSIBLE PERSON) will be responsible for the employee training program and will ensure that:

    - Appropriate training is provided to all covered employees and includes:
        - The use of information provided on SDSs and chemical container labels.
        - The location of hazardous chemicals present in the employees' work areas.
        - The physical and health effects of exposure.
        - Proper use of personal protective equipment.

        - Safe handling of hazardous chemicals.
        - First aid treatment for exposure to hazardous chemicals.
        - Safety instructions on clean up and disposal of hazardous chemicals.

    - Required training records are maintained and include:
        - The date of the training session.
        - A legible list of all employees attending the training session.
        - The subjects covered.
        - The name of the instructors.

    - All covered employees are identified and incorporated into the training program.

    - Employees are provided information concerning the hazardous chemicals to which they may be exposed during the performance of non-routine tasks.

    - New employees are trained prior to their being required to use or handle a hazardous chemical.

    - The need and frequency for periodic/refresher training is assessed. Employees subject to these training requirements will sign an attendance roster for each training session attended, verifying that they received and understood the information.

Reporting Employee Deaths and Injuries

- The (ENTITY NAME) will notify the Texas Department of State Health Services, Hazard Communication branch, of any employee accident that involves a hazardous chemical exposure or asphyxiation, and that is fatal to one or more employees or results in the hospitalization of five or more employees.

- The (RESPONSIBLE PERSON) will be responsible for reporting all such accidents to the Texas Department of State Health Services, Hazard Communication Branch, within 48 hours after their occurrence. Notifications will be made either orally or in writing.

- Employees will be responsible for reporting all accidents involving a hazardous chemical to their supervisor.

- Supervisors will be responsible for reporting all accidents involving a hazardous chemical to the (RESPONSIBLE PERSON).

Posting Employee Notice

- The (ENTITY NAME) will post and maintain in all workplaces where hazardous chemicals are used or stored the most current version of the TDSHS Notice to Employees, informing employees of their rights under the THCA.

- The Notice shall be clearly posted and unobstructed at all locations in the workplace where notices are normally posted, and with at least one location in each workplace.

- Where necessary, a copy of the Notice, printed in Spanish, will be posted together with the English version of the Notice.

- Additional copies of the Notice, both in English and Spanish, are available from the Hazard Communication Branch of the TDSHS.

Personal Protective Equipment

- The (ENTITY NAME) will provide appropriate personal protective equipment (PPE) to all employees who use or handle hazardous chemicals.

- The (RESPONSIBLE PERSON) will assume overall responsibility for the PPE program and will ensure that appropriate equipment and training are provided, to include:

    - Proper selection of PPE based on:
        - Routes of entry.
        - Permeability of PPE material.
        - Duties being performed by the employee.
        - Hazardous chemicals present.

    - Proper fit and functionality of PPE as described by the manufacturer's specifications.

    - Appropriate maintenance and storage of PPE.

Maintaining Employee Rights

- The (ENTITY NAME) shall not discipline, harass, or discriminate against any employee for filing complaints, assisting inspectors of the Texas Department of State Health Services, participating in proceedings related to the Texas Hazard Communication Act, or exercising any rights under the Act.

- Employees cannot waive their rights under the Texas Hazard Communication Act. A request or requirement for such a waiver by an employer violates the Act.

Informing Contractors

- Before a contractor commences work in a (ENTITY NAME) workplace, the (RESPONSIBLE PERSON) who controls the work area will be responsible for:

    - Informing the contractor of its rights under the Act.

    - Providing a copy of the Workplace Chemical List.

    - Providing copies of all SDSs for the hazardous chemicals that they may be exposed to in the workplace.

    - Having the contractor provide SDSs for any hazardous chemicals they will be bringing into the (ENTITY NAME) workplace to which the (ENTITY NAME) employees will have an exposure.

DISCIPLINARY POLICY FOR VIOLATIONS OF SAFETY RULES/PROCEDURES

Safety Reprimands
Should employees be observed not following documented safety rules/procedures, the *Employee Reprimand Report* shall be used to document the unsafe actions. Supervisors should make every effort to ensure all employees are following safe work practices, policies, and procedures.

The (ENTITY NAME) has developed a progressive disciplinary policy that applies to the safety and accident prevention program of the (ENTITY NAME). The disciplinary policy is a tool to ensure enforcement of the rules and procedures for a safe and healthful working environment and applies to all employees of (ENTITY NAME).

Level 1 - Verbal Warnings
Supervisors may issue verbal warnings to employees that commit minor infractions or violations of the safety rules or safe work practices. Continued violations or verbal warnings will lead to more stringent action.

Level 2 – Written Warnings
Supervisors may issue written warnings for the following:

- Repeated minor violations of safety rules or procedures.
- Single serious violations of a rule or procedure that could have potentially resulted in injury to themselves or another employee or could have caused property damage.
- Activities that could potentially result in injury or property damage.

Level 3 - Disciplinary Leave
Supervisors may recommend, and management may institute, disciplinary leave for the above reasons as well as the following:

- A single serious violation of a rule or procedure that results in injury to an employee or property damage.
- Repeated violations or con-conformance to safety rules/procedures.

Level 4 - Termination
Supervisors may recommend and management may concur in the termination of any employee for repeated serious violations of the above circumstances.

Documentation
The (RESPONSIBLE PERSON) will maintain records of disciplinary action. Violations of (ENTITY NAME) rules and/or safety rules, regulations, or procedures will be documented by filling out an *Employee Reprimand Report*. The report will state the type of violation and corrective action(s) taken. The employees must read and sign the report acknowledging their understanding of the seriousness of the violation(s).

SAFETY COMMITTEE DEVELOPMENT

Safety Committee Organization

A safety committee has been established for the (ENTITY NAME). The purpose of the committee is to recommend improvements to our workplace safety and accident prevention program and to help in the identification of necessary corrective measures to eliminate or control recognized safety and health hazards and exposures. The safety committee will consist of the following supervisory and non-supervisory members of our organization.

	NAME	DEPARTMENT
Safety Program Coordinator		
Supervisory/Management Members		
Non-Supervisory/Management Members		

Roles and Responsibilities of the Safety Committee

The safety committee will continuously assist in evaluating the effectiveness of control measures used to protect employees from safety and health hazards in the workplace. The committee will also make recommendations as to any adjustments necessary to improve any components of the safety program.

The safety committee will be responsible for assisting management in reviewing and updating workplace safety rules based on accident investigation findings, inspection findings, employee reports of unsafe acts or conditions, and employee suggestions/complaints. These reviews will be conducted regularly during committee meetings and will focus on hazard/injury analysis and possible developing trends. Resources used during these analyses will include:

- TDI-DWC-1 Forms
- Accident Investigation Reports
- Injury Log
- TML-IRP Loss History Reports
- Other Workers' Compensation Loss Reports

The Chairperson of the safety committee will maintain a copy of these records for reference as needed and will provide a written notification of any identified trends to (RESPONSIBLE PERSON) as necessary, including supervisors, department heads, and executive management personnel.

The safety committee will assist management in continually evaluating employee accident prevention programs in an effort to promote safety awareness and employee participation in the safety program. This evaluation will involve conducting periodic safety inspections, observing work practices, reviewing accident causes, and suggesting recommendations for corrective

measures. Responsibilities may also include updating or rewriting of policies or procedures as evaluations identify possible deficiencies.

Safety committee members will regularly participate in safety training activities and will also be responsible for assisting management in monitoring the effectiveness of workplace safety education and training sessions. Members of the committee will participate in the development of improvements for identified deficiencies in the education and training programs.

Meetings

Safety committee meetings will be held at least (ENTER FREQUENCY) and more often as necessary. A Secretary will be elected or appointed by the committee and will be responsible for recording the minutes and proceedings of each meeting. A copy of the finalized minutes will be forwarded to each member of the committee and may also be posted in the workplace for other employees to review. Minutes from the most recent meeting should be reviewed at the beginning of each subsequent meeting for any necessary updates or changes.

NOTE:

Committee membership will vary depending on the size of the organization. Ideally, committee membership is representative of all departments within the organization. The group should be small enough to function smoothly, but large enough to foster communication between work groups. For very small organizations, as few as 3 persons may make up the committee, but larger organizations will require more involvement. Most committees will function best with no more than 10-12 members.

Members of the Safety Committee should be enlisted through a volunteer process or through election by co-workers. This process will help ensure that members are interested in achieving results and are dedicated to creating and maintaining a safe workplace.

VEHICLE OPERATOR STANDARDS

Policy, Purpose, and Scope
All employees authorized to operate (ENTITY NAME) vehicles and motorized equipment, or who operate personal vehicles on (ENTITY NAME)-related business, shall be subject to the standards established in this policy.

This policy establishes minimum standards for the qualification of employees and applicants to operate (ENTITY NAME) vehicles and motorized equipment.

This policy shall apply to:

- Employees driving (ENTITY NAME) owned, leased or rented vehicles or motorized equipment.

- Employees receiving a monthly car allowance, or who use personal vehicles for (ENTITY NAME) related business.

- Applicants for positions that require the operation of (ENTITY NAME) vehicles or equipment.

Definitions
(ENTITY NAME) Vehicles – any passenger car, pickup, truck or other similar vehicle that is owned, leased, rented, or otherwise under the care, custody, or control of the (ENTITY NAME). A (ENTITY NAME) vehicle shall also include vehicles driven by employees receiving a car allowance and personal vehicles.

Motorized Equipment – this category includes, but it not limited to, backhoes, dozers, mower-tractors, loaders, graders, and other similar equipment.

Preventable Accident – any accident involving a (ENTITY NAME) vehicle or piece of motorized equipment that results in property damage and/or personal injury in which the driver in question failed to exercise every reasonable precaution to prevent the accident. The preventability of an accident shall be determined from the investigative results of the appropriate law enforcement agency.

Personal Vehicles – privately owned vehicles used to conduct (ENTITY NAME) business, and for the use of which the driver is eligible to claim mileage reimbursement under federal law.

Driving Records – the complete driving history of an employee, as can be discerned from any official records, including Texas Department of Public Safety Driver Record Information Reports.

Responsibilities
Employees who drive (ENTITY NAME) vehicles or operate motorized equipment in the course and scope of their employment shall be required to meet the following minimum conditions of eligibility for driving/operating privileges:

- Have reached the age of (ENTER AGE) years to operate (ENTITY NAME) vehicles or motorized equipment.

- Be physically qualified to hold a driver's license and to safely operate a (ENTITY NAME) vehicle or motorized equipment.

- Have current valid Texas driver's license in the appropriate class as established on the official description for the position.

- Wear seat belts and other relevant safety equipment when operating (ENTITY NAME) vehicles or motorized equipment when appropriate.

- Observe all (ENTITY NAME) vehicle and traffic related policies.

- Observe all laws and ordinances relating to the operation of (ENTITY NAME) vehicles or motorized equipment.

- Be responsible for the proper care and use of vehicles or motorized equipment. This includes maintaining (ENTITY NAME) vehicle/motorized equipment interiors and exteriors, regularly servicing these items and reporting maintenance needs to the supervisor, and operating all (ENTITY NAME) vehicles/motorized equipment in a manner that conserves fuel and reduces depreciation.

- Employees receiving car allowance shall fulfill all current legal regulations such as insurance, inspection, and registration.

Operator Standards for Applicants for Employment and Current Employees

Applicants for positions with the (ENTITY NAME) as well as employees currently in a position with the (ENTITY NAME) requiring the operation of (ENTITY NAME) vehicles or motorized equipment ***shall not*** be eligible for driving/operating privileges if the total points assigned to their driving record is 10 or more within a three year period. Points are assigned based on the system described below:

VIOLATION	POINTS ASSIGNED
License suspension, revocation	10
Driving while intoxicated or under the influence of narcotics	10
Serious violations, including reckless driving, endangering the lives of others, racing, etc.	10
Any speeding violation	3
Any standard moving violation, including careless driving, stop sign, failure to signal, following too close, etc.	2
Any chargeable bodily injury accident	3
Any chargeable property damage accident	3

Procedures

The following procedures shall be observed under this policy:

- Employees operating (ENTITY NAME) vehicles or motorized equipment must report to their supervisors any accident involving said vehicles as soon as possible and no later than twenty-four (24) hours of the occurrence.

- Employees who are in jobs that require the driving/operating of (ENTITY NAME) vehicles or motorized equipment shall report any driver's license suspensions to their immediate supervisor within twenty-four (24) of the suspension.

- Failure to report license suspensions, failure to maintain the required driver's license, or failure to meet minimum driving record criteria will be sufficient grounds for removal from driving privileges and may subject the employee to disciplinary action, up to and including termination.

- Each (DESIGNATE MONTH), the (DESIGNATE DEPARTMENT) will compile a list of all personnel who have driving or motorized equipment operation responsibilities. This list shall include the employee's name, date of birth, and current driver's license number and will be used to conduct checks on driving records through a motor vehicle record check. The motor vehicle record reflects the past three years of a driving record. The (RESPONSIBLE PERSON) and appropriate department head will be notified of any employee whose driving record fails the criteria set forth in this policy.

- Employees who have been ruled ineligible for driving privileges may have their privileges reinstated provided the employee successfully completed a certified defensive driver training program approved by the (RESPONSIBLE PERSON) and submits evidence of satisfactory completion to the (RESPONSIBLE PERSON). The reinstatement privilege does not apply for violations including charges of driving while intoxicated or under the influence.

- An employee who has been ruled ineligible for driving privileges may use the defensive driving course option only once every three (3) years in order to have his/her eligibility status reinstated.

Employees who have been ruled ineligible to drive (ENTITY NAME) vehicles or equipment due to their driving record may, at the (ENTITY NAME) sole discretion, be:

- Assigned non-driving responsibilities within their current department, if available; or

- Transferred to another department and assigned non-driving responsibilities, if available; or

- Dismissed, if neither of the above alternatives can be achieved within twenty (20) working days. All non-driving responsibilities must have prior approval of the (RESPONSIBLE PERSON).

Employees who receive a car allowance and become ineligible for driving privileges shall have their car allowance revoked and shall not be permitted to drive on (ENTITY NAME) related business. Mileage reimbursement recipients who become ineligible for driving privileges shall be forbidden to drive their personal vehicles on (ENTITY NAME) related business.

RESPIRATORY PROTECTION PROGRAM

Overview

This sample program is provided only as a guide to assist employers and employees in developing a respiratory protection program. Employers should review the policy for particular requirements specific to their organization and make adjustments in order to develop an effective and comprehensive program. For additional information, please refer to 29 CFR 1910.134, OSHA's respiratory protection standard.

Even though public entities in the State of Texas do not fall under OSHA requirements, sections of the OSHA Standards should be reviewed for minimum industry standards.

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The sample program that follows contains information on a variety of subjects related to respiratory protection. Carefully evaluate each of these areas to determine the best fit for your individual organization or operation.

RESPIRATORY PROTECTION PROGRAM

Objective

The (ENTITY NAME) Respiratory Protection Program is designed to protect employees by establishing accepted practices for respirator use, providing guidelines for training and respirator selection, and explaining proper storage, use and care of respirators.

Assignment of Responsibility

- **Employer**
  (ENTITY NAME) is responsible for providing respirators to employees when they are necessary for health protection. (ENTITY NAME) will provide respirators that are applicable and suitable for the intended purpose at no charge to affected employees. Any expense associated with training, medical evaluations and respiratory protection equipment will be borne by the employer.

- **Program Administrator**
  The Program Administrator for (ENTITY NAME) is (RESPONSIBLE PERSON). The Program Administrator is responsible for administering the respiratory protection program. Duties of the program administrator include:

  - Identifying work areas, process or tasks that require workers to wear respirators.
  - Evaluating hazards.
  - Selecting respiratory protection options.
  - Monitoring respirator use to ensure that respirators are used in accordance with their specifications.
  - Arranging for and/or conducting training.
  - Ensuring proper storage and maintenance of respiratory protection equipment.
  - Providing respiratory fit testing
  - Maintaining records required by the program.
  - Evaluating the program.
  - Updating the written program as needed.

- **Supervisors**
  Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

  - Ensuring that employees under their supervision (including new hires) receive appropriate training, fit testing, and annual medical evaluation.
  - Ensuring the availability of appropriate respirators and accessories.
  - Being aware of tasks requiring the use of respiratory protection.
  - Enforcing the proper use of respiratory protection when necessary.
  - Ensuring that respirators are properly cleaned, maintained, and stored according to this program.
  - Ensuring that respirators fit well and do not cause discomfort.
  - Continually monitoring work areas and operations to identify respiratory hazards.
  - Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding this program.

- **Employees**
  Each employee is responsible for wearing his/her respirator when and where required and in the manner in which they are trained. Employees must also:

  - Care for and maintain their respirators as instructed, guard them against damage, and store them in a clean, sanitary location.
  - Inform their Supervisor if their respirator no longer fits well, and request a new one that fits properly.
  - Inform their Supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding this program.
  - Use the respiratory protection in accordance with the manufacturer's instructions and the training received.
  - Perform a positive and negative pressure test prior to using.

Applicability

This program applies to all employees who are required to wear respirators during normal work operations, as well as during some non-routine or emergency operations, such as a spill of a hazardous substance.

In addition, any employee who voluntarily wears a respirator when one is not required (i.e., in certain maintenance operations) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and will be provided with necessary training. Employees who voluntarily wear filtering face pieces (dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.

Program

- **Hazard Assessment and Respirator Selection**
  The Program Administrator will select respirators to be used on site, based on the hazards to which workers are exposed. The proper type of respirator for the specific hazard involved will be selected in accordance with the manufacturers' instructions. A list of employees and appropriate respiratory protection will be maintained by the Program Administrator.

  If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his/her Supervisor or the Program Administrator. The Program Administrator will evaluate the potential hazard, and arrange for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment to the Supervisor and affected employees. If it is determined that respiratory protection is necessary, all other elements of the respiratory protection program will be in effect for those tasks, and the respiratory program will be updated accordingly.

  The following respirators will be used for operations that contain atmospheres that are immediately dangerous to life and health (IDLH):

  - A full facepiece pressure demand self-contained breathing apparatus (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 shall be NIOSH certified for escape from the atmosphere in which they will be used.

- All oxygen deficient atmospheres shall be considered IDLH.

Respirators for atmospheres that are not IDLH shall be adequate to protect the health of an employee under routine and reasonably foreseeable emergency situations. The respirator selected shall be appropriate for the chemical state and physical form of the contaminant. Air-purifying respirators (canisters or cartridges) do not provide oxygen and should not be used in situations where the oxygen content in the air is questionable.

- **Training**
  The Program Administrator will provide training to respirator users and their supervisors on the contents of the Respiratory Protection Program and their responsibilities under it. All affected employees and their Supervisors will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to supervising employees that must wear respirators.

  The training course will cover the following topics:

  - The (ENTITY NAME) Respiratory Protection Program
  - Respiratory hazards encountered and their health affects
  - Proper selection and use of respirators
  - Limitations of respirators
  - Respirator donning and user seal (fit) checks
  - Fit testing
  - Emergency use procedures
  - Maintenance and storage; and
  - Medical signs and symptoms limiting the effective use of respirators.

  Employees will be retrained annually or as needed (e.g., if they change departments or work processes and need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the Program Administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

- **NIOSH Certification**
  All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while the respirator is in use.

- **Voluntary Respirator Use**
  The Program Administrator shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of medical evaluations.

  The Program Administrator will provide all employees who voluntarily choose to wear the above respirators with a copy of the Respiratory Protection Standard. Employees who choose to wear a half face piece Air Purifying Respirator (APR) must comply with the

procedures for Medical Evaluation, Respirator Use, Cleaning, Maintenance and Storage portions of this program.

- **Medical Evaluation**
  Employees who are either required to wear respirators, or who choose to wear a half face piece APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

  - The Program Administrator shall provide the evaluating physician with a copy of this Program, the list of hazardous substances by work area, and the following information about each employee requiring evaluation:

    - His or her work area or job title;
    - Proposed respirator type and weight;
    - Length of time required to wear respirator;
    - Expected physical work load (light, moderate, or heavy);
    - Potential temperature and humidity extremes; and
    - Any additional protective clothing required.

  - Positive pressure air purifying respirators will be provided to employees as required by medical necessity.

  - After an employee has received clearance to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:

    - The employee reports signs and/or symptoms related to their ability to use the respirator, such as shortness of breath, dizziness, chest pains or wheezing.
    - The evaluating physician or supervisor informs the Program Administrator that the employee needs to be reevaluated.
    - Information found during the implementation of this program, including observations made during the fit testing and program evaluation, indicates a need for reevaluation.
    - A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

  A list of employees currently included in medical surveillance is provided in Attachment A of this program.

  All examinations and questionnaires are to remain confidential between the employee and the physician. The Program Administrator will only retain the physician's written recommendations regarding each employee's ability to wear a respirator.

- **Fit Testing**
  Employees who are required to or who voluntarily wear half-face piece APRs will be fit tested:

  - Prior to being allowed to wear any respirator with a tight-fitting face piece;
  - Annually; or
  - When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc)

Employees will be fit tested with the make, model, and size of the respirator that they will actually wear. Employees will be provided with several models and sizes or respirators so that they may find an optimal fit. Fit testing of powered air purifying respirators will be conducted in the negative pressure mode.

The Program Administrator (or designated service provider) will conduct fit tests in accordance with recognized standards.

- **General Respirator Use Procedures**
  - Employees will use their respirators under conditions specified in this program, and in accordance with the training they received on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.

  - All employees shall conduct user seal checks each time they wear their respirators. Employees shall use the positive and negative pressure check.

    - Positive Pressure Test: This test is performed by closing off the exhalation valve with your hand. Breathe air into the mask. The face fit is satisfactory if some pressure can be built up inside the mask without any air leaking out between the mask and the fact of the wearer.

    - Negative Pressure Test: This test is performed by closing of the inlet openings of the cartridge with the palm of your hand. Some masks may require that the filter holder be removed to seal off the intake valve. Inhale gently so that a vacuum occurs within the face piece. Hold your breath for ten (10) seconds. If the vacuum remains, and no inward leakage is detected, the respirator is fit properly.

  - Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures that would prevent a proper seal. Employees are not permitted to wear headphones, jewelry, or other ties that may interfere with the seal between the face and the face piece.

  - Before and after each use of a respirator, an employee or immediate supervisor must make an inspection of tightness or connections and the condition of the face piece, headbands, valves, filter holders and filters. Questionable items must be addressed immediately by the supervisor and/or Program Administrator.

- **Air Quality**
  For supplied-air respirators, only Grade D breathing air shall be used in the cylinders. Cylinders and breathing air cascade systems used to supply breathing air will be tested and maintained in accordance with industry standards.

- **Change Schedules**
  Respirator cartridges shall be replaced as determined by the manufacturers' recommendations for use and environment. Cartridge changes may also be needed based upon:

  - Expiration date.
  - Contaminate odor that is detected by user.
  - Restriction of air flow that has occurred resulting in an increase in effort by the user to breathe normally.
  - A request by the employee.

