Forward

Cherokee County Safety Mission Statement

Cherokee County is committed to the safety and well being of its employees with the ultimate goal being to provide the safest working environment possible for our employees. We will ensure that policies and practices are developed and adopted that will best protect our employees, our facilities and our resources.

We are sincerely concerned with the safety and welfare of our employees and the public they serve. We acknowledge an obligation as an employer to provide the safest possible working conditions for employees and a safe environment for the public who use our services. It is the fingers, limbs, eyes, and lives of our employees that we are concerned about. They are irreplaceable. Livelihoods are diminished, or at worst destroyed, when employees are disabled. Employees and their families suffer the most when an accident occurs.

The primary purpose of this manual is to acquaint employees with the Entity's general safety rules and policies. It reflects the efforts of many people to establish reasonable, practical, safe work practices to prevent accidents. Our approach to accident prevention cannot be simple or basic; it is complicated by differences in tasks performed and differences in work environments. Departmental supervisors will explain rules and policies regarding departmental operations.

We can and must perform the tasks of government operations and public services without accidents. It is the responsibility of all employees to contribute to that goal. The attitudes that shall guide our efforts are as follows:

- Accidents are caused and can be prevented.
- Safety is a mark of skill and good common sense.
- We are sincerely interested in safety and are willing to put forth the effort to prevent accidents.
- Safety is a personal responsibility.
- No job is so important and no service is so urgent that we cannot take time to perform our work safely.
- We have a moral obligation to each other to do everything possible to prevent accidents.
- Work areas and equipment will be kept as safe as possible. As hazards are discovered, corrective measures will be taken.
- Employees shall report all unsafe conditions encountered in their work.
- No job shall be undertaken until it has been mastered by the employee and has been authorized by the supervisor.
- All injuries must be reported immediately.
- Compliance with safety rules is a condition of employment.
- We will achieve a good, mediocre, or poor occupational safety record in direct proportion to the amount of effort that is exerted. Wishful thinking or discussions concerning safety will not produce the desired results. Only when our actions meet our desires will we achieve the goal.

Safe work practices benefit the employee, the family, fellow employees, the entity, and society as a whole.

Safety Policy

TO: All Department Heads, Supervisors and Employees

RE: Safety Policy

It is the objective of Cherokee County to conduct all operations as safely and efficiently as possible.

To accomplish this, we are assigning the responsibility, authority, and accountability for safety to all department heads and supervisory personnel within their individual area of operations.

We are also appointing Robin Caldwell as Safety Coordinator. All employees and managers are responsible for active participation in the safety program activities; the Coordinator's role is to support and coordinate this participation to ensure the program functions efficiently.

All employees will have the responsibility of performing their own work in a safe and efficient manner and to report unsafe conditions to their department head or supervisor for prompt correction. All employees are also to report all work-related injuries to their supervisor in a timely manner.

In the case of vehicle operations, drivers will be expected to follow the principles of "Defensive Driving", to drive so as to prevent accidents in spite of the incorrect action of others and in spite of adverse driving conditions.

Signed by,

_____

County Manager

SAFETY PROGRAM ORGANIZATION

- **COUNTY MANAGER:** David Badger
- **COUNTY SAFETY OFFICER:** Robin Caldwell
- **SAFETY COMMITTEE:**

  CHAIRPERSON: Robin Caldwell

  SECRETARY: Haley Rose

  MEMBERS:
  (1) David Badger
  (2) WC King
  (3) Roy Dickey
  (4) Melody Johnson
  (5) Dedra Cook
  (6) Candice Laney
  (7) Joe Wood

Safety Responsibility

County Manager

For the Risk Control program to function effectively, it must have the support and guidance of the top officials. The County Manager is responsible for setting up and supporting policies and procedures to include:

- An active Safety Committee, consisting of department heads and other designated persons, meeting on a scheduled basis.
- A thorough and effective Accident Investigation process to include reporting and recording procedures, and a written report on actions taken to prevent recurrence of accidents, including action taken against individual violators of safety rules and practices.
- A training program for employees and supervisory personnel directly related to avoiding a possible injury or illness in the area of assigned operations.
- A periodic audit of all premises, equipment, and materials so that unsafe conditions and actions can be identified and corrected.
- A communications system established and maintained to ensure that all personnel are contacted regularly about the importance of safety in all operations.
- Specific goals established for the Risk Control program, with progress toward those goals measured on a monthly basis.