- **Cleaning and Disinfecting**
  Respirators are to be regularly cleaned, disinfected, and maintained in a sanitary condition. Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary. Atmosphere-supplying and emergency use respirators are to be cleaned and disinfected after each use.

  Respirators will be cleaned using a mild detergent solution in warn water. Respirators will be thoroughly dried before being stored. Place respirators in a clean, dry plastic bag or other airtight container.

- **Maintenance**
  Respirators are to be properly maintained at all times in order to ensure that they function properly and protect employees adequately. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer.

  - All respirators shall be inspected routinely before and after each use.

  - Respirators kept for emergency use shall be inspected after each use, and at least monthly to assure that they are in satisfactory working order.

  - The Respirator Inspection Checklist will be used when inspecting respirators.

  - A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

  - Respirators shall not be placed in places such as lockers or toolboxes unless they are in carrying cartons.

  - Respirators maintained at stations and work areas for emergency use shall be stored in compartments built specifically for that purpose, be quickly accessible at all times, and be clearly marked.

- **Respirator Malfunctions and Defects**
  Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his/her supervisor. Supervisors will give all defective respirators to the Program Administrator.

- **Emergency Procedures**
  In emergency situations where an atmosphere exists in which the wearer of the respirator could be overcome by a toxic or oxygen-deficient atmosphere, the following procedure should be followed.

  - Employees must never enter a dangerous atmosphere without first obtaining the proper protective equipment and permission to enter from the Program Administrator or supervisor.

  - Employees must never enter a dangerous atmosphere without at least one additional person present. The additional person must remain in the safe atmosphere.

  - Communications (voice, visual, or signal line) must be maintained between both individuals or all present.

- Documentation and Recordkeeping
  - A written copy of this program shall be kept in the Program Administrator's office and made available to all employees who wish to review it.

  - Copies of training and fit-test records shall be maintained by the Program Administrator. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

  - For employees covered under the Respiratory Protection Program, the Program Administrator shall maintain copies of the physician's written recommendation regarding each employee's ability to wear a respirator. The completed medical questionnaires and evaluating physician's documented findings will remain confidential in the employee's medical records at the location of the evaluating physician's practice.

CONFINED SPACE ENTRY PROGRAM

Overview

This sample program is provided only as a guide to assist employers and employees in developing a confined space entry program. An employer should review the policy for particular requirements that are specific to their organization and make adjustments in order to have an effective, comprehensive program. For additional information, please refer to 29 CFR 1910.146, OSHA's permit-required confined spaces standard.

Even though public entities in the State of Texas do not fall under OSHA requirements, sections of the OSHA Standards should be reviewed for minimum industrial standards.

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CONFINED SPACE ENTRY PROGRAM

Objective

The purpose of (ENTITY NAME) Confined Space Entry Program is to set procedures that will ensure workers' safe entry into confined space and permit-required confined space to perform routine tasks associated with their employment. The confined space program is provided to protect authorized employees that will enter confined space and may be exposed to hazardous atmospheres, engulfed by materials, asphyxiation due to converging or sloping walls, or any other safety or health hazards.

Background

A confined space is defined as any location that is large enough that an employee can bodily enter and perform work, has limited openings for entry and egress, and is not intended for continuous employee occupancy. Examples of confined spaces include: manholes, lift stations, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. Entry into confined space without proper precautions could result in injury, impairment, or death due to:

- an atmosphere that is flammable or explosive;
- lack of sufficient oxygen to support life;
- contact with or inhalation of toxic materials; or
- general safety or work area hazards such as steam or high pressure materials.

Assignment of Responsibility

- **Employer**
  In administering this Confined Space Program, the (ENTITY NAME) will:

  - Monitor the effectiveness of the program.
  - Provide atmospheric testing and equipment as needed.
  - Provide personal protective equipment as needed.
  - Provide training to affected employees and supervisors.
  - Provide technical assistance as needed.
  - Review and update the program on at least an annual basis or as needed.

- **Program Manager**
  The (RESPONSIBLE PERSON) is responsible for managing the Confined Space program, and shall:

  - Ensure training of personnel is conducted and documented.
  - Coordinate with outside responders.
  - Ensure that equipment is in compliance with industry standards.
  - Ensure that the supervisors in charge of confined space work will:

    - Ensure requirements for entry have been completed before entry is authorized.
    - Ensure confined space monitoring is performed by personnel qualified and trained in confined space entry procedures.
    - Know the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure.
    - Fill out a permit.
    - Determine the entry requirements.

- Require a permit review and signature from the authorized Entry Supervisor.
- Notify all involved employees of the permit requirements.
- Make the permit available at the time of entry to all authorized entrants.
- Renew the permit (a new permit is required every shift).
- Determine the number of Attendants required to perform the work.
- Ensure all Attendant(s) know how to communicate with the entrants and how to obtain assistance.
- Post any required barriers and signs.
- Remain alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment).
- Change and reissue the permit, or issue a new permit as necessary.
- Ensure periodic atmospheric monitoring is done according to permit requirements.
- Ensure that personnel doing the work and all support personnel adhere to permit requirements.
- Ensure the permit is cancelled when the work is done.
- Ensure the confined space is safely closed and all workers are cleared from the area.

- **Entry Supervisors**
  Entry Supervisor(s) shall be qualified and authorized to approve confined space entry permits. The Entry Supervisor(s) shall be responsible for:

  - Determining if conditions are acceptable for entry.
  - Authorizing entry and overseeing entry operations.
  - Terminating entry procedures as required
  - Serving as an Attendant, as long as the person is trained and equipped appropriately for that role
  - Ensuring that measures are in place to keep unauthorized personnel clear of the area
  - Verifying that rescue services are available and that the means of summoning them are operable.

- **Attendants**
  Attendant(s) and shall be stationed outside of the confined workspace. The Attendant(s) shall:

  - Be knowledgeable of, and be able to recognize potential confined space hazards.
  - Maintain an accurate count of all persons in the confined space and ensure that entrants sign in and out.
  - Monitor surrounding activities to ensure the safety of personnel.
  - Maintain effective and continuous communication with personnel during confined space entry, work, and exit.
  - Order personnel to evacuate the confined space if he/she:

    - Observes a condition which is not allowed on the entry permit;
    - Notices the entrants acting strangely, possibly as a result of exposure to hazardous substances;
    - Notices a situation outside the confined space which could endanger personnel;
    - Notices a hazard within the confined space that has not been previously recognized or taken into consideration;
    - Must leave his/her workstation; or

        - Must focus attention on the rescue of personnel in some other confined space that he/she is monitoring.

    - Immediately summon rescue services if necessary.
    - Keep unauthorized persons out of the confined space, order them out, or notify authorized personnel of an unauthorized entry.
    - Do not perform duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

- **Entrants/Affected Employees**
  Employees who are granted permission to enter a confined space shall:

    - Read and observe the entry permit requirements.
    - Remain alert to the hazards that could be encountered while in the confined space.
    - Properly use the personal protective equipment that is required by the permit.
    - Immediately exit the confined space when:

        - They are ordered to do so by an authorized person;
        - They notice or recognize signs or symptoms of exposure.
        - A prohibited condition exists; or
        - The automatic alarm system sounds.

    - Alert Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist.

Training

(ENTITY NAME) shall provide training so that all employees whose work is regulated by this Confined Space Program acquire the understanding, knowledge, and skills necessary for the safe performance of their duties in confined spaces.

- **Training Frequency**
  Supervisors shall provide training to each affected employee:

    - Before the employee is first assigned duties within a confined space;
    - Before there is a change in assigned duties;
    - When there is a change in permit space operations that presents a hazard for which an employee has not been trained; and
    - When the (ENTITY NAME) has reason to believe that there are deviations from the confined space entry procedures required in this program, or that there are inadequacies in the employee's knowledge or use of these procedures.

  The training shall establish employee proficiency in the duties required in this program, and shall introduce new or revised procedures, as necessary, for compliance with this program.

- **General Training**
  All employees who will enter confined spaces shall be trained in entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry. Training shall include:

    - Explanation of the general hazards associated with confined spaces.

- Discussion of specific confined space hazards associated with the facility, location, or operation.
- Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces.
- Explanation of permits and other procedural requirements for conducting a confined space entry.
- A clear understanding of what conditions would prohibit entry.
- Procedures for responding to emergencies.
- Duties and responsibilities of the confined space entry team.
- Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers, and method(s) for alerting the Attendant(s).

Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions.

- **Specific Training**
  - Training for atmospheric monitoring personnel shall include proper use of monitoring instruments, including instruction on the following:

    - Proper use of the equipment;
    - Calibration of equipment;
    - Sampling strategies and techniques; and
    - Exposure limits (PELs, TLVs, LELs, UELs, etc.).

  - Training for Attendants shall include the following:

    - Procedures for summoning rescue or other emergency services; and
    - Proper utilization of equipment used for communicating with entry and emergency/rescue personnel.

Identification of Hazards and Evaluation of Confined Spaces

- **Pre-Entry Hazard Assessment**
  A hazard assessment shall be completed by the Supervisor prior to any entry into a confined space. The hazard assessment should identify:

  - The sequence of work to be performed in the confined space;
  - The specific hazards known or anticipated; and
  - The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level.

  No entry shall be permitted until the hazard assessment has been reviewed and discussed by all persons engaged in the activity. Personnel who are to enter confined spaces shall be informed of known or potential hazards associated with said confined spaces.

- **Hazard Controls**
  Hazard controls shall be instituted to address changes in the work processes and/or working environment. Hazard controls must be able to either control the health hazards by eliminating the responsible agents, reduce health hazards below harmful levels, or prevent the contaminants from coming into contact with the workers.

The following order of precedence shall be followed in reducing confined space risks:

- Engineering Controls

  Engineering controls are those controls that eliminate or reduce the hazard through implementation of sound engineering practices.

  Ventilation is one of the most common engineering controls used in confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space shall be ventilated until the atmosphere is within the acceptable ranges. Ventilation shall be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range. When ventilation is not possible or feasible, alternate protective measures or methods to remove air contaminants and protect occupants shall be determined by the Entry Supervisor prior to authorizing entry.

  When conditions necessitate and can accommodate continuous forced air ventilation, the following precautions shall be followed:

  - Employees shall not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
  - Forced air ventilation shall be directed so as to ventilate the immediate areas where an employee is or will be present within the space.
  - Continuous ventilation shall be maintained until all employees have left the space.
  - Air supply or forced air ventilation shall originate from a clean source.

- Work Practice (Administrative) Controls
  Work practice (administrative) controls are those controls that eliminate or reduce the hazard through changes in the work practices (i.e., rotating workers, reducing the amount of worker exposure, and housekeeping).

- Personal Protective Equipment (PPE)
  If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE should be used. The Entry Supervisor shall determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable standards shall be selected in accordance with the requirements of the job to be performed.

Entry Permits

The Confined Space Entry Permit is the most essential tool for assuring safety during entry in confined spaces with known hazards, or with unknown or potentially hazardous atmospheres. The entry permit process guides the supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions. Before each entry into a confined space, an entry permit will be completed by the Supervisor who will then communicate the contents of the permit to all employees involved in the operation, and post the permit conspicuously near the work location. A standard entry permit shall be used for all entries.

- **Key Elements of Entry Permits**
  A standard entry permit shall contain the following items:

- Space to be entered.
- Purpose of entry.
- Date and authorized duration of the entry permit.
- Name of authorized entrants within the permit space.
- Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems).
- Name(s) of personnel serving as Attendant(s) for the permit duration.
- Name of individual serving as Entry Supervisor, with a space for the signature or initials.
- Hazards of the permit space to be entered.
- Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces).
- Acceptable entry conditions.
- Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed.
- Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call).
- Communication procedures used by authorized entrants and Attendants(s) to maintain contact during the entry.
- Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue).
- Other information necessary for the circumstances of the particular confined space that will help ensure employee safely.
- Additional permits, such as for hot work, that have been issued to authorize work on the permit space.

- **Permit Scope and Duration**
  A permit is only valid for one shift. For a permit to be renewed, the following conditions shall be met before each reentry into the confined space:

  - Atmospheric testing shall be conducted and the results should be within acceptable limits. If atmospheric test results are not within acceptable limits, precautions to protect entrants against the hazards should be addressed on the permit and should be in place.
  - The Entry Supervisor shall verify that all precautions and other measures called for on the permit are still in effect.
  - Only operations or work originally approved on the permit shall be conducted in the confined space.

  A new permit shall be issued whenever changing work conditions or work activities introduce new hazards into the confined space. Any problems encountered during an entry operation shall be noted on the respective permit(s) so that appropriate revisions to the confined space permit program can be made.

Entry Procedures

When entry into a confined space is necessary, either the Entry Supervisor or (RESPONSIBLE PERSON) may initiate entry procedures, including the completion of a confined space entry permit. Entry into a confined space shall follow the standard entry procedure below.

- **Prior to Entry**

The entire confined space entry permit shall be completed before a standard entry. Entry shall be allowed only when all requirements of the permit are met and it is reviewed and signed by an Entry Supervisor. The following conditions must be met prior to standard entry

- Affected personnel shall be trained to establish proficiency in the duties that will be performed within the confined space.
- The internal atmosphere within the confined space shall be tested with a calibrated, direct-reading instrument.
- Personnel shall be provided with necessary PPE as determined by the Entry Supervisor.
- Atmospheric monitoring shall take place during the entry. If a hazardous atmosphere is detected during entry:

    - Personnel within the confined space shall be evacuated by the Attendant(s) or Entry Supervisor until the space can be evaluated to determine how the hazardous atmosphere developed; and
    - Controls shall be put in place to protect employees before reentry.

- **Opening a Confined Space**
  Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed. When entrance covers are removed, the opening shall by promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent anyone from falling through the opening. This barrier or cover shall protect each employee working in the space from foreign objects entering the space. If it is in a traffic area, adequate barriers shall be erected.

- **Atmospheric Testing**
  Atmospheric test data is required prior to entry into a confined space. Atmospheric testing is required for two distinct purposes: (1) evaluation of the hazards of the permit space, and (2) verification that acceptable conditions exist for entry into that space. If a person must go into the space to obtain the needed data, then Standard Confined Space Entry Procedures shall be followed. Before entry into a confined space, the atmosphere shall be tested for hazardous atmospheres. The internal atmosphere shall be tested with a calibrated, direct-reading instrument for oxygen, flammable gases and vapors, and potential toxic air contaminants, in that order.

  All testing equipment shall be approved by a nationally recognized laboratory, such as Underwriters Laboratories or Factory Mutual Systems.

  - Verification Testing
    A confined space that may contain a hazardous atmosphere shall be tested for residues of all identified or suspected contaminants. The evaluation testing should be conducted with specified equipment to determine that residual concentrations at the time or testing and entry are within acceptable limits. Results of testing shall be recorded by the person performing the tests on the permit. The atmosphere shall be periodically retested (frequency to be determined by Entry Supervisor to verify that atmospheric conditions remain within acceptable entry parameters.

  - Acceptable Limits

The atmosphere of the confined spaces shall be considered to be within acceptable limits when the following conditions are maintained:

- Oxygen: 19.5 percent to 23.5 percent;
- Flammability: less than 10 percent of the Lower Flammable Limit (LFL); and
- Toxicity: less than recognized American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits or other published exposure levels [i.e., OSHA Permissible Exposure Limits (PELs) or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)].

- **Isolation and Lockout/Tagout Safeguards**
  All energy sources that are potentially hazardous to confined space entrants shall be secured, relieved, disconnected, and/or restrained before personnel are permitted to enter the confined space. Equipment systems or processes shall be locked out and/or tagged out as required by the (ENTITY NAME) Lockout/Tagout Program. Lockout/Tagout of Energy Sources is required prior to permitting entry into the confined space. In confined spaces where complete isolation is not possible, the supervisor shall evaluate the situation and make provisions accordingly.

  When there is a need to test, position, or activate equipment by temporarily removing the lock or tag or both, a procedure shall be developed and implemented to control hazards to the occupants. Any removal of locks, tags, or other protective measures shall be done in accordance with the (ENTITY NAME) Lockout/Tagout Program.

- **Ingress/Egress Safeguards**
  Means for safe entry and exit shall be provided for confined spaces. Each entry and exit points shall be evaluated by the Entry Supervisor to determine the most effective methods and equipment that will enable employees to safely enter and exit the confined space.

  Appropriate retrieval equipment or methods shall be used whenever a person enters a confined space. Use of retrieval equipment may be waived by the Entry Supervisor if use of the equipment increases the overall risks of entry or does not contribute to the rescue. A mechanical device shall be available to retrieve personnel from vertical confined spaces greater than five (5) feet in depth.

- **Warning Signs and Symbols**
  If the workplace contains permit spaces, the employer shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

Emergency Response Plan

The (ENTITY NAME) shall maintain a written plan of action that has provisions for conducting a timely rescue of individuals within a confined space, should an emergency arise. The written plan shall be kept onsite where the confined space work is being conducted. All affected personnel shall be trained on the Emergency Response Plan.

Contractor Awareness, Duties, and Responsibilities

When a Department arranges for a contractor to perform work that involves permit required confined space entry, the Department shall:

- Inform the contractor in writing that the workplace contains permit spaces and that entry is allowed only through compliance with a permit required confined space entry program.
- Apprise the contractor of the hazards identified and the entity's experience with the confined space and any precautions the entity has implemented for the protection of entity employees.
- Coordinate entry operations with the contractor when both city personnel and contractor personnel who will be working in or near the permit spaces.

Non-Permit Confined Space Entry General Rules

A non-permit confined space shall be defined as a confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm. Prior to entering a non-permit confined space, the employee must practice the following safety rules:

- Check the ventilation system to ensure it is working properly.
- Continuously monitor the atmospheric conditions in the confined space with a portable gas monitor.
- Conduct a thorough observation of the confined space prior to entry to ensure that no unusual circumstances are present. Unusual circumstances include:

    - The presence, sight, or smell, of raw sewage.
    - Unpleasant odors from paint, chemicals, fuels, smoke, etc.
    - Damages or unsafe components such as steps, lids, fall protection devices, and other safety related items.

- Wear all required fall protection and safety related equipment in the confined space.
- Quickly evacuate the confined space if the conditions become unsafe for any reason.

EXCAVATION & TRENCHING SAFETY PROGRAM

Overview

The following excavation safety program is provided only as a guide to assist employers and employees in developing an excavation safety program. An employer should review the standard for particular requirements that are applicable to their organization and make adjustments in order to have an effective comprehensive program. For additional information, please refer to 29 CFR 1926, Subpart P, OSHA's excavation standard.

Even though public entities in the State of Texas do not fall under OSHA requirements, sections of the OSHA Standards should be reviewed for minimum industrial standards.

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EXCAVATION & TRENCHING SAFETY

Objective

This Excavation Safety Program has been developed to protect employees from safety hazards that may be encountered during work in trenches and excavations. This program is intended to assure that:

- Employees who perform work in excavations are aware of their responsibilities and know how to perform work safely.
- (ENTITY NAME) has appointed one or more individuals to assure compliance with the requirements of this program.
- The responsibilities of supervisors and employees are clearly detailed.
- All persons involved in excavation and trenching work have received appropriate training in the safe work practices that must be followed when performing this type of work.

Assignment of Responsibility

- **Employer**
  In administering the excavation safety program, (ENTITY NAME) will:
  - Monitor the overall effectiveness of the program.
  - Provide atmospheric testing and equipment selection as needed.
  - Provide personal protective equipment as needed.
  - Provide protective systems as needed.
  - Provide training to affected employees and supervisors.
  - Provide technical assistance as needed.
  - Preview and update the program on at least an annual basis, or as needed.

- **Program Manager**
  The (RESPONSIBLE PERSON) acts as the competent person for (ENTITY NAME) in reference to this program, and must assure that:
  - The procedures described in this program are followed.
  - Employees entering excavations or trenches are properly trained and equipped to perform their duties safely.
  - All required inspections, tests, and recordkeeping functions have been performed.

- **Employees**
  All employees who work in or around excavations must comply with the requirements of this program. Employees are responsible for reporting hazardous practices or situations to the (ENTITY NAME) management, as well as reporting incidents that cause injury to themselves or other employees.

- **Contractors**
  Construction projects involving trenching conducted within a municipality or for a political subdivision must comply with the Health & Safety Code, Chapter 756, Subchapter C, Trench Safety, Sections 756.021, 756.022 and 756.023. Contractors are responsible for inspections and assuring the safety of their personnel.

Training

- **Training Schedule**
  - All personnel involved in trenching or excavation work shall be trained in the requirements of this program with assistance from the appropriate supervisors.
  - Training shall be performed before employees are assigned duties in excavations.
  - Retraining will be performed when work site inspections indicate that an employee does not have the necessary knowledge or skills to safely work in or around excavations, or when changes to this program are made.
  - Training records will be maintained by (RESPONSIBLE PERSON) and shall include:
    - Date of the training program;
    - Name(s) of the instructor(s) who conducted the training;
    - A copy of the written material presented; and,
    - Name(s) of the employee(s) who received the training.

- **Training Components**
  The training provided to all personnel who perform work in excavations shall include:
  - The work practices that must be followed during excavating or working in excavations.
  - The use of personal protective equipment that will typically be required during work in excavations, including but not limited to safety shoes, hardhats, and fall protection devices.
  - Procedures to be followed if a hazardous atmosphere exists or could reasonably be expected to develop during work in an excavation.
  - The OSHA Excavation Standard, 29 CFR 1926, Subpart P.
  - Emergency and non-entry rescue methods, and the procedure for calling rescue services.
  - (ENTITY NAME) policy on reporting incidents that cause injury to employees.

- **Training and Duties of Program Manager**
  The Program Manager shall receive the training detailed in this program as well as training on the requirements detailed in the OSHA Excavation Standard. The Program Manager shall:
  - Coordinate, actively participate in, and document the training of all employees affected by this program.
  - Ensure on a daily basis, or more often as detailed in this program, that worksite conditions are safe for employees to work in excavations.
  - Determine the means of protection that will be used for each excavation project.
  - Ensure, if required, that the design of a protective system has been completed and approved by a registered professional engineer before work begins in an excavation.

- Make available a copy of this program and the OSHA Excavation Standard to any employee who requests it.

Excavation Requirements

- **Utilities and Pre-Work Site Inspection**
  Prior to excavation, the site shall be thoroughly inspected by the Supervisor to determine if special safety measures must be taken.

- **Surface Encumbrances**
  All equipment, materials, supplies, permanent installations (buildings or roadways), trees, brush, boulders, and other objects at the surface that could present a hazard to employees working in the excavation shall be removed or supported as necessary to protect employees.

- **Underground Installations**
  - The location of sewer, telephone, fuel, electric, water, or any other underground installations or wires that be encountered during excavation work shall be determined and marked prior to opening an excavation in accordance with One Call and Railroad Commission of Texas requirements. Arrangements shall be made as necessary with the appropriate utility entity for the protection, removal, shutdown, or relocation of underground installations.

  - If it is not possible to establish the exact location of these installations, the work may proceed with caution if detection equipment or other safe and acceptable means are used to locate the utility.

  - Excavation shall be done in a manner that does not endanger the underground installations or the employees engaged in the work. Utilities left in place shall be protected by barricades, shoring, suspension, or other means as necessary to protect employees.

- **Protection of the Public**
  Barricades, walkways, lighting, and posting shall be provided as necessary for the protection of the public prior to the start of excavation operations.

  - Guardrails, fences, or barricades shall be provided on excavations adjacent to walkways, driveways, and other pedestrian or vehicle thoroughfares. Warning lights or other illumination shall be maintained as necessary for the safety of the public and employees from sunset to sunrise.

  - Wells, holes, pits, shafts, and all similar hazardous excavations shall be effectively barricaded or covered and posted as necessary to prevent unauthorized access. All temporary excavations of this type shall be backfilled as soon as possible.

  - Walkways or bridges protected by standard guardrails shall be provided where employees and the general public are permitted to cross over excavations. Where workers in the excavation may pass under these walkways or bridges, a standard guardrail and toe board shall be used to prevent the hazard of falling objects.

- **Protection of Employees**
  Stairs, ladders, or ramps shall be provided at excavation sites where employees are required to enter trench excavations over four (4) feet deep. The maximum distance of lateral travel (along the length of the trench) necessary to reach the means of egress shall not exceed 25 feet.

  - Structural Ramps
    - Structural ramps used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a person qualified in structural design, and shall be constructed in accordance with the design.

    - Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent movement or displacement.

    - Structural members used for ramps and runways shall be of uniform thickness.

    - Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.

    - Structural ramps used in place of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

  - Ladders

    - When portable ladders are used, the ladder side rails shall extend a minimum of three (3) feet above the upper surface or the excavation.

    - Ladders shall have nonconductive side rails if work will be performed near exposed energized equipment or systems.

    - Ladders will be inspected prior to use for signs of damage or defects. Damaged ladders will be removed from service and marked with “Do Not Use” until repaired.

    - Ladders shall be used only on stable and level surfaces unless secured. Ladders placed in any location where they can be displaced by workplace activities or traffic shall be secured, or barricades shall be used to keep these activities away from the ladders.

    - Non self-supporting ladders shall be positioned so that the foot of the ladder is one-quarter of the working length away from the support.

    - Employees are not permitted carry any object or load while on a ladder that could cause them to lose their balance and fall.

- **Exposure to Vehicular Traffic**

Employees exposed to vehicular traffic shall be provided with, and shall wear warning vests or other suitable garments marked with or made or reflectorized or high-visibility material. Warning vests shall be worn by flaggers and shall be reflectorized material if worn during night work. Emergency lighting, such as spotlights or portable lights, shall be provided as needed to perform work safely. Proper procedures for work zone traffic control procedures shall be followed in accordance with the Texas Manual on Uniform Traffic Control Devices.

- **Exposure to Falling Loads**
  No employee is permitted underneath loads being handled by lifting or digging equipment. Employees are required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles provide adequate protection for the operator during loading and unloading operations.

- **Warning System for Mobile Equipment**
  A warning system shall be used when mobile equipment is operated adjacent to the edge of an excavation if the operator does not have a clear and direct view of the edge of the excavation. The warning system shall consist of barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

- **Hazardous Atmospheres**
  The Supervisor will test the atmosphere in excavations over four (4) feet deep if a hazardous atmosphere exists or could reasonably be expected to exist. A hazardous atmosphere could be expected, for example, in excavations in landfill areas, areas where hazardous substances are stored nearby, or near areas containing gas pipelines.

  - Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or forced ventilation of the workspace.

  - Forced ventilation or other effective means shall be used to prevent employee exposure to an atmosphere containing a flammable gas in excess of twenty (20) percent of the lower flammability limit of the gas.

  - When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, continuous air monitoring will be performed. The device used for atmospheric monitoring shall be equipped with an audible and visual alarm.

  - Atmospheric testing will be performed using a properly calibrated direct reading gas monitor. Direct reading gas detector tubes or other acceptable means may also be used to test potentially toxic atmospheres.

  - Each atmospheric testing instrument shall be calibrated on a schedule and in the manner recommended by the manufacturer. In addition:

    - Each atmospheric testing instrument will be field checked immediately prior to use to ensure that it is operating properly.

- **Personal Protective Equipment**
  - All employees working trenches or excavations shall wear approved hardhats and safety shoes or boots.

  - Employees exposed to flying fragments, dust or other materials produced by drilling, sawing, sanding, grinding, and similar operations shall wear approved safety glasses with side shields.

  - Employees performing welding, cutting, or brazing operations, or are exposed to the hazards produced by these tasks, shall wear approved spectacles or a welding faceshield or helmet.

  - Employees entering bell-bottom pier holes or other similar deep and confined footing excavations shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

  - Employees shall wear approved gloves or other suitable hand protection.

  - Employees using or working in the immediate vicinity of hammer drills, masonry saws, jackhammers, or similar high-noise producing equipment shall wear suitable hearing protection.

  - Each employee working at the edge of an excavation six (6) feet or more deep shall be protected from falling. Fall protection shall include guardrail systems, fences, barricades, or covers.

  - Emergency rescue equipment, such as breathing apparatus, a safety harness and line, and a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may develop during work in an excavation. This equipment shall be attended when in use. Only personnel who have received approved training and have appropriate equipment shall attempt retrieval that would require entry into a hazardous atmosphere. If entry into a known hazardous atmosphere must be performed, then the Supervisor shall be given advance notice so that the hazards can be evaluated and rescue personnel placed on standby if necessary.

- **Walkways and Guardrails**
  Walkways shall be provided where employees or equipment are permitted to cross over excavations. Guardrails shall be provided where walkways, accessible only to on-site project personnel, are six (6) feet or more above lower levels.

- **Protection from Water Accumulation Hazards**
  - Employees are not permitted to work in excavations that contain or are accumulating water unless precautions have been taken to protect them from the hazards posed by water accumulation. Precautions may include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines.

  - If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operation shall be monitored by a person trained in the use of that equipment.

- If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation. Precautions shall also be taken to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains shall be reinspected by the Supervisor after each rain incident to determine if additional precautions, such as special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of safety harnesses and lifelines, should be used.

- The Supervisor shall inform affected workers of the precautions or procedures that are to be followed if water accumulates or is accumulating in an excavation.

- **Stability of Adjacent Structures**
  The Supervisor will determine if the excavation work could affect the stability of adjoining or adjacent buildings, walls, sidewalks, or other structures.

  - Support systems (such as shoring, bracing, or underpinning) shall be used to assure the stability of structures and the protection of employees where excavation operations could affect the stability of adjoining buildings, walls, or other structures.

  - Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted, except when:

    - A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure;
    - The excavation is in stable rock;
    - A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation, so as to be unaffected by the excavation activity; or
    - A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

  - Sidewalks, pavements, and appurtenant structures shall not be undermined unless a support system or other method of protection is provided to protect employees from the possible collapse of such structures.

  - Where review or approval of a support system by a registered professional engineer is required, (RESPONSIBLE PERSON) shall secure this review and approval in writing before the work begins.

- **Protection from Falling Objects and Loose Rocks or Soil**
  - Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of:

        - Scaling to remove loose material;
        - Installation of protective barricades, such as wire mesh or timber, at appropriate intervals on the face of the slope to stop and contain falling material; or
        - Benching sufficient to contain falling material.

    - Excavation personnel shall not be permitted to work above one another where the danger of falling rock or earth exists.

    - Employees shall be protected from excavated materials, equipment, or other materials that could pose a hazard by falling or rolling into excavations.

    - Protection shall be provided by keeping such materials or equipment at least two (2) feet from the edge of excavations, by use of restraining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

    - Materials and equipment may need to be stored further than two (2) feet from the edge of the excavation if a hazardous loading condition is created on the face of the excavation.

    - Materials piled, grouped, or stacked near the edge of an excavation must be stable and self-supporting.

- **Inspection by Program Manager**
    - The Program Manager shall conduct daily inspections of excavations, adjacent areas, and protective systems for evidence of a situation, that could result in possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the Supervisor prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when the trench will be or is occupied by employees.

    - Where the Supervisor finds evidence of a situation that could result in a possible cave-in, failure of protective systems, hazardous atmosphere, or other hazardous conditions, exposed employees shall be removed from the hazardous area until precautions have been taken to assure their safety.

    - The Supervisor shall maintain a written log of all inspections conducted. This log shall include the date, work site location, results of the inspection, and a summary of any action taken to correct existing hazards.

Protective System Requirements

- **Protection of Employees**
    - Employees in an excavation shall be protected from cave-ins by either an adequate sloping and benching system or an adequate support or protective system. The only exceptions are:

        - Excavations made entirely in stable rock; or
        - Excavations less than five (5) feet in depth where examination of the ground by the Supervisor provides no indication of a potential cave-in.

- Protective systems shall be capable of resisting all loads that could reasonably be expected to be applied to the system.

- **Design of Sloping and Benching Systems**
  The slope and configuration of sloping and benching systems shall be selected and constructed in accordance with the following options:

  - Allowable configurations and slopes

    - Excavations shall be sloped at an angle no steeper than one and one-half (1 1/2) horizontal to one (1) vertical (34 degrees measured from the horizontal), unless one of the options below is used.

    - Slopes shall be properly excavated depending on soil type as shown in 29 CFR 1926, Subpart P, Appendix B.

  - Determination of slopes and configurations using 29 CFR 1926, Subpart P, Appendices A and B.

    The maximum allowable slopes and allowable configurations for sloping and benching systems shall meet the requirements set forth in these appendices.

  - Designs using other tabulated data

    The design of sloping or benching systems may be selected from, and shall be constructed in accordance with, other tabulated data, such as tables and charts. The tabulated data used must be in written form and include the following:

    - Identification of the factors that affect the selection of a sloping or benching system.

    - Identification of the limits of the use of the data, including the maximum height and angle of the slopes determined to be safe.

    - Other information needed by the user to make correct selection of a protective system.

    At least one copy of the tabulated data that identifies the registered professional engineer who approved the data shall be maintained at the jobsite during construction of the protective system.

  - Design by a registered professional engineer

    - Sloping or benching systems designed in a manner other than those described in the preceding three options shall be approved by a registered professional engineer.

    - At least one copy of the design shall be maintained at the jobsite while the slope is being constructed

    - Designs shall be in written form and shall include at least the following information;

- ✓ the maximum height and angle of the slopes that were determined to be safe for a particular project; and

- ✓ the identity of the registered professional engineers who approved the design

- **Design of Support, Shield, and Other Protective Systems**
  The design of support systems, shield systems, and other protective systems shall be selected and constructed in accordance with the following requirements:

  - Designs using 29 CFR 1926, Subpart P, appendices A, C and D

    - Timber shoring in trenches shall be designed in accordance with the requirements of the OSHA guidelines.

    - Aluminum hydraulic shoring shall be designed in accordance with the manufacturer's tabulated data or the requirements of the OSHA guidelines.

  - Designs using manufacturer's tabulated data

    - Support systems, shield systems, and other protective systems designed from manufacturer's tabulated data shall be constructed and used in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

    - Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall be allowed only after the manufacturer issues specific written approval.

    - Manufacturer's specifications, recommendations, and limitations, as well as the manufacturer's written approval to deviate from the specifications, recommendations, and limitations, shall be kept in written form at the jobsite during construction of the protective system(s).

  - Designs using other tabulated data

    Designs of support systems, shield systems, and other protective systems shall be selected from and constructed in accordance with tabulated data, such as tables and charts. The tabulated data shall be in written form and shall include all of the following:

    - Identification of the factors that affect the selection of a protective system drawn from such data.

    - Identification of the limits of the use of such data; and

    - Information needed by the user to make a correct selection of a protective system from the data.

    At least one written copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system.

  - Design by a registered professional engineer

Support systems, shield systems, and other protective systems designed in a manner other than the preceding three options shall be approved by a registered professional engineer. Designs shall be in written form and shall include:

- a plan indicating the sizes, types, and configurations of the materials to be used in the protective system; and

- the identity of the registered professional engineer who approved the design.

At least one copy of the design shall be maintained at the jobsite during construction of the protective system.

- **Materials and Equipment**
  - Materials and equipment used for protective systems shall be free from damage or defects that might affect their proper function.

  - Manufactured materials and equipment used for protective systems shall be used and maintained in accordance with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.

  - When materials or equipment used for protective systems are damaged, the Supervisor shall ensure that these systems are examined by a competent person to evaluate suitability for continued use. If the competent person cannot assure that the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service. The material or equipment shall then be evaluated and approved by a registered professional engineer before being returned to service.

- Installation and Removal of Supports
  - General

    - Members of support systems shall be securely connected together to prevent sliding, falling, kickouts, or other potential hazards.

    - Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapse, or from being struck by members of the support systems.

    - Individual members of the support systems shall not be subjected to loads exceeding those that they were designed to support.

    - Before temporary removal of individual support members begins, additional precautions shall be taken to ensure the safety of employees (i.e., the installation of other structural members to carry the loads imposed on the support system).

    - Removal of support systems shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly. If there is any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation, the work shall be halted until it can be examined by the Supervisor.

        - Backfilling shall progress in conjunction with the removal of support systems from excavations.

    - Additional Requirements

        - Excavation of material to a level no greater than two (2) feet below the bottom of the members of the support system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench. There shall be no indications of a possible loss of soil from behind or below the bottom of the support system while the trench is open.

        - Installation of a support system shall be closely coordinated with the excavation of trenches.

- **Sloping and Benching Systems**
  Employees are not permitted to work above other employees in the faces of sloped or benched systems, except when employees at lower levels are protected from the hazards of falling, rolling, or sliding material or equipment.

- **Shield Systems**
    - General

        - Shield systems shall not be subjected to loads that are greater than those they are designed to withstand.

        - Shields shall be installed in a manner that will restrict lateral or other hazardous movement of the shield and could occur during cave-in or unexpected soil movement.

        - Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.

        - Employees are not permitted in trenches when shields are being installed, removed, or moved vertically.

    - Additional Requirements

        - Excavation of material to a level no greater than two (2) feet below the bottom of the shield system is allowed, but only if the system is designed to resist the forces calculated for the full depth of the trench.

        - There shall be no indications of a possible loss of soil from behind or below the bottom of the shield system while the trench is open.

Accident Investigations
All incidents that result in injury to workers, as well as near misses, regardless of their nature, shall be reported and investigated. Investigations shall be conducted by the Supervisor as soon after an incident as possible to identify the causes and means of prevention to eliminate the risk of reoccurrence.

In the event of such an incident, the *Excavation & Trenching Safety Program* shall be reevaluated to determine if additional practices, procedures, or training are necessary to prevent similar future incidents.

Changes to Program

Any changes to the *Excavation & Trenching Safety Program* shall be approved and reviewed by a qualified person as the job progresses to determine additional practices, procedures, or training needs necessary to prevent injuries. Affected employees shall be notified of procedure changes, and trained if necessary.

Glossary of Terms

Accepted engineering practices: the standards of practice required by a registered professional engineer.

Aluminum hydraulic shoring: a manufactured shoring system consisting of aluminum hydraulic cylinders (cross braces) used with vertical rails (uprights) or horizontal rails (wales). This system is designed to support the sidewalls of an excavation and prevent cave-ins.

Bell-bottom pier hole: a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a bell shape.

Benching system: a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or more horizontal steps, usually with vertical or near-vertical surfaces between levels.

Cave-in: the movement of soil or rock into an excavation, or the loss of soil from under a trench shield or support system, in amounts large enough to trap, bury or injure and immobilize a person.

Competent person: a person who has been trained to identify hazards in the workplace, or working conditions that are unsafe for employees, and who has the authority to have these hazards corrected.

Cross braces: the horizontal members of a shoring system installed from side to side of the excavation. The cross braces bear against either uprights or wales.

Excavation: any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Faces or sides: the vertical or inclined earth surface s formed as a result of excavation work.

Failure: the movement or damage of a structural member or connection that make it unable to support loads.

Hazardous atmosphere: an atmosphere that is explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, that may cause death, illness, or injury.

Kickout: the accidental movement or failure of a cross brace.

Program Manager: the individual within the organization who oversees excavation work and it responsible for assuring compliance with this program.

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

Ramp: an inclined walking or working surface that is used to gain access to one point from another. A ramp may be constructed from earth or from structural materials such as steel or wood.

Sheeting: the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

Shield system: a structure used in an excavation to withstand cave-ins and which will protect employees working within the shield system. Shields can be permanent structures or portable units moved along as work progresses. Shields used in trenches are usually referred to as trench boxes or trench shields.

Shoring system: a structure that is built or put in place to support the sides of an excavation to prevent cave-ins.

Sides: see Faces or Sides

Sloping system: sloping the sides of an excavation away from the excavation to protect employees from cave-ins. The required slope will vary with soil type, weather, and surface or near surface loads that my affect the soil in the area of the trench (such as adjacent buildings, vehicles near the edge of the trench, etc.).

Stable rock: natural solid mineral material that can be excavated with vertical sides that will remain intact while exposed.

Structural ramp; a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

Support system: a structure used as underpinning, bracing or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated data: tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench: a narrow excavation (in relation to its height) made below the surface of the ground.

Trench box or ***trench shield***: see Shield System

Uprights: the vertical members of a trench shoring system placed in contact with the earth and usually positioned so the individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called sheeting.

Wales: horizontal members of a shoring system placed in the direction of the excavation face whose sides bear against the vertical members of the shoring system or earth (the uprights or sheeting).

SECTION 3 - GENERAL SAFETY RULES & DEPARTMENT/OPERATION - SPECIFIC SAFETY RULES

GENERAL SAFETY RULES

- Each employee shall be required to comprehend and abide by the contents of this safety program.
- All accidents, regardless of severity, shall be immediately reported to your supervisor.
- All hazardous conditions, actions, and/or practices shall be reported to your supervisor.
- Work areas, including the inside and outside of vehicles and buildings, shall be kept clean and orderly at all times.
- Employees shall only operate equipment/tools that they are trained and authorized to operate.
- Smoking shall be prohibited in areas where there is a danger to equipment, materials, co-workers or buildings, or where 'No Smoking' signs are posted.
- Employees shall use all safety devices and personal protective equipment provided for their protection.
- Employees shall wear clothing and shoes suitable for the particular work they are doing.
- Employees shall use assisted lifting devices or obtain assistance from a coworker when lifting heavy objects.
- Guards shall never be removed except when authorized to make repairs or adjustments. Replace guard immediately upon completion of work.
- Before starting work on any machine or equipment that is out of service, employees shall render the equipment or machine inoperative and attach a lockout device to the equipment control.
- The use of drugs and alcohol during working hours is prohibited. Any employee reporting to work under the influence of alcohol or controlled substances shall be subject to disciplinary action.
- Any employee taking prescription drugs or over-the-counter drugs that could impair assigned work shall report this fact to the supervisor as soon as possible.
- Employees shall not engage in practical jokes or horseplay.

MOBILE (CELLULAR) TELEPHONES & WIRELESS COMMUNICATION DEVICES

Mobile telephones and other wireless communication devices can be a distraction to workers in many areas. Communication devices should never create a safety issue for any employee. The following rules have been established to assist in maintaining a safe working environment:

- During working hours, personal telephones should only be used for high-priority (i.e., family issues, emergencies, etc.) personal communication and not for mere casual use.

- If a phone or other device is to be used for work/business purposes and must be used from a vehicle or piece of equipment, the vehicle should be safely stopped, preferably off the road, and placed in park prior to receiving or placing a call.

- If a call must be placed or received from the field, the worker should stop the work and must ensure that the area and personnel in the work area are safe prior to phone usage.

- Telephone ringers should be placed to minimum volume or vibrate mode to ensure that others will not be startled by the ring.

JOB, TASK, & PROJECT BRIEFINGS

The (RESPONSIBLE PERSON) in charge of each individual work group is responsible for conducting a job/task/project briefing to all affected employees prior to work commencing. The briefing should address the following subjects, at a minimum:

- Brief overview of the job to be completed
- Hazards associated with the job
- Work procedures involved in completing the job
- Special necessary precautions
- Energy source controls
- Personal protective equipment requirements

If the work or operations to be performed during the work day are repetitive and similar, at least one job briefing shall be conducted before the start of the first job each day. Additional job briefings are required if significant changes, which might affect the safety of employees, occur throughout the course of the work.

A brief discussion is satisfactory if the work involved is routine and if all employees, by virtue of training and experience, can reasonably be expected to recognize, avoid, and protect themselves against the hazards involved with the job. A more extensive discussion should be held if the work is complicated or extremely hazardous, or if employees cannot be expected to recognize, avoid, and protect against the hazards.

An employee working alone need not conduct a job briefing. However, the (RESPONSIBLE PERSON) should ensure that the tasks to be performed are planned as if a briefing were required.

WORKING ALONE

While it is not necessarily hazardous to work alone, work exposures combined with the fact that the employee is alone require preparation by the entity, supervisor, and employee. Whether a situation is high or low risk will depend upon the type of work, location, interaction with the public, or consequences of an accident, injury or emergency.

High risk activities include working from heights, confined spaces, electrically charged devices, hazardous materials or chemicals, power equipment, high-pressure devices, and potentially violent people. Such exposures may require additional employees or significant preparation so that the employees are knowledgeable about hazards and a determination by supervisors that lone workers have demonstrated the capability to work safely and independently.

To help ensure the safety of a person working alone, consider the following actions:

- Assess potential workplace hazards.
- Talk with employees about the assigned tasks, discussing exposures and solutions.
- Avoid having to work alone during high risk jobs.
- Take corrective action to prevent or minimize the risks of working alone.
- Provide appropriate safety training and education.
- Establish a check-in procedure for staff.
- Schedule high risk tasks during normal business hours or when another worker capable of helping is present.
- Report all unsafe situations, incidents, and near misses, particularly if working alone would have increased or did increase the severity of the situation.

CHEMICAL HANDLING & STORAGE

General Handling and Storage Guidelines

The risks associated with handling and storage of chemicals can be considerably reduced by following the actions listed below.

- A comprehensive chemical list should be maintained at each worksite or facility and include all chemicals or products at that site.

- A safety data sheet (SDS) should be maintained for each chemical or product on-hand at a particular worksite. See *Hazard Communication Policy* for additional details.

- Chemical storage should be minimized to only those chemicals which will be actively used.

- Employees should not use chemicals that they are unfamiliar with or have not been trained to use.

- Chemicals should be stored in proper containers designed for such use.

- Chemicals should be stored such that they will not react with other chemicals, substances, or materials.

- All chemical containers should be labeled as to the contents, reactivity, flammability, special hazards, and any other health hazard using the appropriate chemical label.