The County Manager is directly responsible for all safety efforts in the organization. Enthusiasm and faith in the safety program must be such as to maintain the interest and support of all Department Heads and Supervisors. This attitude is reflected down through the Department Heads and Supervisors to the individual workers. The specific accident prevention duties include the following:

- Active participation and direction in the planning of details for accident prevention which will bring the best results for all employees. Expansion and adaptation of programs and procedures to all departments within the organization.
- Demonstrated support of the program through personal participation and through approval of necessary expenditures for such items as personal protective equipment, mechanical guards, good lighting, good ventilation, and other physical improvements to the working environment, as well as expenditures for safety training materials, awards and incentives, etc.

- Continuing review of the effectiveness of accident prevention efforts in various sections and departments, with necessary follow-up and bolstering of efforts when required.

Safety Coordinator Responsibility

Implement and administer the Risk Control program.

1. Maintain records as necessary to comply with laws and objectives of the safety program. These records should include:

    - Supervisor's Accident Investigation Reports
    - Minutes of all Safety Meetings
    - Safety Program status reports

2. Submit status reports to Safety Committee at least quarterly.

3. Make periodic visits to all buildings/operations to assist and consult in developing safe work methods, accident investigations, training, and other technical assistance.

4. Analyze accident reports and investigations weekly.

5. Act as Chairperson of the Safety Committee.

6. Promote compliance with all Federal, state and local laws, and established safety standards (OSHA).

7. Analyze accident reports and investigations quarterly.

8. Assist Supervisors in all matters pertaining to safety.

9. Maintain contact with available sources of topical safety information such as the following: American Society of Safety Engineers (ASSE), National Safety Council (NSC), Department of Environment, Health & Natural Resources (DEHNR), North Carolina Association of Local Government Employee Safety Officials (NCALGESO), North Carolina Department of Labor (NCDOL), North Carolina Occupational Safety & Health Administration (NCOSHA) and North Carolina Industrial Commission (NCIC).

10. Provide/arrange training programs for Supervisors.

11. Represent management in the implementation of the Safety Policy.

12. Recommend immediate corrective action in cases of hazardous operations.

Department Head and Supervisor Responsibility

Management will demonstrate support for the Risk Control program through every visible means, including:

- Providing a safe and healthful work place.
- Providing personal protective equipment as well as machine guards and safety devices.
- Reviewing accident records and accomplishments of the safety program with the Safety Committee.
- Evaluating effectiveness of the safety program and recommending changes.
    - Participating directly and/or indirectly in safety activities as may be required to maintain the enthusiasm and interest of all concerned.
    - Abiding by safety rules and regulations when exposed to conditions governed by the rules.
    - Directing that any flagrant disregard of safety rules and regulations by employees be grounds for dismissal as outlined in Personnel Policy.

Because of the close relationship with the employees and intimate knowledge of operating procedures, Supervisors are the key persons in the scheme of loss control.

Supervisors of each department are charged with the responsibilities of quality and quantity of production within that department, and therefore are responsible for the work conduct of same. Supervisors should be afforded the necessary knowledge to carry out their duties with efficiency and safety. Supervisors must:

- Have a thorough knowledge of the safety policy.
- Provide instruction and training to workers so that they may fulfill their job in a safe manner. (See section on Training New Employees.)
- Make daily inspection of the department to ensure that no unsafe conditions or unsafe practices exist.
- Initiate immediate corrective action where unsafe conditions or practices are found. When a capital expenditure is required to make necessary corrections, a written report shall be submitted to the County Manager and the Safety Coordinator.
- Properly complete accident reports and investigate all accidents to determine what must be done to prevent recurrence of a similar accident.
- Be familiar with procedures that must be followed in the event of an emergency.
- Enforce safety rules and regulations of the organization.
- Provide good example by safe work habits.

Employees

To assist the employees in developing a keen "safety awareness", the following responsibilities are assigned:

- To abide by the safety rules and regulations of the organization.
- To regard the safety of fellow workers at all times.
- To report any unsafe condition to the Supervisor.
- To contribute ideas and suggestions for improving the safety of conditions or Procedures to the Supervisor.
- To use individual knowledge and influence to prevent accidents.
- To attend safety training sessions.
- To report all accidents and injuries immediately.

General Rules

General Safety Procedures

Every employee is required to abide by safety rules, act in a safe manner, and be knowledgeable of potential hazards related to their job. Lists of job specific safety procedures must be developed locally. The following general safety rules apply to all locations and are to be enforced through the disciplinary policy:

- Report all personal injuries, no matter how minor, to your immediate supervisor as soon as possible. This must be done whether the injury resulted in lost time from work or required medical attention or not. Prompt reporting of injuries is a requirement under the Workers' Compensation Law.
- Do not take any unnecessary chances or work under hazardous conditions. Learn the right way to do your job. That will be the safe way. If you do not thoroughly understand the job or task ask your supervisor for further instructions.
- Avoid horseplay and practical jokes on the job. Any employee participating in such activities will be subject to disciplinary action.
- Drinking of alcoholic beverages or use of illegal drugs on the job, or during working hours, is prohibited. Any employee reporting to work under the influence of alcoholic beverages or illegal drugs shall be subject to disciplinary action, up to and including termination, as outlined in personnel policy.
- Observe and obey all safety rules, signs, warnings, and instructions.
- Work at a speed consistent with Safety. "Foolish Hurry" such as running in passageways or on stairs is dangerous. Running on the job is prohibited, except in obvious extreme emergencies.
- Use the handrails on stairs or on elevated places.
- Use an appropriate ladder or other climbing device to reach elevated work. Jumping down from an elevation such as a ladder, bench, or platform can result in injury. "DON'T DO IT".
- Always inspect tools and equipment before use. Report defects to supervisors and other potential users. Do not use tools and equipment that are defective.
- Work clear of suspended loads; if a load is moved above where you are working, stand aside until it has passed by.
- Operate only the machinery or equipment you have been authorized and trained to operate safely.
- Remove jewelry such as rings, identification bracelets, etc., in work involving climbing, materials handling, or operating mechanical equipment.
- Never reach over moving parts of machinery or equipment.

- Never operate machinery or equipment with guards removed.
- Report to work in appropriate clothing suitable for the type of work you perform. This includes footwear designed to protect your feet and to avoid slipping. Avoid wearing loose-fitting clothing or jewelry near machinery or equipment with moving parts. Loose hair longer than shoulder length must be tied back behind the shoulders when working around moving machinery.
- Always use all safety equipment and personal protective equipment provided for your job.
- **Good housekeeping is always necessary in order to prevent accidents. Do not allow waste to accumulate in your work area. Dispose of waste materials properly.**
- **Report any unsafe conditions or unsafe acts to your supervisor immediately.**
- Common sense, along with health and sanitation rules, must be observed for the welfare and consideration of other employees.
- Repeat violators of safety rules and procedures may be subject to dismissal.

Safety Committee

Safety Committee Mission Statement

To work together as a team for the express purpose of identifying hazards in the workplace before accidents occur (in both facility & project processes).

Once hazards are identified, we then hope to minimize our employees' risk by changing exposure to the hazards by educating (increasing awareness), administering (ruling), or by engineering (re-configuring) the hazards out of the workplace.

A Safety Committee provides the important function of improving employee participation in the safety program by tying the knowledge of employees with the experience of supervisors. A Committee provides a channel for action on suggestions and ideas submitted by the employees. It encourages a closer relationship between management and employees, improving attitudes toward safety and understanding of problems.

The Safety Committee is an excellent means for maintaining good employee and public relations and for keeping morale on a high plane.

By its observation, thinking and discussions, the Committee provides the stimulation and suggestions necessary to maintain safe conditions and safe workers.

1. Suggested Committee membership consists of:

    - Safety Coordinator as Committee Chairperson
    - County Manager
    - Fire Marshal
    - Maintenance Director
    - Human Resources
    - Fleet Administrator
    - Sheriff's Office designee
    - Health Department designee

2. The Committee should meet on a regularly scheduled basis: monthly, bi-monthly, or quarterly.

3. The Committee's primary purpose should be to assist the Safety Coordinator in the formulation and implementation of the safety program. To accomplish this, the Committee should:

- Draft safety rules and regulations and recommend approval for adoption by management.
- Devise methods of promoting safety among all employees.
- Review accident records to identify trends and to gauge effectiveness of the safety program.
- Discuss difficult accident problems and make suggestions for preventive measures.
- Maintain minutes of all Committee meetings and recommendations, signed by the Safety Coordinator.
- The Human Resource Officer will keep a copy of Report of Injury, Illness or Accident Report.
- Human Resource Office will keep required OSHA forms
- The Fire Marshall and Maintenance Director will make periodic visits to all buildings/operations to assist and consult in developing safe work methods, accident investigations, training, and other technical assistance.
- The Human Resource Officer, Fleet Administrator and Safety Officer will review any necessary accidents.

Safety Committee Meetings

Notices of meetings, preferably accompanied by an agenda, should be sent to each member of the Committee.

The frequency of meetings varies, depending upon the type of committee and the program. There should be sufficient items of business for at least one meeting a quarter.

The following is presented as a suggested order of business that may be adopted for Safety Committee meetings in general:

- Call to Order.
- Roll Call by the Secretary. Names of members and others present should be recorded. Members who cannot attend should notify the Secretary in advance, and the reasons for absence should be noted. Visitors should be recognized.
- Approval of previous meeting minutes and discussion of unfinished business. All matters on which definite decisions have not been made are brought up for reconsideration.
- Review of Accidents and Statistics. Classification by cause should be determined and approved. Responsible conditions should be determined for every accident and preventive measures should be discussed. Where appropriate, recommendations for preventive measures should be formulated and included in minutes.