Chemical Safety Guidelines

- **Acids**
  - Store large bottles of acids on lower shelves or on trays in acid cabinets or a cabinet marked “Corrosive”.
  - Segregate oxidizing acids from organic acids, flammables, and combustible materials.
  - Segregate acids from bases, active metals (sodium, potassium, magnesium) and other incompatible materials.
  - Use bottle carriers or a cart to transport acid bottles.
  - Have spill control materials or acid neutralizers available in the event of a spill. Do not use bases to neutralize an acid spill.

- **Bases**
  - Store large bottles of liquid bases on trays in cabinets marked as “Bases” or “Corrosives”.
  - Segregate bases from acids and other incompatible materials.
  - Store solutions of inorganic hydroxides in polyethylene containers.
  - Have spill control materials or caustic neutralizers for caustic spills. Do not use acids to neutralize base (caustic) spills

- **Flammables**
  - Only store flammable liquids in specially designed ‘flammable-safe’ cabinets.
  - Keep flammables away from sources of heat or ignition.
  - Keep fire extinguishing and spill control equipment readily available.

- **Oxidizers**

- Store oxidizers in a cool, dry location and away from flammable or combustible materials, such as paper or wood products.
- Store oxidizers away from petroleum-based products.

- **Compressed Gases**
  - Compressed gas cylinders should be stored in an upright position and secured to prevent accidental tipping or falling.
  - Cylinders should be stored with the protective cap in place.
  - All cylinders should be labeled as “Full”, “In-Use”, or “Empty”.
  - Cylinder should not be carried or rolled but should be transported using a cylinder cart.
  - For additional details on compressed gases, see the *Compressed Gas Safety* section in this manual.

COMPRESSED GAS CHLORINE SAFETY

The following procedures are designed to explain proper safety precautions and rules regarding the safe handling of compressed gas chlorine.

Changing Chlorine Cylinders (Non-Emergency)

This procedure should be followed for any and all compressed gas cylinders (150 pound and/or 1 ton). A minimum of two, properly trained, and competent personnel should perform this task.

- Turn on the light, if equipped, and visually ensure that the room is safe to enter as there may be visual signs of danger or damage.

- Don appropriate personal protective equipment including protective gloves, eye protection, face shield, and self-contained breathing apparatus (SCBA). An escape respirator should not be used for this function.

- Turn on the exhaust ventilation fan prior to entering the area.

- Close the main chlorine container valve.

- Allow the system to purge itself of chlorine gas. Ensure the float drops to the bottom of the feed-rate indicator (rotameter). Verify the vacuum and that the scales, if equipped, read 'zero', indicating an empty cylinder.

- Loosen the chlorinator (auxiliary valve or vacuum regulator) and remove it from the empty cylinder.

- Replace the protective cylinder cap on the empty cylinder and remove the cylinder to the appropriate storage area. Be sure the cylinder is secured and properly labeled as 'Empty'.

- Secure the new cylinder into place, removing the protective cap after placement.

- Ensure that there is no chlorine leaking from the packaging gland. Use ammonia vapor from the ammonia test solution bottle (25% ammonia).

- Ensure the cylinder valve is closed. Do not open the valve yet.

- Remove the cylinder outlet cap and check that the cylinder outlet face is clean and smooth.

- Using a new washer, connect the vacuum regulator or the yoke assembly (whichever is used on the particular system) to the valve outlet using only the proper wrench.

- Briefly open the chlorine cylinder valve and then quickly close it again. This will let enough chlorine into the lines to charge them. The valve should remain open with no more than a sharp rap from the heel of your hand. Never use a 'cheater' or 'helper' wrench or larger wrench than supplied. If the valve will not open, carefully and slightly loosen the packing gland.

- Check that all connections are secure that there are no leaks. Use the vapor from the ammonia test solution bottle (25% ammonia). If a leak is indicated, activate the proper leak control procedure.

- When no leaks are indicated, open the chlorine cylinder valve no more than one half turn and leave the cylinder wrench in place on the valve.

- Open any additional system valves and test for leaks using the vapor ammonia test solution bottle as each stage is charged with chlorine.

- Ensure that the alarm system, if equipped, is properly functioning.

- Leave the chlorine room/area turning off the light and exhaust fan. Ensure that all employees have exited the room before turning off light and fan.

- Once safely outside the chlorine room/area, remove personal protective equipment.

FALL PREVENTION

Slips, trips, and falls constitute a large percentage of accidents and injuries in public entities. These procedures are designed to prevent hazardous conditions that could result in slips, trips, or falls.

Supervisor Responsibilities

- Conduct routine inspections to ensure all walking and working surfaces are free from potential slip, trip, and fall hazards.
- Conduct safety training for employees who use ladders, scaffolds, or other elevated surfaces.
- Conduct training in the use and inspection of fall prevention and fall arrest equipment.
- Ensure proper ladders are used for specific tasks.
- Provide adequate fall prevention and fall arrest equipment.

Employee Responsibilities

- Maintain work areas free from potential slip, trip, and fall hazards.
- Correct or immediately report potential slip, trip, and fall hazards.
- Use proper ladders for assigned tasks.
- Use proper fall prevention and fall arrest equipment as prescribed by policies.

Engineered and Administrative Hazard Controls

Although every effort is made to prevent slips, trips, and fall accidents, additional precautions should be taken to ensure all possible measures have been taken. These include:

- Proper construction of elevated work surfaces.
- Proper use of hand, knee, and toe rails, where required.
- Proper design and use of fixed ladders and stairs.
- Adequate lighting in all areas.
- Training for all employees who work on elevated work surfaces.
- Routine inspections of ladders, stairs, walking, and working surfaces.
- Following housekeeping and cleaning requirements
- Immediate addressing potential problem areas.

General Requirements

- **Housekeeping**
  - All work areas, passageways, storerooms, and shop areas should be kept clean and orderly at all times.
  - The floor of every work area shall be maintained in a clean and dry condition as possible. Where wet operations are held, adequate drainage should be maintained, and non-slip mats or floor covering shall be provided.
  - Every floor, work area, and passageway shall be kept free of protruding nails, splinters, holes, debris, and stored items.

- **Aisles and Passageways**
  - Aisles and passageways shall be kept clear and in good repair with no obstructions across or in aisles that could cause a hazard.
  - Where mechanical equipment is used, aisles should be of adequate width as improper aisles coupled with poor housekeeping, vehicle and foot traffic, can cause injury to employees, damage to equipment and materials, and can limit egress in the event of an emergency.
  - Changes in elevation, such as steps, curbs, and ramps, should be marked or highlighted with a stripe of highly-visible paint or other non-skid material to assist in the identification of the known trip and fall hazard.

- **Guarding Floor and Wall Openings**
  Floor openings and holes, wall openings and holes, and the open sides of elevated work surfaces may create hazards as people may fall through the openings or over the side to

the level below. Objects such as tools or parts, may also fall through holes and strike employees or damage machinery on lower levels.

- Standard railings shall be provided on all exposed sides of a stairway opening, except at the stairway entrance.

- Floor openings may be covered rather than guarded with rails. However, temporary guard rails shall be placed when the opening is uncovered.

  - A 'standard railing' consists of a top rail, mid rail, and posts, and shall have a vertical height of 42 inches from the upper surface of the rail to the walking surface. Nominal height of the mid rail shall be 21 inches.

  - A 'standard toeboard' is 4 inches in vertical height, with not more than ¼ inch clearance above floor level.

- **Guarding of Open-Sided Floors, Platforms, and Runways**
  Every open-sided floor or work surface located 4 feet or more above the adjacent floor or ground level shall be guarded by a standard railing (as specified above) on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. A toeboard shall be provided as well.

- **Guarding Stairways**
  Every flight of stairs, with four or more risers, shall have standard stair railings or standard handrailings (as specified above).

- **Fixed Industrial Stairs**
  Fixed industrial stairs shall be provided for access to and from places of work where operations necessitate regular travel between levels. These stairs shall:

  - Be strong enough to carry five times the normal anticipated live load.
  - At the very minimum, be able to carry a moving concentrated load of 1000 pounds.
  - Have a minimum width of 22 inches.
  - Be installed at angles to the horizontal of between 30 and 50 degrees.
  - Have a vertical clearance to an overhead obstruction of at least 7 feet from the leading edge of the tread.

- **Portable Ladders**
  The primary hazard associated with the use of a ladder is falling. A poorly designed, maintained, or improperly used ladder may collapse under the load placed upon it and cause the employee to fall.

  For specific safety procedures for different types of ladders, see the section on *Ladder Safety* in this manual.

- **Fixed Ladders**

A fixed ladder is a ladder permanently installed or attached to a structure, building, or equipment. Fixed ladders with a length of more than 20 feet shall be equipped with a safety cage or ladder safety device. A 'cage' is a guard that is fastened to the side rails of the fixed ladder or to the structure designed to encircle the climbing space of the ladder for the safety of the person who must climb the ladder. Cages should extend a minimum of 42 inches above the top of the landing unless other acceptable fall protection is provided.

- **Scaffolds**
  - The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable objects, such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

  - Scaffolds and their components shall be capable of supporting at least *four times* the maximum intended load.

  - Scaffolds shall be maintained in a safe condition and shall not be altered or moved horizontally while they are in use or occupied.

  - Damaged or weakened scaffolds shall be immediately repaired and shall not be used until repairs have been completed.

  - A safe means must be provided to gain access to the working platform level through the use of a ladder, ramp, etc.

  - Overhead protection must be provided for personnel on a scaffold exposed to overhead hazards.

  - Guardrails, mid rails, and toeboards must be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Wire mesh must be installed between the toeboard and the guardrail along the entire opening, where persons are required to work or pass under the scaffolds.

  - Employees shall not work on scaffolds during storms or high winds or when covered with ice or snow.

Fall Arrest Systems

Different types of personal fall arrest systems are available depending upon the nature of work and the specific conditions in the area where the work will take place.

- **Types of Fall Arrest Systems**
  - *Personal Fall Arrest* systems are used to stop a fall once it has begun and includes an anchorage and connector, full body harness, lanyard, locking snap hooks, lifeline, and may include a descent control device.

  - *Positioning Device* systems prevent falls by supporting the employee in a working position and eliminate the chance for a fall to begin. These systems include a body belt, harness, connector, locking snap hook, and proper anchorage.

- *Personal Fall Protection for Climbing Activities* protects the employee while climbing and anchors at a point that usually adjusts and moves with the climber.

- **Anchorage**
  Anchorage is critical and the selection of the anchoring point shall be carefully chosen. Anchorage points must be permanent, fixed objects that are rated to hold forces several times the employee's weight, including the weight of the equipment that they have with them.

  When tying off to anchorage points, it is important to do so in a location where there are no obstacles in the potential path of fall and shall allow no more than 6 feet of free-falling distance, although (2 to 4 feet of free falling distance is recommended). The employee should also understand and account for the additional deceleration distance of the fall arrest system being used.

- **Body Belts and Harnesses**
  Only approved full-body harnesses shall be used. All recommendations of the equipment manufacturer shall be met, including care, storage, testing, and replacement.
  A harness may be attached to either the center of the back at shoulder level, or above the head. Employees must follow the procedure described below to don their full-body harness:

  - Inspect the harness before putting it on.
  - Hold the harness by the D-ring and shake the straps into place.
  - Release buckled straps and slip them over the shoulders with the D-ring in back.
  - Pull the leg strap between the legs and connect to the opposing end.
  - Waist strap should be tight but not binding.
  - Connect chest straps and position in the middle of the chest.
  - Ensure that the harness is snug but allows full movement.

PERSONAL PROTECTIVE EQUIPMENT - GENERAL REQUIREMENTS

- All employees shall wear clothing suitable for their particular type of work. Loose clothing shall not be worn while working around or near moving machinery or equipment.

- All department-approved special protective clothing or protective devices shall be used by employees when required by policy and/or department supervisors.

- Clothing that is soiled by oil or chemicals should be avoided to prevent skin irritations.

- When work is performed in the vicinity of exposed energized parts of equipment, employees shall remove all exposed conductive articles, such as key or watch chains, rings, wristwatches, or bands, if such articles increase the hazards associated with inadvertent contact with the energized parts.

- Rings or jewelry shall not be worn while climbing on or off structures or vehicles while performing any task where the ring might get caught under or snagged by a projecting item. In addition, rings and wristwatches with metal case and watchbands shall not be worn while working on or near energized equipment or lines.

- Department approved gloves shall be provided to and worn by all employees when work site operations could cause injury to the hands.

- Gloves and long sleeves shall be worn to protect hands and arms when handling cement, brush, sharp objects, hot materials, acids and other chemicals, or when there is a possible exposure to poison ivy.

- Department approved head protection shall be provided to and worn by employees when working in areas where possible danger or head injury exists from impact, falling or flying objects, or from electrical shock and burns.

- Employees shall wear department approved eye and face protection where injury exists from flying objects, glare, liquid splashes, use of line trimmers, edgers, chemicals, grinding, sandblasting, and welding. Eye protection shall be kept in a sanitary and usable condition and shall be replaced when it becomes warped, scratched, or pitted.

- Department approved hearing conservation devices shall be provided to and worn by all employees working in areas where a danger of noise exposure exceeds acceptable levels.

- Employees shall wear footwear suitable to the type of work being performed. Safety boots or shoes shall be worn when required. Wearing of sandals, tennis shoes, loafers or similar footwear shall not be acceptable during working hours for employees serving in labor, maintenance, construction, or inspection positions.

- Department approved life jackets or buoyant work vests shall be worn by all employees when working over or near water where the danger of drowning exists.

- Department approved respiratory protection shall be worn in areas where dangerous air contamination, chlorine, gasses, vapors, fumes, dust, or other hazardous contaminants exist. Additional information regarding respiratory protection can be found in the *Respiratory Protection Program*.

- Employees required to work in or near the roadway shall wear high visibility clothing, garments, and/or reflective vests.

- Department approved fall protection devices, such as harnesses, lanyards, et., shall be used by all employees when working in an overhead position which may require use of both hands and when there is a danger of falling.

- Protective clothing and equipment shall be used and maintained in accordance with manufacturer's recommendations.

PERSONAL PROTECTIVE EQUIPMENT – FIRE & EMS SERVICES

- Full protective clothing shall meet NFPA standards and include the following: approved helmets, pants, coats, gloves, hoods, and boots.

- Full protective clothing shall be worn at all times while engaged in any fire fighting activities or other emergencies unless a specific exception is made by departmental policy or the officer in charge deems safety and efficiency are not jeopardized.

- An approved self-contained breathing apparatus (SCBA) shall be provided for and used by all personnel when working in areas where the atmosphere is hazardous, suspected of becoming hazardous, or may rapidly become hazardous. Additional information regarding respiratory protection can be found in the *Respiratory Protection Program*.

- Approved gloves shall be worn when engaged in fire fighting, overhaul, training with the hose and ladders, using hand or power tools, and any other situation where injuries to the hand may occur.

- Eye and face protection appropriate for the given hazard shall be provided for and used by all personnel exposed to that hazard.

- Hearing protection shall be provided for and used when exposed to noise levels that exceed acceptable levels except in situations where the use of such protective equipment would create an additional hazard to the user.

- Personnel who perform emergency medical care or are otherwise likely to be exposed to blood or other body fluids shall be provided with and use emergency medical garments, emergency medical face protection devices, and emergency medical gloves. For additional information, please refer to the *Bloodborne Pathogen Safety* section of this manual.

- Personnel who engage in operations during hazardous material emergencies that may expose them to known chemicals in vapor form or unknown chemicals shall be provided with and use vapor-protective suits.

- Personnel who engage in operations during hazardous material emergencies that may expose them to known chemicals in liquid-splash form shall be provided with and use liquid-splash suits.

- For additional guidance in the use of personal protective equipment, please refer to the *Personal Protective Clothing and Equipment – General Requirements* section of this manual.

PERSONAL PROTECTIVE EQUIPMENT – LAW ENFORCEMENT

- Suitable eye and hearing protection shall be worn when personnel are firing weapons during training and other special operations.

- When provided by the (ENTITY NAME), body armor shall be worn by all officers when on duty or during special operations.

- Reflective vests and gloves shall be worn when directing traffic. A lighted baton is recommended when directing traffic any time between one hour before sunset and one hour after sunrise, or anytime during inclement weather.

- Leather gloves or their protective equivalent shall be worn when searching persons or places where sharp objects may reasonably be encountered.

- Disposable gloves shall be worn when handling any persons, clothing or equipment with bodily fluids on them. Masks in combination with eye protection devices shall be worn whenever splashes, spray, spatter, or droplets of potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated. For additional information, please refer to the *Bloodborne Pathogen Safety* section of this manual.

- Plastic mouthpieces or other authorized barrier/resuscitation devices shall be used whenever an officer performs CPR or mouth-to-mouth resuscitation.

- Personal protective equipment such as neoprene gloves, rubber boots, shoe covers, rubber aprons, and protective eyewear shall be used as necessary when handling flammable, corrosive, caustic, or poisonous chemicals.

- Protective gear including helmets, vests, hoods, goggles, gloves, elbow/knee pads shall be utilized during tactical operations and by special units as needed.

- For additional guidance in the use of personal protective equipment, please refer to the *Personal Protective Clothing and Equipment – General Requirements* section of this manual.

GENERAL RULES FOR MOTOR VEHICLE AND EQUIPMENT OPERATION

- Employees who are authorized to operate (ENTITY NAME) vehicles or personally owned vehicles on (ENTITY NAME) business, must have a valid Texas driver's license for the class vehicle they operate and must notify their supervisor immediately should the license be suspended or revoked.

- Motor vehicle record checks will be conducted annually on all employees who have driving or motorized equipment operation responsibilities.

- The certificate of insurance coverage and other required documents, along with accident forms should be carried in all (ENTITY NAME) owned vehicles.

- All drivers of (ENTITY NAME) vehicles must be familiar with and abide by all applicable state, federal, and local traffic regulations.

- All drivers/operators shall be responsible for the proper care and use of vehicles and motorized equipment. This includes maintaining (ENTITY NAME) vehicle/motorized equipment interiors and exterior, regularly servicing these items and reporting maintenance needs to the supervisor.

- A driver/operator shall not permit any unauthorized persons to drive, operate or ride in or on a (ENTITY NAME) vehicle. Riders shall not be allowed on running boards, tailgates, fenders, bumpers, atop cabs, on tow bars, or towed equipment. (Exceptions may include operator trainees and mechanics sharing operator positions.)

- Every accident involving personal injury or property damage shall be reported to your supervisor immediately.

- Where seat belts are provided, they shall be worn by all occupants. The size or operation of the vehicle or equipment does not excuse the operator from the seat belt requirement.

- Equipment on all (ENTITY NAME) motor vehicles must conform to state, federal, and Department of Transportation (DOT) regulations.

- Unsafe and discourteous driving practices such as ‘road-hogging’, disregarding the rights of pedestrians, violating traffic regulations, and deliberate recklessness of any kind are prohibited.

- Getting in or out of a vehicle/mobile equipment while it is in motion is prohibited, as is riding anywhere on the vehicle/mobile equipment not designed for passengers. Do not get out of a vehicle/mobile equipment and leave the motor running, or driver/operate with a door ajar.

- Personnel should maintain three points of contact with mobile equipment when entering and exiting to help in maintaining balance if a slip occurs. Many injuries occur as a result of slips and using three points of contact will help control this exposure. In addition, the condition of the handrails, steps, etc. should be inspected regularly.

- Smoking is prohibited in any areas where fueling is being performed.

- Except in emergencies, gasoline must not be carried inside passenger cars or the cabs of trucks. Gasoline shall be transported in approved safety containers and sealed tight to prevent the leakage of gasoline or gasoline vapors.

- Garage doors must be opened for ventilation whenever a motor vehicle engine is running to help prevent the accumulation of carbon monoxide gas.

- Keys shall be removed from unattended vehicles and equipment. Doors should be locked for security purposes.

- Driving a vehicle under the influence of alcohol or any controlled substance will not be tolerated. Never attempt to perform work or drive a vehicle when you are impaired by alcohol, medication, or drugs, including over-the-counter or prescription medications.

- Picking up hitchhikers is dangerous and prohibited.

- Before starting out in your vehicle in the morning, clear all windows of any frost, ice, or dew. Cleaning only a small place on the windshield does not allow for proper visibility.

- Driving is a full time job. Drivers should not engage in other activities, such as dialing a telephone, while operating a vehicle. The vehicle should be pulled off the road and stopped before performing these types of activities.

- Driving at the maximum posted speed limit can be too fast for safety in some situations. The drivers of all vehicles must use good judgment and proceed at a pace suitable to conditions of the vehicle, road, traffic, and weather.

- All vehicle cabs should be kept clean to reduce distractions to drivers and interference with the operation of the vehicle or equipment.

Backing

- When possible, park so that backing is not required.

- Extreme caution shall be exercised when backing any vehicle. If another employee is present, he/she shall act as a spotter to assist the driver in backing safely. Drivers shall stop immediately if they lose sight of the spotter.

- Backup alarms are a useful warning device and should be used when possible, especially on larger vehicles and equipment that may severely restrict your view to the rear of the vehicle. If an alarm is not present, the operator should honk his horn to warn others of the moving vehicle.

Stopping on Roadways

- When it is necessary to stop on the roadway, extreme caution shall be used.

- A rotating beacon light shall be used, if so equipped.

- Tail lights/emergency flashers shall be used.

- If work is in progress, traffic control devices shall be used in accordance with the Texas Manual on Uniform Traffic Control Devices, Part VI. Please see additional information in the *Work Zone Traffic Control Safety* section of this manual.

Inspection of Vehicles and Equipment

- Drivers/operator shall utilize equipment checklists to inspect vehicles and equipment to determine if they are in good operating condition *prior* to operating the vehicle.

- The driver/operator shall determine that brakes are in good operating condition before using the vehicle or equipment. If brakes are not working properly, they must be corrected before use.

- The driver/operator shall report all defects promptly. Items that affect safety shall be repaired prior to continued use.

- For additional information, please refer to (ENTITY NAME) Vehicle Operator Standards.

Powered Carts & Low-Speed Vehicles

Powered carts and other low-speed vehicles (LSV) such as golf carts, 'Mules', 'Gators', etc. should be driven with special care. This classification of vehicle includes those which are electric-, gasoline-, or diesel-powered (LSV) and may or may not be licensed to operate on public roadways. Vehicles not licensed (registered) by the Texas Department of Public Safety as an on-road vehicle should not be driven on public roadways.

The following operating rules apply to powered carts & LSV:

- Only drivers authorized by (ENTITY NAME) and trained in the safe operation of powered carts and LSV shall be permitted to operate such vehicles.

- All prospective cart or LSV operators must receive training before being allowed to operate a powered cart or LSV.

- Seatbelts must be worn by all vehicle occupants at all times. The maximum number of passengers is equal to the number of seatbelts in the vehicle. All passengers must be in a seat while the cart is moving - no exceptions. Drivers violating this safety rule may have their driving privileges suspended or revoked.

- Operators and passengers shall keep arms and legs inside the cart or LSV at all times and shall not jump on or off of moving vehicles.

- Powered carts or LSV shall be driven on facility vehicle traffic areas whenever possible. If a sidewalk must be used, the cart speed should not exceed that of the pedestrian traffic.

- Carts or LSV which are capable of reaching 25 mph or higher must remain in facility vehicle traffic areas and should not be driven on the sidewalks or "pedestrian only" areas.

- Operators shall be familiar with, and observe all established traffic laws.

- Materials and equipment shall be properly secured so that they will not shift or fall off of moving carts or LSV.

- Powered carts & LSV shall not be operated at night without properly working head and taillights.

- Be extremely cautious while making turns and while driving on uneven surfaces to avoid tipping in carts.

- Parking a powered cart or LSV should follow the same rules as a motor vehicle and is prohibited in the following areas:

- Fire Lanes
- Designated no parking areas
- Adjacent to building entrances or exits

SOLID WASTE, REFUSE, AND RECYCLING COLLECTION SAFETY

Personal Protective Equipment

- Gloves shall be worn by all employees while handling cans, bags, boxes, carts, etc.

- Protective eyewear shall be available and worn whenever items that could cause an eye injury are being handled.

- Appropriate footwear with anti-slip soles shall be worn. Leather work boots with good ankle support are recommended.

- High visibility clothing shall be worn by employees at all times when working in or around the roadway.

- Rainwear should be provided for protection from the rain.

Material Handling

- Size up the load and the weight to be lifted. This is done by holding the container at the top and rocking it back and forth. It if is too heavy, get help.

- Get a firm grip on the handle or top edge of the container with one hand, tip the container, then grasp the bottom edge of the container with the other hand.

- If the waste is in boxes, check the weight and condition of the box before lifting. Grasp the box with the fingers and palm of one hand around the top of one corner of the box; place the other hand at the bottom near the opposite corner.

- When handling plastic bags, always grab bags by the neck. Sharp objects can protrude through the bag and puncture hands and arms.

- If the container is in an area where there are potholes or the ground is uneven, request the assistance of a co-worker and use extra caution before attempting to lift.

- Tips for safe lifting:

    - Size up the load
    - Keep feet apart, establish a good base of support
    - Bend at the knees and hips, not at the waist
    - Get a good grip
    - Keep the load close
    - Lift with your legs
    - Pivot, do not twist your body

Control of Falls

- Jumping on or off a moving truck is prohibited. When exiting or entering the truck, three points of contact should be maintained at all times to provide adequate control.

- To get off the platform (step) at the back of the truck, wait until the truck has come to a complete stop. Make sure you have good footing when you reach the ground. When exiting the vehicle, get a good grip on the hand holds and exit the cab or step backwards.

- Step off onto wet grass or icy surfaces slowly and carefully.

- Make sure your foot has made good contact with the platform or step before getting back into the truck. Signal the driver to move only when you are ready.

- Always look in the direction that the truck is traveling. Watch out for low hanging tree limbs, brush, utility poles, etc. Do not ride the platform with your body leaning out beyond the body of the truck any farther than necessary.

- Do not lie, sit, or squat on the platform while the truck is moving.

- Never ride the platform while the truck is backing up, exceeding 10 miles per hour, or traveling more than 0.2 miles without stopping. Spotters shall be used anytime a truck is backing up.

- Watch for oil or grease on platforms, streets, and sidewalks.

Packer Operation

- Never activate the packer while standing in front of it; always stand to the side with head and eyes turned away.

- Never enter the packer container.

- One crew member should be solely responsible for operating the packing mechanism.

- The packer operator must be completely familiar with the location and operation of all controls and know how to stop the packer in an emergency.

- Do not overload the hopper or stick hands in while the packer is operating.

- The packing mechanism should be inspected and serviced according to the manufacturer's operating manual.

Vehicle Operation and Condition

- A spotter shall always be used anytime a truck is backing up. Standard, agreed upon hand signals should be used. Anytime the spotter leaves the driver's view in the mirrors, the driver must stop immediately.

- Trucks must be equipped with operational backup alarms.

- The driver will use flashing lights whenever collections are being performed.

- Know your vehicle's height and width clearances and be cautious near low hanging wires and tree limbs.

- Keep your truck in good condition. A pre-trip inspection shall be conducted each day.

- A fire extinguisher, first aid kit, and water shall be provided on the trucks.

- Keep bottles, cans, boxes, and other debris off the floor of the cab.

ELECTRICAL SAFETY

- Keep electrical cables and cords clean and free from kinks. Never carry equipment by its cords.

- Keep cords out of walkways to prevent damage and trip and fall hazards.

- All electrical tools, equipment, extension cords, etc. shall be inspected on a regular basis. All faulty equipment shall be reported immediately to your supervisor. Lockout or tag the equipment so that others are aware the equipment is damaged. The tool, equipment, or

cord shall not be used if it has any defects, such as bad insulation, missing grounds, loose prongs, etc.

- All electrical equipment shall be properly grounded.

- Extension cords should not be used in wet or damp areas. For adequate protection, a Ground Fault Circuit Interrupter (GFCI) should be used to protect employees in wet or damp locations.

- All circuit breakers shall be identified as to use. Maintain clear access to electrical panels and main power sources at all times. Electrical panels and boxes should be securely fastened.

- All electrical panel boards, boxes, disconnects, switch gears, etc. shall be covered or isolated to prevent accidental contact with energized parts and to protect equipment and wiring from potential contamination.

- Before work begins at a jobsite, the location of electrical lines (underground and above) shall be determined and precautions taken to prevent accidental contact.

- Electrical Lockout/Tagout procedures shall be used when circuits or electrical equipment are being worked on. See *Lockout/Tagout Safety* in this manual.

- Electrical cables passing through work areas shall be covered or elevated to protect them from damage, which could create a shock hazard.

- Metal ladders shall not be used when working near electrical circuits.

- Exposed light bulbs or fluorescent tubes shall be guarded or recessed in reflectors to prevent accidental breakage.

- To aid in the prevention of electrical shock, 120 volt, single phase, temporary receptacles used at work sites should be used with a GFCI. If a GFCI is not available, an assured equipment grounding conductor program may be used for added protection. Another option in protection from electrical shock involves the use of double insulated equipment.

- Employees involved in activities around hazardous energy levels should know cardiopulmonary resuscitation (CPR) and rescue procedures.

LOCKOUT/TAGOUT SAFETY PROCEDURES

Definitions

- ***Lockout and tagout*** are methods of preventing equipment from being set in motion unexpectedly, which in turn may endanger workers.

- ***Lockout*** is the placement of a lockout device on an energy isolating device to ensure that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

- ***Lockout device*** is a device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position thus preventing the energization of a machine or equipment.

- ***Tagout*** is the placement of a prominent warning device, such as a tag, on an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed. Does not offer the physical protection of lockout.

- An ***energy isolating device*** is a mechanical device that physically prevents the transmission of release of energy. These devices can include, but are not limited to, electrical circuit breakers, disconnect switches, block valves, slip blinds, slide gates, etc.

- ***Energy source*** refers to any courses of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or any other energy.

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

- An ***authorized employee*** is a person who uses locks and/or tags on machines or equipment while performing service or maintenance activities. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment which must be locked and/or tagged.

Employee Responsibilities

All equipment should be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Employees should never attempt to operate any switch, valve, or other energy isolating device that is locked or tagged out. Employees should be trained on the importance of lockout/tagout procedures. Only authorized employees who have been trained in the procedures should be allowed to apply lockout or tagout.

Preparations for Lockout/Tagout

- Obtain the lockout/tagout procedures for the equipment. After a review of the procedure, determine if changes may be necessary in the procedure.

- Identify all affected employees that may be impacted by the impending lockout/tagout.

- Obtain necessary supplies, such as locks, tags, etc. that may be needed during the lockout or tagout.

Sequence of Events to Implement Lockout/Tagout

- Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

- The authorized employee should refer to the (ENTITY NAME) written procedures to identify the type and magnitude of the energy that the machine or equipment utilizes. After

identifying the type of energy source, the authorized employee should assure that he/she understands the hazards of the energy source and knows the methods to control the energy source.

- If the machine or equipment is operating, shut it down by the normal stopping procedures (depress stop button, open switch, close valve, etc.).

- Deactivate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

- Use lock(s) and/or tag(s) as necessary to prevent the accidental or inadvertent operation of the energy isolating device(s).

- Any stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air pressure, steam pressure, gas pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

- To ensure that the equipment is disconnected from the energy source(s), the authorized employee should follow these listed steps:

- Check to make sure that no personnel are exposed to possible hazards

- Verify the isolation of the equipment by operating the push button or other normal operating control(s) or test to make certain the equipment will not operate

- Return the operating control(s) to the neutral or off position after verifying the isolation of the equipment.

- The equipment or machine should now be locked out.

Sequence of Events to Restore Machine or Equipment to Normal Operations

- Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

- Check the work area to ensure that all employees have been safely positioned or removed from the area.

- Verify that the controls are in the neutral position.

- Remove the lockout and/or tagout devices and re-energize the machine or equipment.

- Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

- Return or file used lockout and/or tagout devices.

Employee Training Requirements

- The employer should 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 the employees.

- Each authorized employee should received training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy sources, and the methods and means necessary energy isolation and control.

- Each affected employee should be instructed in the purpose and use of the energy control procedure.

- All other employees whose work areas may or may not be in an area where energy control procedures may be utilized should be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

BLOODBORNE PATHOGEN SAFETY

- Due to potential hazards associated with bloodborne pathogens that cause diseases such as hepatitis and HIV/AIDS, care shall be taken to eliminate contract with blood and body fluids.

- Universal precautions (treating all body fluids as potentially infectious) must be observed at all times.

- Preventative immunizations and vaccinations shall be offered to affected employees as required by *Texas Government Code, Chapter 607, Subchapter A, Section 607.004*.

- Use of appropriate gloves, gowns, faceshields, masks, and eye protection may be necessary to prevent potentially infectious materials from passing through or reaching an employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes. A specialized mask for administering CPR shall be used.

- Employees shall wash hands and other contaminated boy areas and remove all contaminated clothing immediately after administering the first aid.

- Employees shall immediately report all exposures to blood and body floods to their supervisor so post-exposure care can be initiated.

- Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures or contact with blood or potentially infectious materials.

- Infectious waste shall be placed in closable, leak-proof containers with proper labels and must be disposed of in a proper manner. Any used needles, syringes, etc. should be placed in an approved "sharps" container that will prevent accidental contact with the sharp edge.

FIRST AID

- All injuries, regardless of severity, shall be reported to your supervisor.

- Preplanning for a potential emergency situation is most valuable. All employees shall be aware of the medical services available and how to obtain them. Emergency phone numbers shall be posted in all work areas.

- Where first aid kits are supplied, employees shall be familiar with the location, contents, and the instructions given with the first aid kit. Each employee shall learn how to use this equipment so they can render treatment when needed.

- The contents of the first aid kits shall be inspected each month and expended items replaced. Personal medication shall not be kept in first aid kits.

- Where the eyes or body may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided for emergency use.

- Emergency eye wash and/or shower stations should be tested at least once per month to ensure proper working condition.

CONFINED SPACE SAFETY

- All potential hazards shall be evaluated prior to entry into a confined space.

- Only employees who have been properly trained on the hazards associated with confined space work shall be allowed to enter a confined space.

- If work is to be performed in a confined space, a written permit system shall be followed. The entry supervisor shall complete the written permit prior to entry to ensure that all safety equipment is in place and acceptable entry conditions are present.

- Before any entrance cover to a confined or enclosed space is removed, it shall be determined that there are no temperature or pressure differences or other hazardous conditions that may injure the employees removing the cover.

- No smoking shall be permitted in a confined space or near the entrance/exit area.

- When covers are removed from confined or enclosed spaces, the opening shall be guarded by a railing, temporary cover, or other temporary barrier.

- Before an employee enters a confined space, the internal atmosphere shall be tested for oxygen content, flammable gases and vapors, and potential toxic air contaminants. Approved and calibrated testing equipment shall be used to measure the concentration of the various gases.

- If an oxygen deficiency is found or if flammable or toxic gases or vapors are detected, the space shall be continuously tested and forced ventilation shall be used to maintain oxygen at a safe level and to prevent a hazardous concentration of flammable or toxic gases and vapors. If the confined space contains atmospheres that are immediately dangerous to life and health, a full facepiece pressure demand self-contained breathing apparatus (SCBA) or combination full facepiece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply will be used.

- Electric welding, gas welding, cutting, or any other hot work shall not be performed on the interior, exterior, or near the openings of any confined or enclosed space that may contain flammable or explosive gases or vapors until the space has been properly cleared. Monitoring shall be continuous during any hot work activities.

- If a hazard-increasing work activity is to take place in a confined or enclosed space (i.e., welding, painting, working with solvents and coating), the air in the space shall be continuously tested for the presence of flammable or toxic gases and vapors or insufficient oxygen. Forced ventilation shall be used as required.

- Before employees are allowed to enter a confined space, all electrical and mechanical energy sources that could affect the employees working in the space shall be physically rendered inoperative, locked out, and tagged. If required, the space shall be drained, vented, and cleaned.

- A properly trained attendant shall be stationed outside the confined space. The attendant shall maintain continuous communication with the employees authorized to be in the confined space. The attendant shall be able to recognize confined space hazards and changing conditions in the confined space that could affect employees in the space. In the event of an emergency, the attendant shall not enter the confined space but shall be able to summon emergency and rescue services.

- All employees required to enter a confined or enclosed space shall be equipped with a full body harness and lifeline monitored by a properly trained attendant. Other personal protective equipment and rescue devices may also be required depending on the situation.

- Compressed gas cylinders, other than breathing air, shall not be taken into a confined space.

- While work is being performed in an enclosed space, a person with CPR and basic first aid training shall be immediately available to render emergency assistance if there is

reason to believe that a hazard may exist in the space or if a hazard exists because of traffic patterns in the area of the opening used for entry.

- Prior to entry, necessary rescue personnel and equipment shall be available in the event of an emergency.

- Safe access to the confined space shall be maintained at all times. If possible, all cords, hoses, leads, etc. shall be routed through an entrance other than the employee access into the confined space.

- Even though public entities in the state of Texas do not fall under OSHA requirements, sections of the OSHA Standards should be reviewed for minimum industrial standards.

- For additional information concerning confined space requirements, refer to OSHA standard *29 CFR 1910.146* and the *Confined Space Entry Safety Program* found in this manual.

EXCAVATION AND TRENCHING SAFETY

- Before opening an excavation, all interferences such as trees, sidewalks, and foundations shall be removed or supported as necessary to protect employees and the public.

- The estimated location of utility and other underground installations that may be encountered during excavation work shall be determined before opening the excavation.

- When excavation operations approach the estimated location of underground installations, the exact location of the installation shall be determined by safe and acceptable means.

- While the excavation is open, underground installations shall be protected, supported, or removed to safeguard employees.

- Employees exposed to vehicular traffic shall wear high visibility vests or clothing.

- Refer to Work Zone/Traffic Control Safety procedures as described in this manual.

- A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet of lateral travel for employees. Ladders must extend three feet above the surface and be tied off if necessary.

- No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials.

- All mobile equipment (front end loaders, bulldozers, and dump trucks) shall be equipped with a warning device such as a backup alarm. When mobile equipment is operated adjacent to an excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be sloped away from the excavation.

- In excavations deeper than four feet with the potential for a hazardous atmosphere or oxygen deficiency, air testing shall be conducted before employees can enter an excavation and as often as necessary to ensure the atmosphere remains safe. Ventilation or respiratory protection may be needed to protect employees from harmful atmospheres.

- Daily inspections of the excavations and adjacent areas and protective systems shall be made by a competent person for evidence of situations that could result in a possible cave-in, failure of protective systems, hazardous atmospheres or other hazardous conditions. An inspection shall be conducted prior to the start of work, when there are changes in weather conditions, if the excavation has been left unattended for a period of time (such as lunch), and as needed.

- Employees shall not work in excavations in which there is accumulated water or in an excavation in which water is accumulating unless adequate precautions have been taken to protect employees. The precautions necessary to protect employees adequately can include special support or shield systems, water removal, or the use of a body harness and lifeline.

- Surface water shall be prevented from entering an excavation by utilizing diversion ditches, dikes, or other suitable means.

- Excavations subject to run-off from heavy rains shall require an inspection by a competent person.

- Excavated earth (spoil), materials, tools, and equipment shall be placed no closer than two feet from the edge of the excavation.

- Where employees or equipment are required or permitted to cross over excavations, walkways or bridges with standard handrails and guardrails shall be provided.

- When excavations are left open, warning devices, barricades, or guardrails shall be placed to adequately protect employees and the public.

- At the end of the workday, as much of the excavation as practical shall be closed.

- Mechanical excavating equipment that is parked or operating on streets or highways shall be protected by proper warning devices.

- Each employee in an excavation shall be protected from cave-ins by an adequate protective system (sloping, benching, shoring, or shielding), unless excavations are made entirely in stable rock or are less than five feet deep and examination of the ground by a competent person provides no indication of a potential cave-in.

- When choosing protective system, a competent person shall take into consideration soil type, vibration sources, previously disturbed soil, layered soil, presence of water, heavy equipment work adjacent to the excavation, limited work area, and other hazard increasing conditions.

- Sloping, benching, shoring or shielding for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

- A “competent person” as used in this section shall mean one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

- For additional information on excavation requirements, refer to OSHA standard *29 CFR 1926 Subpart P, Excavations* and/or *Excavation and Trenching Safety Program* found in this manual.

WORK ZONE/TRAFFIC CONTROL SAFETY

- Work zone safety is the adequate safeguarding or protecting of pedestrians, motorists, utility workers and equipment by the use of adequate barriers, warning signs, lights, flags, traffic cones, high level standards, barricade rope, flaggers, etc. on approaches to work areas, excavations, open manholes, parked equipment, etc.

- Work zone traffic control is accomplished by the use of informative and protective devices, keeping in mind that a safe installation requires the use of these devices in relation to the location of the workers and equipment involved. The use of these devices must be coupled with proper planning, design, installation, inspection, maintenance and the use of good common sense. It is of utmost importance that the work area be properly identified and that warning devices clearly convey the message to the traveling public well in advance of arrival at the work area.

- The public must be warned in advance, then regulated and guided through or around the work area. Proper work area protection shall be planned to ensure the safety and protection of the public, the worker, and the equipment.

- If street construction or repair work is to be done, preparations will be made to ensure vehicle and pedestrian safety before work is allowed to begin by use of a traffic control plan.

- If traffic is affected by the operation, proper signs must be used in advance of the work area, and the traffic control signs in and around the affected area are to be correctly placed and maintained for the duration of the period when work is being performed and traffic obstructions exist.

- When barricades and signs are used overnight, supervisors will examine the work area for proper placement at the end of the workday.

- All employees working in or near the roadway will wear retro-reflective vests or suitable garments marked with or made of retro-reflective or high visibility material while at the work site. Garments worn at night must be made of retro-reflective material.

- Lighted barricades will be used whenever possible for overnight protection.

- Where traffic must be periodically stopped or obstructed by workers or equipment in a traveled portion of a roadway, a flagger wearing a reflective vest may be stationed. If lack of manpower exists, the roadway must be closed and the traffic detoured.

- Flaggers will be used to slow or direct traffic where the approach to the work area does not provide adequate visibility to drivers. The use of sign paddles (Stop/Slow) is preferred and should be used if available. During night operations, the flagger area should be illuminated and retro-reflective signs used.

- All plates used to cover holes in the street on a temporary basis are to be spiked in place.

- In any case where streets are significantly obstructed or closed for any period of time, the police, fire and other relevant departments will be notified of the situation and told approximately how long the closure will be in effect.

- When pedestrian traffic is impeded, barricades, restrictive tape, rope or other restraint will be used to keep the public from the work site.

- Holes in the sidewalk or parkway that must be left open will have perimeter protection. Protection of these areas will be in the form of physical barriers and warning signs.

- For additional information, please refer to the most current publication of the *Texas Manual for Uniform Traffic Control Devices, Part VI*. A copy of this manual is available at www.dot.state.tx.us.

LAW ENFORCEMENT SAFETY

Although additional policies, procedures, and general orders typically exist to ensure the safety of law enforcement officers, the following rules were established as minimum guidelines for those items often overlooked with regard to safety.

Patrol Safety

- Wear all department-issued body armor.
- Have an assist officer present when making arrests, if possible.
- Follow department policy and procedure on response to resistance issues.
- Wait for backup to arrive, if possible.
- Always be alert and prepared during an incident.
- Approach all incident scenes anticipating any possible dangers.
- During foot pursuits, swing wide around corners of buildings or other blind areas.
- Do not shine a flashlight directly in front of your body; hold it to your side.
- Handcuff all subjects before proceeding with your search.

Traffic Control Safety

- Be aware of the terrain and associated exposures in the area.
- Never turn your back on approaching traffic.
- Wear reflective vests and gloves at all times.
- When directing traffic, position yourself to limit your exposure and in a way that makes you as visible as possible.
- Use clear and easily understood signals with the drivers.
- Maintain communication with other officers assisting in the traffic control.
- Strike flares away from your body and be aware of possible burn hazards. Flares should be extinguished by smothering them in the dirt.
- Establish a safety zone at accident scenes by posting cones, lighting flares, positioning flaggers, and/or parking your vehicle to divert traffic.

Vehicle Stop Safety

- Position the patrol car behind the vehicle you are pulling over to provide a barrier between you and oncoming traffic.
- Wait until oncoming traffic is clear before exiting your vehicle.
- As you approach the vehicle, observe the driver and passengers by looking in the subject's side or rear view mirrors.
- Minimize your exposure to the driver and passengers by standing just to the rear of the subject's vehicle.
- Keep your attention on the subject(s) during the length of the vehicle stop; stay alert.

Search and Seizure Safety

- Follow established stance methods and search patterns.
- When there is indication that the subject may be concealing a sharp or pointed object, the officer shall direct the subject to remove the object or the article of clothing which contains it.
- During vehicle searches, officers must be cognizant of reaching into areas that have not first been viewed.

Suspect Transport Safety

- Follow the Department's handcuffing policy.
- Subjects will be placed in the back seat with the seat belt fastened.
- Subjects will not be left unattended in a patrol car when at all possible.
- All non-police personnel will be frisked/searched for weapons before being permitted into the patrol car.

Firearm Safety

- Do not modify your weapon, in any way, without department approval.
- Unload and lock the firearm before handing it to another person. Do not point the muzzle of the firearm toward anyone when handing it to another person. Do not throw a firearm.
- Keep your finger out of the trigger guard until you are ready to fire.
- Do not handle a firearm if you are taking medication from a container whose label indicates that the medication "may cause drowsiness or dizziness" or other adverse side effects.
- Do not point a firearm at anyone unless you intend to use deadly force in the line of duty.
- Leave the firearm in its holster or rack until it is needed.

- Do not conduct firearm practice alone.
- When unloading the firearm, do not try to catch the casings or magazine.
- Keep the muzzle pointed toward the target when loading and unloading the firearm.
- Return your weapon to its holster or rack when finished firing.
- Anytime a firearm is discharged in the line of duty, it must be reported to your supervisor immediately.

Shooting Range Safety

- Do not anticipate a command.
- Follow the instructions of the firearm instructor.
- Do not turn around while holding a firearm in the firing line.
- Wear eye and hearing protection when firing.
- Only instructors will be allowed to talk on the firing line. Other personnel must not talk while at the firing line.
- Clear any weapons malfunctions and continue course of fire. Report malfunctions once the line is made safe by the firearm instructor. Do not attempt to re-fire the weapon with the shell that misfired.
- Do not go in front of the firing line until it has been cleared and the command is given to go forward.

Vehicle Inspection

- At the beginning of each shift, each officer will inspect their assigned patrol vehicle documenting the results of the inspection.
- Any deficiencies that prevent the vehicle from being operated safely will be noted on the vehicle inspection report and the corrective action notice report. The report will then be turned in to your supervisor for review.
- Vehicles that have been deemed inoperable will not be driven for patrol duties until the deficiency is corrected.
- Officers should understand the basic operation requirements of their assigned vehicle and monitor those that can be viewed when refueling. Items that should be checked include tires, oil, transmission fluid, windshield washer fluid, coolant, etc.

Emergency Vehicle Operation

- Warn other vehicular traffic by using siren, horns, and warning lights when en-route to an emergency. Follow all laws as referenced in the Texas Transportation Code.
- Cover the brake with your foot as you are driving when you feel there is possible danger.
- Slow down and be prepared to stop when approaching an intersection.
- Proceed past a stop signal or a stop sign only after coming to a complete stop first.
- Operate with due regard for the safety of others.
- Do not push vehicles through intersections into traffic.
- Low beam headlights must be on during emergency responses.
- Slow down when you are followed by a tailgater.
- Do not pass other emergency vehicles during an emergency response. When passing is necessary, the passing arrangement must be made through radio communications.
- Follow local policy on emergency driving and the traffic laws related to emergency vehicle operations.
- Avoid backing of vehicles when possible. Where backing up is necessary, use a spotter to guide you. When a spotter is unavailable, dismount and walk around the vehicle to ensure that you have an unobstructed path before backing.

- Consider backing in to parking spots to allow for safer and faster response without backing, should an emergency arise.

FIRE & EMS PERSONNEL SAFETY

Personnel Safety on Vehicles

- All personnel riding on the apparatus must be seated with seat belts fastened while the apparatus is moving.
- Do not ride or allow passengers outside the cab or canopy of any department vehicle while in motion.
- Do not open or attempt to exit through the doors of the apparatus while it is in motion.
- Where backing up is necessary, use a spotter to guide you. When a spotter is unavailable, dismount and walk around the vehicle to ensure that you have an unobstructed path before backing. Backup alarms should be in place and operational at all times. If the backup alarm is not functioning, the operator must honk the horn while backing.
- Ensure steps and hand rails/holds are used when entering or exiting apparatus/vehicles. Personnel should maintain three points of contact when entering or exiting apparatus/vehicles.

Fire Station Safety

- Mop or clean up any oil, hydraulic fluid, water, grease or other fluids from floors, bays or walkways in the apparatus storage area immediately upon detection.

- Do not allow extension cords or other electrical power cords across doorways or aisles, between desks or under vehicles.
- Clean up all spills immediately, especially wet spots around drink and coffee machines, in bathrooms, kitchens and hallways.
- Do not point a charged compressed air hose at anyone or use it to clean your clothing or the work area.
- Do not use oxygen as a substitute for compressed air.
- Do not stand on a ladder that wobbles or that leans to the left or right of center. A ladder or a step stool should be used when retrieving items above your head. Chairs, buckets, boxes, etc. should not be used in place of ladders.
- All wet or slick floors should be marked with a yellow “Wet Surface” sign. Employees shall avoid such areas until the signs are removed.
- Do not run on stairs or steps. Steps should be taken one at a time.
- Handrails will be used when using stairs or ramps.
- Do not block your own view by carrying large or bulky objects; use a dolly or a hand truck, or get assistance from another employee.
- Do not place a ladder at a blind corner or doorway without diverting foot traffic by blocking or roping off the area.
- Do not jump from trucks, platforms, ladders, roofs or other elevated places.
- Horseplay will not be tolerated.
- Inspect all tools prior to use. In addition, always use the proper tool for the job.
- Only activities authorized by the department will be allowed for the purpose of physical fitness.
- Proper housekeeping must be maintained throughout all facilities at all times.

Search and Rescue Safety

- Firefighters must operate in teams consisting of a minimum of two firefighters.
- Firefighters must not enter a burning structure without prior approval from their supervisor or the incident commander.
- Assume that all downwind or confined atmospheres encountered at a search and rescue scene are contaminated unless your supervisor or incident commander has told you otherwise.
- Use SCBA or supplied air respirators during extraction unless your supervisor or incident commander has confirmed that the atmosphere is safe.

Fire Ground Safety

- When arriving at the fire scene, firefighters must not remove their seatbelts until the apparatus has come to a complete stop.
- Do not get off the apparatus unless you have been specifically told to do so by the apparatus officer.
- Use steps and handrails/holds when entering or exiting apparatus and maintain three points of contact at all times.
- Do not run when working at fire scenes.
- Do not freelance; always work in teams of two and do not separate for any reason.
- Do not enter a structure fire by yourself for any reason.

- Never enter a burning structure if you are not wearing your SCBA.
- Prior to entering a burning structure, you must let the incident commander know what your intentions are by contacting him by the radio or by telling him face-to-face.
- Prior to entering a burning structure, the hose line must be opened and operationally tested outside the structure in order to ensure it is fully functional (charged); pull back on the nozzle valve handle to the “open” position and allow air to escape to the point at which a solid stream of water is flowing from the nozzle. Do not enter a burning structure without the protection of a charged hose line.
- Firefighters must use full protective clothing, including hoods, gloves, SCBA, etc. for interior firefighting.
- Firefighting teams within a burning structure must have constant communication between each other and the incident commander outside the structure.
- If, for any reason, one member of a team must leave the interior of a structure, both firefighters must leave the structure.
- Do not straddle charged hose lines.
- Open valves to charged hose lines slowly to prevent injuring the firefighters at the end of the hose.
- Before shutting down any charged lines or when a low water situation exists, the pump operator must notify the firefighters at the working end.
- Firefighters operating in or near streets or roads must wear their helmets and reflective traffic vests or full protective clothing for visibility to oncoming traffic.
- When utilizing pike poles to clean out hot spots or while conducting salvage and overhaul operations, do not pull the debris down toward your body; push it down and away from your body.
- SCBAs must be worn during all phases of firefighting, salvage and overhaul unless the incident commander tells you otherwise.

Vehicle Fire Safety

- Never approach vehicle fires without using full protective equipment clothing, including hoods, gloves, SCBA, etc.
- Prior to attacking a vehicle fire, open and operationally check the hose line from a safe distance to be sure it is fully functional; pull back on the nozzle valve handle to the open position and allow air to escape to the point at which a solid stream of water is flowing from the nozzle.
- Use the wheel blocks to chock the wheels of the burning vehicle, when possible, to prevent it from rolling.
- When possible, approach vehicles fires upwind, downhill, and in a low crouch with the hose nozzle opened to the “full fog” position.
- Only open hoods open when there is another firefighter present with a charged and tested hose line, standing by to attack the potential flare up of fire once the hood is opened.

Emergency Vehicle Operation

- Warn other vehicular traffic by using sirens, horns and warning lights when en-route to an emergency. Follow all laws as referenced in Texas Transportation Code.
- Cover the brake with your foot as you are driving when you feel there is possible danger.
- Slow down and be prepared to stop when approaching any intersection.
- Proceed past a stop signal or a stop sign only after coming to a complete stop first.
- Operate with due regard for the safety of others.

- Do not push vehicles through intersections into traffic.
- Low beam headlights must be on during emergency response.
- Slow down when you are followed by a tailgater.
- Do not pass other emergency vehicles during an emergency response. When passing is necessary, the passing arrangement must be made through radio communications.
- Follow your local policy on emergency driving and the traffic laws related to emergency vehicle operations.
- Avoid backing of vehicles when possible. Where backing up is necessary, use a spotter to guide you. When a spotter is unavailable, dismount and walk around the vehicle to ensure that you have an unobstructed path before backing.

BACK INJURY PREVENTION & MATERIAL HANDLING

Back injuries are prevalent and continue to be one of the leading causes of on-the-job injuries in the workplace. The following procedures are designed to prevent injury and disability to employees; decrease lost productivity due to accidents and injuries; and, decrease costs associated with these types of injuries.

Common Causes of Back Injuries

- Prolonged positions
- Poor posture
- Poor ergonomics
- Improper lifting/lifting too much
- Twisting while lifting
- Reaching while lifting
- Slips/trips and falls
- Vehicle and equipment entry and exit

Safe Lifting Principles

The following steps should be taken prior to lifting, handling, or carrying materials:

- Prior to beginning to lift or carry, check to ensure that the walkway is clear of all obstacles.

- Carefully check the object's weight and center of gravity.

- Face the object and get as close as you can with feet slightly apart and the head and neck facing forward. Grip the object firmly and hold it as close to your body as possible.

- Bend at your knees, not at your waist.

- Use your legs to bring you to a standing position, making the lift smoothly and under control.

- Do not twist your body when lifting or lowering.

- If necessary, obtain assistance in lifting heavy objects by utilizing additional personnel, power equipment, or other types of assistive lifting devices.

    - When two or more persons carry a heavy object that is to be lowered or dropped, there shall be a pre-arranged signal for releasing the load.

    - When two or more persons are carrying an object, each employee, if possible, should face the direction in which the object is being carried. Crouch or squat with the feet close to the object to be lifted; secure good footing; take a firm grip; bend the knees; keep the back vertical; and lift by bending at the knees and using the leg and thigh muscles. Employees shall not attempt to lift beyond their capacity. Caution shall be taken when lifting or pulling in an awkward position.

- Material shall not be thrown from place-to-place or person-to-person.

FIRE PREVENTION & LIFE SAFETY

These procedures address specific exposures and prevention methods related to fire prevention and the life safety of employees.

Management Responsibilities

- Ensure all fire prevention methods are established and enforced.
- Ensure fire suppression systems such as sprinklers and extinguishers are periodically inspected and maintained in working order.
- Train supervisors to use fire extinguishers for incipient (developing) fires.
- Train employees on evacuation routes and procedures.

Supervisor Responsibilities

- Closely monitor the use of flammable materials and liquids.
- Train assigned employees in the safe use, storage, and handling flammable materials.
- Ensure flammable material storage areas are properly maintained.

Employee Responsibilities

- Use, store, and transfer flammable materials in accordance with provided training and policy.

- Do not mix flammable materials.
- Immediately report violations of this program to a supervisor.

Potential Hazards

- Fire and explosion hazards can exist in almost any work area. Potential hazards include, but are not limited to:
- Improper operation or maintenance of gas-fired equipment
- Improper storage of use of flammable liquids
- Smoking in prohibited areas
- Accumulation of trash and debris
- Unauthorized 'hot work' operations

Hazard Prevention and Control

All nonessential ignition sources must be eliminated where flammable liquids are used or stored. The following is a list of some of the more common ignition sources:

- Open flames, such as cutting and welding torches, furnaces, matches, and heaters, should be kept away from flammable liquids. Cutting or welding on flammable liquids equipment should not be performed unless the equipment has been properly emptied and purged with a neutral gas, such as nitrogen.

- Electrical sources of ignition, such as DC motors, switches, and circuit breakers should be eliminated where flammable liquids are used, handled, or stored. Only approved, explosion-proof devices should be used in these areas.

- Mechanical sparks produced as a result of friction should not be used near flammable liquids.

- Static sparks generated as a result of static electricity. Every effort should be made to eliminate the possibility of static sparks including proper bonding and grounding of tools and equipment.

Removal of Incompatibles

Materials that can contribute to a flammable liquid fire should not be stored with flammable liquids. Examples include oxidizers and fertilizers stored near petroleum-based products.

Control of Flammable Gases

Generally, flammable gases pose similar fire hazards as flammable liquids and their vapors and many of the same safeguards also apply. Other properties, such as toxicity, reactivity, and corrosivity must also be taken into consideration as a flammable gas could produce toxic combustion products.

Fire Extinguishers

A portable fire extinguisher is the "first aid" device and is very effective when used while a fire is small. The use of an extinguisher that corresponds to the class of fire, by a trained person, can save both lives and property. Portable fire extinguishers must be installed in all workplaces, regardless of other firefighting measures. The successful performance of an extinguisher in a fire situation largely depends on the proper selection, inspection, maintenance, and distribution.

- **Classifications of Fire Extinguishers**

Fires are classified into five general categories, depending upon the type of material or fuel involved. The type of fire determines the type of extinguisher to be used to extinguish it.

- ***Class A*** fires involve combustible materials such as wood, paper, and cloth, which produces glowing embers or char.

- ***Class B*** fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids, which must be vaporized for combustion to occur.

- ***Class C*** fires involve live electrical equipment or materials near electrically energized equipment.

- ***Class D*** fires involve combustible metals such as magnesium, zirconium, potassium, and sodium.

- ***Class K*** fires involve cooking fats and oils found in deep fat fryers or other cooking appliances such as solid fuel char-broilers.

In many cases, areas will be equipped with an 'ABC'-type extinguisher, which can be used for wide variety of common fires.

- **Location and Identification of Extinguishers**
  Extinguishers should be conspicuously located and readily accessible for immediate use in the event of a fire. Generally, extinguishers will be placed along normal paths of travel and egress. Wall recesses and/or flush-mounted cabinets should be used whenever possible.

  Extinguishers should be clearly visible. In locations where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers and the arrow will be marked with the extinguisher classification.

  If extinguishers intended for different classes of fires are located together, they will be marked to ensure the proper class of extinguisher is selected. Classification markings will be located on the front of the shell above or below the extinguisher nameplate and should be legible from a distance of three feet.

- **Condition of Extinguishers**
  Portable extinguishers will be maintained in a fully charged and operable condition and kept in their designated locations at all times when not being used. When extinguishers are removed for maintenance, inspection, or testing, a fully charged and operable replacement should be provided.

- **Mounting and Distribution of Extinguishers**
  Extinguishers should be installed on hangers, brackets, in cabinets, or on shelves, no more than 42-inches above the floor.

  Extinguishers should be distributed such that the amount of time required to travel to the extinguisher and back to the fire does not allow the fire to get out of control. Generally, the travel distance for Class A and Class D extinguishers should not exceed 75 feet; Class B extinguishers should not exceed 50 feet, due to the quick spread of flammable liquid fires; Class C extinguishers should simply be placed where they are likely needed, based

upon the given hazards; and, Class K extinguishers are generally located within a proximate distance to the cooking areas in which they are designed to protect.

- **Inspection and Maintenance of Extinguishers**
  All extinguishers should be visually inspected on a monthly basis and tested and certified by a qualified service provider on an annual basis.

- **Use of Fire Extinguishers**
  In most cases, recalling the ***PASS*** acronym will help remember the four steps of safe extinguisher use.

  - ***P***ull the pin (from the handle)
  - ***A***im the nozzle (at the base of the fire)
  - ***S***queeze the handle (to actuate the extinguisher)
  - ***S***weep the nozzle (from side-to-side)

Fire Safety Inspections
Supervisors and (RESPONSIBLE PERSON) are responsible for conducting workplace fire inspections as a part of the normal workplace safety inspection. These surveys should include observations of housekeeping issues and should specfically address proper storage of chemicals and supplies, unobstructed access to fire extinguishers and emergency exit or evacuation routes.

Emergency Exits
Every exit designated as an emergency exit should be clearly visible or the route to it conspicuously identified in such a manner that every occupant of the building will readily know the direction of escape from any point. At no time should exits or paths of egress be blocked.

Any doorway or passageway, which is not an exit or access to an exit, but which may be mistaken for an exit, should be identified by a sign reading “Not an Exit” or otherwise labeled as to the purpose (i.e., “Closet”). Exits and accesses to exits will be marked by a readily visible sign. Each exit sign (other than internally illuminated signs) should be illuminated by a reliable light source or phosphorescence.

Emergency Lighting
Emergency lighting in buildings, if equipped, should be tested at least monthly to ensure proper operational conditions in the event of an emergency. These tests should be completed in conjunction with the fire extinguisher visual inspections.

Evacuation Routes and Plans
Each facility shall design and post an emergency evacuation plan to allow employees and other to safely evacuate the building or affected area in the case of an emergency.

Should evacuation be necessary, proceed to the nearest exit or stairway and proceed to an area of refuge outside the building. Most stairways are fire resistant and are often equipped with barriers to smoke if doors remain closed.

Do not use elevators. Should a fire involve the control panel of the elevator or the electrical system of the building, power in the building may be lost and you could become trapped in the elevator, potentially between floors. Also, the elevator shaft can become a flue, lending itself to the passage and accumulation of hot gases and smoke generated by the fire.

Fire Emergency Procedures
The following procedures should be followed in the event of a fire within a building:

- Activate the nearest fire alarm, if equipped
- Notify your supervisor, co-workers, and other occupants
- Fight the fire only if:
  - The Fire Department has been notified of the fire, and
  - The fire is small and confined enough to its area of origin, and
  - You have a way out and can fight the fire with your back to the exit, and
  - You have the proper extinguisher, in good working condition, and know how to use it.
- If you are unsure of your ability or the fire extinguisher's capacity to contain the fire, leave the area.
- Leave the building and move away from exits, maintaining clear path for emergency operations.
- Assemble in a designated area.
- Report your safety to the appropriate supervisor or personnel.

TOOL SAFETY

- All tools shall be of an approved type and maintained in good condition.

- All tools shall be examined prior to use to ensure adequate working condition.

- Defective tools shall be tagged to prevent their use and removed from the jobsite.

- Employees shall be trained on the correct use, hazards, and limitations of tools used in the workplace.

- Gloves should be worn when they provide protection to the employee without increasing the chances of the employee becoming entangled at the point of operation.

- Tools shall not be left unsecured in elevated places. Tethering is recommended in areas where tools may fall to a lower level.

- Impact tools, such as chisels, hammers and punches that become mushroomed or cracked shall be replaced.

- Chisels and punches shall be held with a safe holding device, such as vice grips or pliers to avoid injury to employee's hand.

- Wrenches with sprung or damaged jaws shall not be used.

- Wooden handles that are loose, cracked or splintered shall be replaced, not taped or lashed.

- Power tools shall be disconnected from any power source while repairs or adjustments are being made.

Tool Carrying and Storage

- Never carry sharp tools in your pockets unless the edges are protected.

- Do not carry tools in your hands while climbing a ladder. Hoist them with a rope or use an approved utility belt.

- Protect your tools from falling when working from a scaffold, ladder or other elevated work areas.

- Do not leave your tools lying around where they may cause a trip/fall hazard. Tools no longer needed for the job shall be returned to their proper location.

LADDER SAFETY

- Wooden ladders shall not be painted so as to obscure a defect in the wood; only a clear nonconductive finish shall be used.

- All ladders shall be inspected regularly. Ladders with weakened, broken or missing steps, broken side rails, or other defects shall be tagged and removed from service.

- Ladders and scaffolds shall be sufficiently strong for their intended use. All ladders shall be capable of supporting at least 2.5 times the maximum intended load without failure.

- Ladders shall not be placed in front of doors opening toward the ladder unless the door is open, locked, or guarded.

- When ascending or descending ladders, employees shall have both hands free and shall face the ladder.

- Only (ENTITY NAME) supplied ladders shall be used by employees.

- Ladders shall not be used as scaffold platforms unless specifically designed for that purpose.

- Boxes, chairs, etc. shall not be used as ladders.

- Portable metal ladders and other portable conductive ladders may not be used near exposed energized lines or equipment except in very specialized situations.

- The use of stepladders above 20 feet is prohibited and the use of extension ladders above 24 feet is strongly discouraged.

- All ladders used in fire service activities shall be NFPA approved.

Straight Ladders

- Portable straight ladders shall be equipped with nonskid bases or shoes.

- The ladder shall be placed so that the distance between the bottom of the ladder and the supporting point is approximately one-fourth of the ladder length between the foot of the ladder and the upper support.

- Straight ladders shall not be climbed beyond the third step from the top.

- When working from a portable ladder, the ladder must be securely placed, held, tied, or otherwise made secure to prevent slipping or falling.

- When dismounting from a ladder at an elevated position (such as a roof) the employee shall ensure that the ladder side rails extend at least 3 feet above the dismount position, or that grab bars are present.

- Employees shall belt off to a ladder whenever both hands must be used for the job or a possibility of the employee falling from an elevated position exists.
- Ladders shall not be spliced together to form a longer ladder, unless specifically designed to be used as a section ladder.

- A ladder shall not be placed against an unsafe support.

Step Ladders

- The top step shall not be used, except for platform ladders.

- Stepladder legs shall be fully spread and the spreading bars locked in place.

- Stepladders shall not be used as straight ladders.

- When an employee is working on a stepladder more than 10 feet high (except a platform ladder), another person shall hold the ladder or it should be tied to a support to prevent it from falling.

MATERIAL STORAGE SAFETY

- Material shall be stored in such a manner that it will be safe from damage. Special care must be taken to assure that stored material poses no hazard to anyone working around it. Only lightweight material should be stored on top shelves.

- Bins or shelves shall never be used as ladders.

- Materials shall not be stored on the floor, in front of shelving.

Housekeeping

- Work locations including vehicles, buildings, shops, yards, offices, cabs, etc. shall be kept clean and orderly at all times.

- Combustible materials, such as oil-soaked rags, waste and shavings shall be kept in approved metal containers with metal lids. Containers shall be emptied as soon as practical.

- Both clean rags and used rags shall be kept in metal or metal lined bins having metal covers.

- Permanent floors and platforms shall be kept free of dangerous projections or obstructions and shall be maintained reasonably free from oil, grease, or water. Where

the type of operation produces slippery conditions, mats, grates, cleats or other methods shall be used to reduce the hazard from slipping.

- Stairways, aisles, permanent roadways, walkways and material storage areas in yards shall be kept reasonably clear and free from obstructions, depressions and debris.

- Materials and supplies shall be stored in an orderly manner so as to prevent their falling or spreading and to eliminate tripping and stumbling hazards.

- Rubbish and unused clothing shall not be allowed to accumulate in lockers.

- Paper and other combustible materials shall not be allowed to accumulate, and weeds or other range vegetation shall not be permitted to grow in or around storage areas, shops, substations, pole yards, buildings, fuel tanks or other structures.

- Batteries shall be stored in a well-ventilated area protected from sparks or open flames.

- All personnel will practice good housekeeping. Scrap material will be disposed of properly, and the work area should be free of any loose material.

Stacking Material

- When material is stacked, all possible precautions must be taken to assure that it will remain stable. The lower level must be blocked or tied to prevent slipping. The height of a stack of material should remain within reasonable limits.

- When unloading and/or stacking poles or pipe, great care should be exercised to maintain a safe work environment. Do not stand on poles or pipe. Watch for pinch points, and stay out of the path of equipment during unloading. Avoid any contact with creosote, while unloading poles.

Flammable Material

- Under no circumstances shall flammable materials be stored in an area where heat or potential ignition sources may affect the stability of the material.

- All flammable materials shall be stored in a location that will not endanger life or property. Containers will be clearly and appropriately marked, in accordance with fire safety standards. In addition, storage facilities shall have a sign identifying the materials as “flammable”.

- Storage of open containers of flammable materials is prohibited. Container covers must be promptly replaced. Smoking will not be permitted inside any warehouse facility or outside near flammable or combustible materials in the equipment yard.

- Flammable liquids shall be used only for their designed purposes. Gasoline shall not be used for cleaning purposes or for starting or kindling fires.

- All solvents should be kept in approved, properly labeled containers. Gasoline and other solvents of this class shall be handled and dispensed only in approved, properly labeled (yellow letters) red safety cans.

- When pouring or pumping gasoline or other flammable liquids from one container to another, metallic contact shall be maintained between the pouring and receiving containers. Transferring of flammable liquids from one container to another shall be accomplished only in properly ventilated spaces free from ignition sources.

- Strict adherence shall be paid to “No Smoking” and “Stop your Motor” signs at fuel dispensing locations.

Smoking

- Open flames shall be permitted in areas where flammables or combustibles are present. Smoking will only be allowed in designated smoking areas and never in the vicinity of flammable materials. The absence of “No Smoking” signs shall not be considered authorization for smoking in hazardous locations.

SHOP SAFETY

Many safety-related hazards and exposures exist in workshops and maintenance garages. The following procedures were developed to serve as a reminder of some of the potential exposures that can be found in these areas. This is not an all-inclusive list and does not address all of the known or expected hazards. In many cases, references to alternative safety procedures contained within this manual are noted.

Air Compressors

- Drain valves on air compressors should be opened frequently to prevent the accumulation of liquid.

- Safety-relief valves will be installed on all compression tanks. These valves will be tested periodically to ensure their proper operation.

- Never use compressed air to clean your hands or to blow dirt from clothing or your body.

- When using compressed air for cleaning purposes, it must be kept at a level below 30 pounds per square inch (PSI).

Compressed Gas Cylinders

- If compressed gas cylinders are stored inside a building, the area will be kept dry and well ventilated. Oxygen and fuel gas cylinders must be stored separately.

- Cylinder carts, other than those designed to hold cylinders in an upright position, are prohibited. Upright cylinder carts must be equipped with a chain, bar or some other device that will act to stabilize the cylinder. If gauges are not attached to the cylinder, valve caps must be in place.

- Signage similar to the following must be posted in any cylinder storage area. “Danger – No Smoking, Matches, or Open Flames”.

- See *Compressed Gas Cylinder Safety* section for additional safety requirements.

Grinders

- A face shield and safety glasses shall be worn while grinding. Any grinding equipment without proper safety features in not allowed in the work place. Abrasive wheels shall only be used on machines that have guards that cover the spindle end, nut and flange projections.

- Grinder work rests must be designated to be adjustable to compensate for wheel wear. Work rest should be adjusted with a maximum clearance of 1/8-inch to help prevent work from jamming. Tongue guards must also be adjusted to within 1/8-inch.

- When replacing abrasive wheels, follow the manufacturer’s directions for proper installation and inspection. All grinding wheels must be inspected prior to installation to insure that the RPM rating of the wheel is correct for the grinder’s RPM.

Electrical Safety

- Identify and label all electrical control devices, such as circuit breaker, fuses, disconnects, etc.

- All electrical outlets, including wall receptacles, extension cords, etc. must have an independent, third-wire ground system.

- All electrical tools and equipment shall be effectively grounded unless the tool is an approved double-insulated type.

- All electrical junction boxes shall have protective covers. All such boxes must have sufficient access space.

- See *Electrical Safety* section for additional requirements.

Material Storage

- Stored materials should stacked in such a manner as not to create a hazard. Stack containers, boxes, parts, etc. in an orderly fashion to ensure stable stacking heights.

- Heavy bulky materials should be stored on lower shelves to minimize chances of injury due to falling objects.

- See *Material Storage Safety* section for additional requirements.

General Shop Safety

- Elevated storage platforms over four feet in height from floor level shall have standard handrails (includes a mid-rail and a top handrail) and toe boards. The handrails will be constructed of metal or wood sufficient to withstand 200 pounds of top rail pressure.

- Proper signage, such as “No Smoking” signs, will be installed in all areas where flammable or easily combustible materials are stored.

- Hooks used on hoisting equipment shall be equipped with a safety latch to help prevent dropping of any lifted load.

- The hoisting capacity of any hoisting equipment shall be printed clearly on the frame in lettering that is large enough to be read from ground level. All cranes shall be inspected on at least a monthly basis to assure their proper operation and condition.

- All shops shall have at least two accessible exits for emergency evacuations.

- Any doors not designated as exits, but may be mistaken for exits should be clearly marked “Not an Exit”.

- All exits shall be identified by a clearly visible, illuminated, “Exit” sign.

- Only approved containers are to be used for the storage of flammable and combustible materials. Approved containers can be identified by the presence of a label from a certifying organization, such as Underwriters Laboratories (UL).

- Safety cans shall be painted red and clearly marked to identify the contents. Only approved pumps or self-closing faucets are to be used for dispensing flammable or combustible liquids.

- No guard shall be removed from any machine or piece of equipment except to perform required maintenance. Guards removed to perform maintenance operations shall be replaced immediately after the completion of the work.

STORAGE & EQUIPMENT YARD SAFETY

- All vehicles shall have the emergency brake set when parked on a slope or down grade. Consideration should also be given to the use of chocks in these situations.

- All vehicles and equipment shall be parked in a position that does not require backing whenever possible. When backing a truck or machinery in the yard, use a spotter to assist you into position.

- Proper personal protective equipment should be evaluated before performing any work in the yard. It is not possible to identify all personal protective equipment that may be required due to the various types of assignments in that area.

- Miscellaneous tools, equipment and material should be stored on pallets instead of being placed on the ground. Pallets should be stacked in a way that ensures their stability. Stability may be influenced by many items such as the stability of the ground, the height of the stacked material, the configuration of the stacking, etc.

- Always roll pipe from the ends or from behind to avoid placing your body in the pipe's path.

- All pipe racks will be fitted with pipe stops to prevent pipe roll-off. Stripping should also be used at the ends of the pipe to act as spacers.

- All aboveground fuel storage tanks should be protected on all four sides with heavy-duty guard posts and crash rails. Emergency cut-off switches shall also be installed near the pumping equipment and a fire extinguisher should be readily accessible.

- A diking system capable of holding the volume of the above ground storage tank should be constructed to help control potential spills.

COMPRESSED GAS CYLINDER SAFETY

- Never attempt to lift compressed gas cylinders with an electromagnet. Where cylinders must be handled by a crane or derrick, as on work sites, the cylinders shall be lifted in a cradle or suitable platform, not by the valve protector cap. Do not lift with slings or chokers. Extreme care must be exercised to prevent dropping or bumping of the cylinders.

- Cylinders, whether full or empty, shall be stored in a rack, chained or otherwise secured to prevent them from falling.

- Do not use cylinders as rollers, supports or for any other use other than its designed purpose.

- Cylinders shall have their contents properly identified. Empty cylinders shall be plainly marked “Empty” or “MT”, and the valves shall be closed.

- Oxygen cylinders in storage shall not be stored near flammable or highly combustible materials, such as oil, grease, fuel, other fuel gas cylinders, etc. In addition, no cylinders shall be stored in areas where there is an exposure to direct sunlight.

- Welding or cutting of any pipeline, tank, empty container or piece of equipment shall not be performed until it is assured that the object is free from flammable materials or an explosive mixture of gases. Before welding or cutting begins, the hazardous materials

shall be removed or it shall be vented to the atmosphere to prevent a possible explosion from the expansion of trapped gases.

- Cylinders shall not be place where they might become part of an electric current or within five feet of an electrical outlet. Cylinders shall not be allowed to come in contact with energized conductors, ground wires from electrical equipment or welding machines.

- Valves of compressed gas cylinders shall be opened slowly and with the proper wrench.

- Before the regulator is removed from a cylinder, the valve shall be closed and all pressure released from the regulator. Use regulators and pressure gauges only with gases for which they are designed and intended. Do not attempt to repair or alter cylinders, valves or attachments. Any changes in the cylinders shall only be performed by the supplier or manufacturer.

- Leaking cylinders shall not be used. Such cylinders shall be taken away from sources of ignition and the supervisor notified. Leaking compressed gas cylinders shall be taken out of service immediately and handled as follows:

- Close the valves and take the cylinder outdoors well away from any source of ignition.

- Properly tag or mark the cylinder.

- If the leak occurs at a fuse plug or other safety device, take the cylinder outdoors well away from any potential ignition source and open the cylinder valve slightly to allow the contents to escape slowly.

- Tag the cylinder to warn others. (The environmental and health effects of the contents must be evaluated prior to allowing the cylinder to bleed-down.)

- Post warnings against approaching with lit cigarettes or other potential ignition sources.

- Promptly notify the supplier and follow instructions for handling/returning the cylinder.

- Do not remove or change the marks and/or numbers stamped on compressed gas cylinders. In addition, any labels shall be left in place for identification purposes.

- Cylinders that are heavy or difficult to carry by hand may be rolled on their bottom edge, but they should never be dragged.

- Do not tamper with safety devices in valves or on cylinders.

- Consult the supplier of the gas or the appropriate Safety Data Sheet (SDS) when there are doubts concerning the proper handling of a compressed gas cylinder or its contents.

Transporting Cylinders

- Load to allow as little movement as possible.

- Remove regulators and put valve protection caps in place.

- Secure cylinders to prevent violent contact or falling.

MACHINE GUARDING SAFETY

Guarding Requirements

- Guards shall be affixed and secured to any machine, where possible.
- A guard shall not offer an accident hazard in itself.
- The point-of-operation of machines where the operation presents a hazard to employees shall be guarded.
- Revolving drums, barrels, and containers shall be guarded by an enclosure that is interlocked with the drive mechanism.
- When periphery fan blades, such as those found on ventilation fans, are located less than seven feet above the floor or working level, the blades shall be guarded with a protective covering with openings no larger than one-half inch.
- Machines designed for a fixed location, such as a drill press or bench grinder, shall be securely anchored to prevent walking or moving of the machine during operation.

Machine Guard Requirements

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

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

- Guards should ensure that no objects can fall into moving parts.

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

- Guards should not create interference which would hamper employees from performing their assigned tasks.

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

WELDING & CUTTING SAFETY

- Welding and cutting shall only be performed by experienced and properly trained personnel.

- The work area shall be inspected for potential fire hazards before any cutting or welding is performed.

- When welding or cutting in elevated positions, precautions shall be taken to prevent sparks and hot metal from falling onto people or material below.

- Suitable fire extinguishing equipment shall be immediately available at all locations where welding and cutting equipment is used.

- Proper strikers shall be used in lighting torches. Matches and cigarette lighters shall not be used.

- A fire watch shall be maintained whenever welding or cutting is performed in locations where combustible materials present a potential fire hazard. A fire check should be made of the entire area after completion of welding or cutting activities.

- Machinery, tanks, equipment, shafts or pipes that could contain explosive or flammable materials shall be thoroughly cleared and decontaminated prior to the application of heat.

- In dusty or gaseous spaces where there is a possibility of an explosion, welding or cutting equipment shall not be used until the space is adequately ventilated.

- Adequate ventilation or approved respiratory equipment shall be used while welding in confined spaces or while cutting, brazing or welding zinc, brass, bronze, stainless steel, galvanized or lead coated materials.

- Welders shall wear clothing made of fire resistant fabrics, gloves, appropriate footwear, sleeves and a buttoned collar. All protective clothes and equipment should be worn in a manner that provides the most efficient protection from slag or other hot material.

- When using an arc welder, use No. 10 or No. 12 shade lenses. When using acetylene torches for welding or cutting, use No. 5 or No. 6 shade lenses.

- Regular shaded safety glasses do not provide adequate protection for welding or cutting operations.

- Proper eye protection in the form of safety glasses and a face shield should be worn during any portable grinding activities. Safety glasses should also be worn during any slag chipping activities.

Gas Welding

- Suitable eye protection, protective gloves and clothing shall be worn during welding or cutting operations or while cleaning scale from welds. Helpers or attendants shall wear proper eye protection. Other employees shall not observe welding operations unless they use approved eye protection.

- Matches shall not be used to light a torch. A torch shall not be lit on hot work.

- When gas-welding equipment is not in use, the cylinder valves shall be closed and the pressure in the hose released.

- Gas hoses shall not be positioned so they create tripping/slipping hazards.

- Always inspect oxygen or fuel gas hoses for leaks, burn spots, worn places, or other defects before pressurizing.

Electric Welding

- No electric welding machine, either AC or DC, shall be operated until the frame or case of the machine is electrically grounded for protection from potential shock hazards.

- All ground and electrode lead cables will be inspected before use for bad or damaged connectors. Only connectors designed for joining or connecting will be used for that purpose.

- Welders shall wear an approved welding helmet, proper protective gloves and fire-resistant clothing during welding activities. Proper eye protection in the form of safety glasses and/or a face shield should be worn by the welder and any helpers in the area

when chipping slag, grinding, etc. Other employees shall not observe electric welding operations unless they use approved eye protection.

- Welders shall wear proper eye protection to guard against flying particles when the helmet is raised.

- Welding screens shall be used whenever practical to help control potential ultraviolet light exposures to other personnel in the area.

- Welding machines will be placed at least 4 feet apart.

- Fire extinguishers should be placed in the immediate area and a fire watch used as necessary to control any fire potential.

WEATHER-RELATED ILLNESS PREVENTION

Cold-Related Illnesses

- Hypothermia is when the body's temperature drops below normal, causing uncontrollable shivering, weakness, drowsiness, disorientation, unconsciousness, and even death. Persons working outdoors during the winter months should follow the guidelines listed below:

    - Dress in layers
    - Keep dry
    - Work with co-workers when possible

Heat-Related Illnesses

- Heat stroke, heat exhaustion, heat cramps and heat rash are health-related problems associated with working in hot environments. Heat-related illnesses can be caused by prolonged exposure to hot temperatures, limited fluid intake, or failure of temperature regulation mechanisms in the brain.

- The most serious health disorder associated with working in a hot environment is heat stroke. Symptoms of heat stroke include hot dry skin, no sweating, high body temperature, rapid heartbeat, mental confusion, or a loss of consciousness. While medical help is being called, the victim should be moved to a cool area and his/her clothing soaked with cool water. Vigorous fanning of the body will increase cooling. Death can occur if prompt first aid and medical help is not given.

- Heat exhaustion occurs as a result of excess fluid loss and failure to replace the minerals and fluid lost during sweating. Signs of heat exhaustion include extreme weakness or fatigue, giddiness, nausea, or headaches. The skin is clammy and moist and the body temperature is relatively normal. The best treatment for heat exhaustion involves resting in a cool place and drinking plenty of fluids.

- Heat cramps are painful muscle spasms, which are caused by excessive fluid and salt loss. Such cramps can be treated by consuming fluid replacement beverages.

- Heat rash is likely to occur in hot and humid environments where sweat cannot be easily evaporated from the skin surface. It can be prevented by resting in a cool place and allowing the skin to dry.

- By following a few basic precautions, health problems associated with working in hot environments can be prevented:

    - Those unaccustomed to working in the heat should be given time to adjust to work in a hot environment.
    - Wear light, loose fitting clothing and protect yourself by wearing a hat. Sunscreen should also be used when prolonged exposures to sunlight may be possible.
    - Drink plenty of fluids to help prevent dehydration. Five to seven (5-7) ounces of fluid are recommended every fifteen to twenty (15-20) minutes when working in extremely hot or humid conditions. Beverages containing alcohol or caffeine should be avoided to prevent dehydration.
    - Alternate work and rest periods. Heavy work should be scheduled for the cooler parts of the day if possible.
    - Educate employees on the symptoms, treatments and preventive measures for heat-related problems.

PESTICIDE & HERBICIDE SAFETY

- When applicable, all employees who apply pesticides or herbicides shall be licensed.
- Before using any pesticide or herbicide, employees shall read the label carefully and follow the directions and precautions.
- Pesticides shall be stored in a properly labeled, tightly sealed container and under lock and key at all times. The building, or structure shall be clearly marked with pesticide warnings.
- Before handling any pesticides/herbicide, the user should review the material safety data sheet and label to identify any personal protective equipment that will be needed to prevent a possible exposure.
- Mix the pesticides/herbicides in a well-ventilated, well-lit area. Mix only a recommended rates and apply only at specified dosages.
- Check application equipment for leaking hoses or connections, plugged or worn nozzles, and examine the filter to ascertain that it is free of debris.
- Employees shall avoid contact with skin or inhalation of mists or spray.
- Safety data sheets (SDS) shall be maintained and kept near material and storage locations.

- Spray equipment shall be cleaned daily when using oil-based solutions.

- Pesticides/herbicides shall not be stored or disposed of where they could contaminate people, property or waterways.

- Empty containers shall be disposed of in a safe manner.

- Pesticides/herbicides should only be applied under favorable time and weather conditions.

- Do not eat, drink or use tobacco products while handling pesticides/herbicides.

CHAIN SAW SAFETY

Personal Protective Equipment

Employees operating a chain saw or related equipment shall, at a minimum, wear:

- safety glasses and/or face shields
- head protection
- hearing protection
- gloves
- cut-resistant chaps
- work shoes or boots
- fall protection, if necessary

Chain Saw Operation

- When starting a chain saw, it shall be placed on the ground or against a solid support. Do not hold the chainsaw off the ground when starting.

- Ensure the chain brake, if equipped, is locked before starting.

- The operator shall grip the chain saw with both hands during the entire cutting operation.

- The saw bumper shall be against the tree or limb before starting a cut.

- Chain saw operators shall regularly clear the immediate area around their work to make certain that brush or limbs will not interfere with the chain saw or operator.

- Chains saws shall not be modified in such a way to allow locking of controls in the “on” position.

- The saw engine or motor shall be stopped when:

    - Working on any part of the chain or cutting bar.
    - Being moved from one location to another.
    - The unit is unattended.

- Gasoline driven chain saw engines shall be stopped when being refueled. If gasoline is spilled on the chain saw during refueling, it shall be wiped off before the engine is started.

- A gasoline driven chain saw shall not be used above shoulder level. Employees shall not approach the chain saw operator with the reach of the saw blade while it is in operation.

- Ropes, pulleys, etc. should be used as necessary to lower larger limbs that may endanger persons and property if allowed to “free-fall”.

- The proper use of fall protection and/or ladders should be reviewed with all employees prior to working from a position other than ground level.

TREE CUTTING & TRIMMING SAFETY

Before attempting to trim, cut, or remove any tree, carefully consider its characteristics. Items to be considered include:

- Tree lean
- Tree size
- Wind conditions
- Nearby structures
- Nearby utilities
- Other trees or brush in the vicinity

Before cutting, clear the ground around the tree(s) where the work will be performed, carefully, removing any underbrush or other obstructions. This will provide clear vision, unrestricted movement, and an unhampered escape route when the tree or limb begins to fall.

In advance of the cutting, plan an escape route to the side or rear, depending upon the situation and likely direction of tree and limb fall.

As the tree or large limb begins to fall, stop the saw and lay it in a safe place that will allow unrestricted escape.

Trimming & Cutting Procedures

- Hold the saw firmly with both hands.
- If cutting entire tree, make a cut close to the base of the tree but high enough to conveniently avoid running the saw near the soil.
- Cut through trees up to 8-inches in diameter with one cut.

- On larger trees, notch (undercut) at least one-third of the trunk diameter on the fall side of the tree. Then, make a lower cut of the 45-degree notch first to prevent pinching or binding of the chain by wedge cut, if used.
- Make the cut to initiate the fall on the opposite side of the trunk about 2-inches above and parallel to the horizontal notch. Leave wood fibers intact to act as a hinge to keep the tree from twisting and falling in the wrong direction or kicking back on the stump.
- Guide the saw into the tree, do not force it.
- Remove the saw from the tree and shut down before the tree falls.

Preventing Saw Kickback

- Hold the saw firmly with both hands.
- Grip the top handle of the saw by wrapping hand and thumb firmly around handle.
- Use a saw equipped with chain brake or kickback guard.
- Watch for twigs or other impediments that could snag the chain.
- Don't pinch the chain bar while cutting.
- Saw with the lower part of the bar close to the bumper, not on the top near the nose.
- Maintain high saw speed when entering or leaving a cut in the wood.
- Keep the chain sharp.

FORKLIFT SAFETY

- Forklifts shall only be operated by authorized persons who have been properly trained in their use. This training should be documented and consistently used with all authorized operators and trainees.

- The operator is responsible for inspecting the equipment before it is used. The brakes and controls shall also be tested by the operator prior to use. Needed repairs shall be reported immediately.

- Equipment shall be operated at a safe speed for existing conditions, moving slowly around corners and avoiding holes and loose materials.

- Seat belts shall be worn when operating a forklift with rollover protection.

- Clearances shall be checked in all directions, particularly overhead clearances.

- Forklifts shall not be fueled while the engine is running.

- Forks shall be placed under the load as far as possible. Loads should not be raised or lowered while traveling. Loaded or empty, forks should be carried as low as possible, but high enough to clear uneven surfaces. (Usually about 6-12 inches on level surfaces.)

- Operators shall always face the direction of travel and also keep their arms and legs inside the equipment.

- Load limits as specified by the manufacturer shall not be exceeded.

- Do not travel with the load raised as this causes the center of gravity to rise, which may affect the tipping potential.

- Only the operator shall be allowed on the equipment during operation, unless a seat is provided for another occupant.

- A secured platform specifically designed for the purpose must be used when lifting personnel.

- Unattended forklifts (i.e., those in which the operator is more than 25 feet away or the forklift not in his/her view) shall have the load fully lowered, controls neutralized, power shut off and brakes set.

- Equipment with internal combustion engines shall not be operated in enclosed areas for long periods of time so as not to exceed the allowable levels of carbon monoxide.

BACKHOE & LOADER SAFETY

- Operators shall be adequately trained and qualified to operate the equipment. The operators shall become thoroughly familiar with the equipment before using it and they must understand the contents of the operator's manual.

- The operator is responsible for inspecting the equipment before it is used. The brakes and controls shall also be tested by the operator prior to use. (Needed repairs shall be reported immediately). Observe proper maintenance and repair of all pivot pins, hydraulic cylinders, hoses, snap rings and main attachment bolts daily.

- Seat belts shall be worn on all equipment with rollover protection.

- Operators should maintain three points of contact with the equipment when entering or exiting. This will allow the operator to regain their balance if a slip occurs.

- Back-up alarms are a useful warning device and should be sued when possible, especially on larger vehicles and equipment that may severely restrict your view to the rear of the vehicle. If an alarm is not present, the operator should honk his horn to warn others of the moving vehicle. Back-up alarms should be operable at all times.

- Only the operator shall be allowed on the equipment during operation, unless a seat is provided for another occupant.

- Employees shall never be allowed to ride in the bucket or use the bucket for an elevated platform.

- Walk around the equipment to observe for children and others before starting up. Consider the use of a spotter when backing the equipment.

- Keep bystanders in the clear while operating the equipment. No one is allowed in a ditch while a backhoe is excavating.

- Locate underground utility lines and overhead power lines before starting to dig. (Always contact utility companies to physically locate any underground lines). Do not operate a backhoe within 10 feet of an overhead electrical line. Hand-dig in the vicinity of all known underground utility lines and pipelines.

- Never attempt to lift loads in excess of the equipment capacity.

- Never allow anyone to get under the equipment or reach through the lift arms while the bucket is raised.

- Relieve the pressure in any hydraulic lines before disconnecting them to make repairs. Any hydraulic implements that are not relieved, shall be physically blocked to protect against mashing injuries during maintenance or repair activities. Physical blocks may include safety stands, timbers, cinder blocks, etc. that can withstand the force.

- Use care at all times to maintain proper stability. Drive at safe speeds over rough ground, on slopes, when crossing ditches and when turning corners.

- To prevent upsets when operating on a slope, avoid using the full reach and swinging a loaded bucket to the downhill side.

- Always center and raise the boom before moving to a new location.

- Do not attempt to exit the equipment while it is still in motion. Apply the parking brake and shut down the engine before leaving equipment.

- Lubrication activities or mechanical adjustments shall not be attempted while the equipment is running if there is a possibility of contacting a pulley, belt, shaft, etc. that is in motion.

- Park the equipment on level ground when possible. As a minimum, the bucket should be lowered, the brakes set, the transmission engaged and engine killed when parking.

- Use care in attaching towing lines to the equipment. Pulling from the tractor rear axle or any point above the axle may cause an accident.

- Slow moving placards and other warning devices should be used to help other motorists in spotting the slow-moving vehicle from a safe distance.

DUMP TRUCK SAFETY

- Employees or other individuals shall not be carried in the bed for transportation purposes.
- Employees shall not remain in the cab when the bed is being loaded unless the cab is protected against impact.
- Check overhead clearances before raising the bed. Be aware of overhead electrical lines.
- Be sure hoist is not engaged before moving the truck.
- Loose material shall be covered to prevent blowing debris and spillage.
- Close windows during loading/unloading to control dust accumulation inside the cab.
- Operators of dump trucks must possess a valid Commercial Drivers License.
- Operators are responsible for cleaning debris, mud, rocks, etc. from the bed, fenders and other body parts that may become dislodged during travel.
- Back-up alarms are a useful warning device and should be used when possible, especially on larger vehicles and equipment that may severely restrict your view to the rear of the vehicle. If an alarm is not present, the operator should honk the horn to warn others of the moving vehicle. Back-up alarms should be operable at all times.
- All mirrors should be maintained in clean, good working condition and adjusted to assist the operator in viewing obstructions or other vehicles.

- Operators should maintain “three point of contact” with the equipment when entering or exiting the cab. This will allow the operators to regain their balance if a slip occurs.

TRACTOR & SHREDDER SAFETY

- The operator shall wear a securely fastened seat belt if the tractor/shredder is equipped with rollover protection.

- Guards around chains, shafts, pulleys, gears, etc. shall always remain in place while the equipment is in operation.

- Use caution when operating near slopes, cuts, depressions, drop-offs, soft shoulders, ditches, etc. Operators shall constantly watch for hidden objects and uneven ground. Hazardous areas shall be pre-cleaned and special hazards removed prior to mowing.

- Use care when entering traffic areas, crossing railroad tracks, etc.

- Operators should maintain three point of contact with the equipment when entering or exiting. This will allow the operator to regain his/her balance if a slip occurs.

- Back-up alarms are a useful warning device and should be used when possible, especially on larger vehicles and equipment that may severely restrict your view to the rear of the vehicle. If an alarm is not present, the operator should honk his horn to warn others of the moving vehicle. Back-up alarms should be operable at all times.

- Only the operator shall be allowed on the equipment during operation, unless a seat is provided for another occupant.

- Lubrication activities or mechanical adjustments shall not be attempted while the equipment is running if there is a possibility of contacting a pulley, belt, shaft, etc. that is in motion.

- Take sharp turns at low speed.

- Proper personal protective equipment shall be worn at all times. On a tractor with an uncovered cab, the operator should as a minimum wear safety glasses and hearing protection. Other personal protective equipment such as gloves, faceshields, sleeves, boots, etc. should be evaluated for individual jobs. Sunscreen should also be used in areas where the operator may be exposed to sunlight for long periods of time.

- Slow-moving placards and other warning devices should be used to help other motorists in spotting the slow-moving vehicle from a safe distance.

LANDSCAPING & GROUNDS MAINTENANCE SAFETY

Power Lawn Mowers (Push, Riding, and Zero-Turn Radius)

Prior to use:

- Review the instruction/owner's manual, especially if you are unfamiliar with a particular piece of equipment.

- Ensure that all mowers are equipped with adequate and appropriate guards, which shall remain in place while the mower is in use, including rear shields, grass chute/deflector, and 'dead-man' controls.

- Any adjustments, inspections, or repairs, should be completed while the mower is at a complete stop. A spark plug wire shall be removed if necessary to prevent accidental starting.

- Fill the fuel tank outdoors. No smoking allowed while fueling.

- Walk the area to be mowed, carefully removing any debris including rocks, limbs, logs, or anything else the mower blades could throw while cutting.

Mower Operation

- Proper personal protective equipment shall be worn for the task being performed. Necessary personal protective equipment includes protective eyewear, faceshields, hearing protection, gloves, and work boots.

- Avoid directing the discharge opening toward other individuals of vehicles in the vicinity.

- When mowing on a slope or incline, it is safer to mow up and down the hill rather than across the face of the slope. Do not operate mowers on a slope greater than 15 degrees.

- Avoid wet slopes to prevent losing traction and tipping over.

- Keep the mower's movement steady and slow enough to adequately maintain control.

- Maintain a safe distance from drop-offs, water, and other hazards.

- Do not make rapid corrections or turns.

Chippers

- Proper protective eyewear and hearing protection shall be worn by all employees near the chipper and other personal protective equipment may be necessary depending on the activity. In addition, workers must be aware of entanglement hazards involving loose fitting clothes, gloves, etc.

- Chippers shall never be parked directly under the tree being trimmed.

- If the chipper is parked on or near the roadway, advance warning signs, flaggers, cones, etc. shall be used to identify and protect the work area.

- Spectators shall never be allowed to stand near the machine while brush is fed into the chipper.

- Employees shall never place hands or other parts of the body into the brush chipper while the chipper is in operation.

- The battery cables shall be disconnected prior to performing any task that my potentially put you in contact with the cutting blades.

- Tools or other metallic objects shall not be used to push brush into the chipper.

- The ignition key shall be removed when the chipper is left unattended.

- Employees shall be familiar with emergency shut-off procedures and ensure that the emergency shut-off is operational prior to use.

Line Trimmers & Edgers

- Proper protective eyewear and hearing protection shall be worn by all employees near the chipper and other personal protective equipment may be necessary depending on the activity.

- Never install a blade on a trimmer or edger that was not specifically designed for that machine.

- Carefully trim around vehicles, doorways, parking lots, and other areas where others may be as flying debris may cause injury.

- Allow machines to properly cool down prior to re-fueling. Hot engine parts and mufflers may cause a fire should fuels be spilled on or in them.

POISONOUS PLANT AWARENESS

Poison Ivy, Oak, and Sumac are classified as *Toxicodendrons* as the substances found in the sap are collectively known as urushiols. Other related plants and/or plant products (fruits, leaves, etc.) also contain similar oils.

Poison Ivy usually has three broad, spoon-shaped leafs or leaflets, but can have more. It may grow as a climbing vine, a creeping vine, or as a bush or shrub, depending upon the surrounding terrain and locale. Leaves are generally 1.5 to 4.5 inches long and 1.5. to 4.5 inches wide and can be shallowly lobed or almost entirely serrated. Poison Ivy is very common throughout Texas, often found along river or creek beds, fencerows, roadsides, and edges of open fields.

Poison Oak has leaves that look generally like oak leaves with usually three, but sometimes up to seven leaflets per group can be anywhere from one to six feet tall. As with Poison Ivy, Poison Oak grows as both a vine and shrub; however, Poison Oak vines generally do not climb. Poison Oak is generally found in more arid, sunny locations.

Poison Sumac has seven to thirteen paired leaflets per leaf stem and the leaves have smooth edge and pointed tips. It is generally found in wooded, swampy areas such as creeks and wetland areas. It is also important to remember that these plants may take on different characteristics during the various seasons and in different locations throughout the country.

- Sensitivity to these plants can vary and some people who do not appear sensitive may develop a sensitivity on later exposures.

- Exposures to poison ivy, poison oak or sumac are greatest in the spring and summer months when the oil (urushiol) is most abundant.

- Onset of the rash is from a few hours to several days after exposure. The skin becomes red, blisters appear, usually accompanied by itching. As symptoms progress, swelling and fever may develop.

- If you are going to be in areas where you know poison oak or ivy is likely to grow, wear long pants and long sleeves, and if practical, gloves and boots. Your best protection is to identify the plant and avoid contact. Barrier creams can provide even greater protection and should be used prior to work in affected areas.

- Be aware that the plant's oily resin sticks to almost all surfaces and can even be carried in the wind (on particles of dust) when there is a fire burning.

- If you think you have contacted poison ivy, follow these simple procedures:

    - Wash all exposed areas with cold running water as soon as you can. If this is done within five minutes, the water should neutralize or deactivate the urushiol in the plant's oil before it can bond with your skin and create a rash. Soap is not necessary and may even spread the oil.

    - If possible, change clothes. Wash all clothing outside with a water hose before taking it into the work area or home to prevent the oil from being transferred to furniture or rugs. Resinous oils can last on tools and clothing for months unless properly cleaned or laundered.

    - Mild rashes can be treated with lotions and by soaking in an oatmeal bath or covering the rash with wet compresses. Contact a physician for treatment of severe cases or if the irritation is not cleared up in three or four days.

PAINTING SAFETY

- Read and follow the manufacturer's directions carefully when applying any finishing materials, such as lacquer, enamel, paint, etc. if questions arise as to the hazards of the substance, refer to the applicable Safety Data Sheet (SDS).

- Personal protective equipment, as recommended by the manufacturer, shall be used when applying the products.

- Any spray painting must be done with an adequate amount of clearance from any potential sources of ignition. When possible, painting should be performed in isolated areas where ignition sources do not exist or are very minimal.

- Proper ventilation and/or adequate respiratory protection must be addressed before any application begins.

- Any flammable substances, such as paints, thinners, etc., must be stored in proper storage areas or in a UL listed metal storage cabinet.

- Any flammable substances removed from their original containers shall be stored in UL listed storage containers, if the original container will not meet the requirements.

- Bond metal containers when transferring flammable liquids, especially those that are known Class I flammable liquids. Refer to Material Safety Data Sheets for flammability information.

- Use the proper type of respirator at all times when applying toxic paints. If questions arise as to the toxicity of the paint, refer to the applicable Safety Data Sheet (SDS).

- All employees required to use respirators shall be included in the (ENTITY NAME) *Respiratory Protection Program* and trained on the proper use of the assigned respirator. The employees shall also be made aware of any limitations of the respiratory protection.

- Never have more than one day's supply of flammable substances outside of an approved storage area.

- Clean up all spills promptly and in accordance with the requirements on the Safety Data Sheet (SDS).

- Dispose of oily, paint or solvent-soaked rags in metal containers with tight fitting lids to prevent possible chemical reactions that may result in "spontaneous combustion."

- Use properly designed and erected ladders, scaffolds, elevated mobile work platforms, etc., when painting above ground level. Do not work or place elevated equipment within 10 feet of power lines.

- When using spray guns and compressed air:

    - Follow all rules concerning the safe handling of combustible and flammable materials.
    - Exercise caution in the handling of compressed air equipment.
    - Adjust and regulate the air pressure on the spray gun before starting work.
    - Clean the spray gun and other equipment thoroughly after each use.

- Read and follow the manufacturer's directions carefully when applying any finishing materials, such as lacquer, enamel, paint, etc. if questions arise as to the hazards of the substance, refer to the applicable Safety Data Sheet (SDS).

- Personal protective equipment, as recommended by the manufacturer, shall be worn when applying the products.

- If a spray booth is available, it should be used whenever possible. All employees should be trained on the use of the booth ventilation system and it should be in operation during every spraying operation.

OFFICE SAFETY

- Employees shall walk cautiously up and down stairs and use handrails whenever possible.
- Caution shall be exercised when walking around blind corners.
- Desk drawers and file cabinets shall be kept closed when not in use.
- Only one drawer of a file cabinet shall be pulled out at a time.
- Boxes, chairs, buckets, etc. shall not be used in place of ladders.
- The floor shall be kept clear of tripping hazards such as telephone cords, electrical extension cords, paper cartons, etc.
- Employees mopping or waxing floors shall place warning signs to alert co-workers of the potential for slippery floors. In addition, all liquid spills shall be cleaned up immediately and signs put in place until the hazard is alleviated.
- Material shall be stored on shelves in a manner to prevent falling; heavy objects shall be placed on lower shelves.
- Hallways and aisles shall be kept clear of obstructions.
- All emergency exits, electrical panels, fire extinguishers, and emergency equipment shall be kept clear of all obstructions.

- Solvents or other toxic substances shall be used only with adequate personal protection or in well-ventilated areas. Safety Data Sheets (SDS) should be accessible to all employees who are using these substances.

- Employees shall not attempt to clean, oil or adjust any machine that is running. If the machine is not equipped with a starting switch that can be locked in the “off” position, it shall be disconnected from the power source.

- Unsafe electrical cords, faulty equipment, or any other hazardous condition shall be reported and taken out of service until the repairs are completed.

- Broken glass and other sharp objects shall not be placed in wastepaper containers.

ERGONOMICS AWARENESS

Work Stations, Desks, and Counter-Tops

- Chairs should be easily adjustable and provide good lumbar support. If feet cannot rest firmly on the ground, a footrest may be provided. Chairs with a five-point base are recommended due to the stability that is provided.

- Sufficient leg room must be allowed for seated operators.

- Position the monitor directly in front of the operator. The operator’s eyes should be level with the top of the screen. Viewing distance between the user’s eyes and the screen should be approximately 16 to 22 inches.

- The equipment or sources of light should be positioned so that glare or bright reflections on the display screen are minimized.

- Adjust the height of the chair and/or keyboard so that the shoulder-elbow-arm angle is approximately 70-90 degrees.

- Keyboard heights and placement should be adjustable. Use a cushioned palm rest if needed to keep user’s hands and fingers in the same plane as the forearm and avoid resting wrists and forearms on sharp table edges.

- Work surface heights should range from 23 to 28 inches for seated work stations. In addition, your work area should be well organized with routine operations within easy reach and easily accessible.

- Document holders should be placed adjacent to and at the same height as the display screen.

- Operators should adjust positions frequently and get up and move around to help avoid fatigue.

Lighting, Noise and Heat

- Adequate but not excessive heat should be provided during cooler weather.

- Windows should be equipped with adjustable blinds.

- Use task lighting where extra illumination is required.

- Noise above 85 to 90 decibels (DBA) may be harmful to workers. When exposed to high noise levels, employees shall utilize hearing protection equipment to ensure proper working conditions.

- Whenever possible, isolate noisy machines and equipment in a remote location.

- Tailor work practices to prevent heat/cold-related disorders. Employees exposed to hot environments must know the appropriate medical steps to counteract life threatening situations such as hypothermia, heat stroke, heat exhaustion, and heat cramps.

AGGRESSIVE ANIMAL AWARENESS

- Any employees who are likely to encounter an aggressive animal during the performance of their normal duties, such as police officers, firefighters, meter readers, utility workers, etc. should be provided basic instructions to protect themselves.

- Call Animal Control immediately if you contact an aggressive animal.

- Clear the area of other people while waiting for Animal Control. Crowds may scare the animal and cause it to attack.

- Call for the animal's owner or handler.

- Do not run away unless you are certain of quickly reaching a place of safety.

- Back away slowly while continuing to speak in a firm, calm voice.

- Back against any available object to prevent an attack from the rear if more than one animal is present.

- If attacked, use a baton, billy club or stick to strike the animal rather than throwing anything at it. Sprays may also be useful as a deterrent if available, but should only be used if you are not downwind and have been made familiar with its use.

WORKPLACE VIOLENCE AWARENESS

Recognition

Recognize signs that may precede violence in your co-workers or customers and report them to your supervisor. Be cautious when you deal with a person who:

- Makes verbal threats on the job about getting “even” with co-workers or with your employer for disciplinary action or dismissal.
- Regularly threatens or intimidates others
- Claims people are out to get him or her
- Talks a lot about weapons
- Holds grudges
- Blames others for problems or setbacks
- Gets angry very easily and often
- Is defensive when criticized

Reporting

Report the following situations, events, or behaviors to your supervisor:

- A customer that becomes unusually angry with you because of perceived slow service, perceived poor conduct quality or lack of information
- A customer who talks abusively when making a telephone complaint
- A customer who threatens you or co-workers.

Respond

Respond effectively to a threatening or violent situation:

- Take all threats seriously
- Stay calm and be polite, look the person in the eye and do not argue or threaten
- Address each customer with a friendly greeting when you are on the phone or meeting the customer in person
- Be courteous at all times
- Notify the police if you are frightened-or use a warning signal to alert co-workers

- Ask your employer for training to help you deal with the public.

Protect
Protect yourself and co-workers on the job:

- Keep security and police department numbers near your phone.
- Know how to use an alarm or alert staff to possible danger.
- Develop a danger signal you can use to alert others to possible danger.
- Meet visitors in the lobby and escort them to your work area.
- Report any unusual packages to appropriate personnel, do not open suspicious packages.
- Lock purses and personal belongings in a desk or locker.
- Report signs of a break-in and missing items immediately.

Security
Follow security policies and procedures:

- Keep locked door locked, do not prop them open.
- Wear name tags or badges when required.
- Do not share access cards or entry codes.
- Do not allow non-employees (including ex-employees) to avoid sign-in and other visitor entry procedures.
- Do not engage in fistfights or other aggressive behavior at work.
- Do not bring a weapon to work or leave one in your car.
- Do not drink or use drugs at work, or work under the influence.
- Report all threats and security violations.

After-Hours Work
Take special precautions when working late or alone.

- Inform someone that you are working late.
- If possible, relocate your vehicle closer to the building.
- Advise the Police Department that you are working late and request a close patrol or escort when you leave.
- Lock the door to your work area if you are alone.
- Work near a phone.
- Work with lights on.
- Avoid using dark stairways or halls.
- If working with others, try to leave and walk to transportation together.
- Have your car keys ready as you leave the building.
- Check under and inside your car before unlocking it.
- Lock your car as soon as you are seated in it.
- Walk confidently and quickly to show that you know where you are going and what you are doing.
- Try to run away from an attacker if possible.
- Yell if you are being attacked to alert others.
- Give an attacker money or jewelry on demand.

INDOOR AIR QUALITY

Regular and thorough cleaning is important to ensure good indoor air quality. Unsanitary conditions attract insects and vermin leading to possible indoor air quality (IAQ) problems from animals, insects, allergens or pesticide use. The presence of dirt, moisture, and warmth also stimulates the growth of molds and other microbiological contaminants. While janitors or custodians typically clean administrative offices, you can also play an important role in promoting and maintaining workplace cleanliness. The following items should be considered to ensure proper air quality in your work environment.

General Items

- Make sure that the office is dusted and vacuumed thoroughly and regularly.
- Make sure trash is removed daily.
- Make sure that food is not kept in offices overnight.
- Look for signs of pests.

Spills and Drain Traps

- Clean up spills on carpets involving liquid immediately.
- Make sure to pour water down drain traps periodically to minimize possibility of backups and the potential to allow sewer gases in rooms.

Moisture

- Excess moisture is the result of condensation on cold surfaces, leaking or spilled liquids, or excess humidity in the air.

- Periodically check for condensates on cold surfaces such as window glass, sills or frames, and air-condition vents. A routine maintenance program would help identify potential issues before they escalate into long-term problems.

- Seasonally inspect and repair leaking roofs to prevent water from entering the building.

- Check crawl spaces for standing water.

- Drain, clean, and decontaminate drip pans, cooling towers, room air conditioners, humidifiers, and dehumidifiers on a regular basis according to manufacturer's specifications.

- Replace water-damaged carpets, furnishings, ceiling tiles or building materials as necessary.

Temperature and Humidity

- Generally, temperature should range between 72-76 degrees Fahrenheit to ensure adequate comfort factors in the workplace.

- Humidity levels should range between 30% to 60%.

Local Exhaust Ventilation

- Local exhaust fans are recommended to prevent air pollutants from accumulating and spreading beyond the local area or room where pollutants are generated. Areas where exhaust ventilation should be considered will include smoking areas, kitchens, and break-rooms.

Air Exchange Ventilation

- Have the heating, ventilating and air conditioning system inspected on a regular basis.

- Ensure that the ventilation system is working correctly to allow indoor air to be exhausted outside and outside air is drawn into the building.

- Make sure to periodically check unit ventilators, air supply, and return vents to ensure that they are working properly. To confirm that the air is flowing into the room from the air supply vents:

    - Hold a tissue or strips of lightweight plastic near the supply vents. If air is flowing, the plastic or tissue will flutter away from the supply vent.

    - Make sure that the airflow is not diverted or obstructed by objects.

Printing and Duplicating Equipment

- Printing and duplicating equipment can generate indoor air pollutants. Common types of equipment found in the workplace include photocopiers and computer laser printers. To reduce indoor air quality concerns with this type of equipment:

    - Make sure the equipment is located in a ventilated area.

    - Have safety equipment available such as dust mask, respirator, gloves, and eye protection to minimize contact.

- Provide routine maintenance for equipment to ensure that is operating correctly.

APPENDIX- FORMS

(See Excel Workbook)

Appendix – Forms

EXCEL WORKBOOK link