- Inspections and Recommendations. An inspection of the facility should be made on a scheduled basis. A record of the inspection time, territory covered, unsafe conditions found, and recommendations made should be included in the minutes. Definite action, not necessarily favorable, should be taken on recommendations and reported to the Committee.
- Posters. The Chairperson should question members as to the condition of bulletin boards in the jurisdiction of the Committee.

- New Business. The Chairperson should appoint subcommittees to arrange for:

    - Speakers from outside the organization
    - Accident statistics
    - Revision of safety rules and shop practices

- Adjournment. Reports (meeting minutes) should be taken, prepared and circulated by the Secretary, after approval by the Chairperson. The reports must record accurately all decisions made and actions taken or recommended, since they serve as a means of keeping management informed of the group's work and as a follow-up. It is important that reports be completed promptly.

Chairperson

Duties

_____ Arrange for Meeting Place

_____ Notify Members of Meeting

_____ Arrange Program

_____ Make Time Schedule for Meeting

_____ Review Previous Reports and Materials for Meeting

Secretary

Duties

_____ Prepare Reports of Meetings

_____ Distribute Minutes

_____ Report Status of Recommendations

Members

Duties

_____ Report Unsafe Acts & Conditions

_____ Attend All Safety Meetings

_____ Report All Accidents

_____ Investigate All Lost Time Accidents, Including Specific Causes of the Accident and Specific Recommendation to Prevent Recurrence

_____ Contribute Ideas and Suggestions for Improvement of Safety

_____ Influence Others to Work Safely

_____ Make Inspections

SAFETY COMMITTEE MEETING

DATE _____, 20___

A. Attendance:

_____
_____
_____

B. Review of Previous Minutes:

_____
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C. Review of Suggestions Received at Prior Meetings:

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D. New Suggestions Submitted:

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E. Special Topics Covered:

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_____

Copies to:_____ Submitted by:_____

New Employee Orientation

When a new employee comes to work, they immediately begin to learn things and form attitudes about their workplace, job, boss, and fellow employees. They do so whether or not the employer makes an effort to train them. So that new employees may form good attitudes, it is desirable for the employer to give them the right kind of start.

At the beginning of employment, there are many administrative, procedural, and regulatory matters to address. Each new employee should know the County's safety policies, but the amount learned during the introduction procedure is limited. Unfamiliarity with surroundings, interest in many matters of seemingly more immediate concern, the detailed procedure of getting on the payroll – all make it difficult for the employee to absorb and retain much safety instruction. It is necessary, therefore, to consider what safety information must be first and the best way to present it. Keep in mind the necessity of covering critical safety issues *before* an employee is put on the job and allowed to work.

On-the-job training is the most effective method of setting efficient and safe work patterns for employees to follow. The importance of job training cannot be overemphasized, as too often it is done inadequately. Supervisory performance is directly related to the degree to which knowledge and skill has been acquired by the people who work for a supervisor, permitting them to work with the best possible effectiveness and the least disturbance in work activity. If training is ineffective or incomplete or if instruction is improper, results will show in poor work and accidents. To be effective, job training will include safe procedures – the recognition of and how to avoid hazards – as an integral part of work methods.

Orientation

Safety must be an integral part of the new employee orientation training program. The goal of the orientation safety training is to give the employee the knowledge necessary to be able to work without injury to self or to others. Orientation Safety Training will consist of the following:

- Initial orientation
- Basic safety training
- Job Safety Training and OJT
- Supervisory observations
- Performance Reviews

Initial Orientation

During initial orientation new employees receive information concerning basic safety and health policies and procedures. Initial orientation will usually take place within the first month of employment. Items to be covered are shown on the checklist at the end of this section.

Basic Safety Training

Basic safety training is a continuation of initial safety orientation. This training may repeat / review some of the materials covered in the initial orientation. Basic safety training begins the process of job specific training. HR, the employee's department head, and the employee's immediate supervisor may share responsibilities for this training. Items to be covered are shown on the checklist at the end of this section.

Job Safety Training

In job safety training, the new employee receives the job specific information he or she needs to do the job safely. The employee's immediate supervisor is typically responsible for this type of training, and often this training is part of the on-the-job instruction. Where orientation to this point is more focused on general policies, procedures, and safety rules, job safety training informs the new employee of the specific hazards related to his or her job, and what actions are necessary to avoid those hazards.

This phase of safety training is on going. It starts when the new employee enters his or her new department (before any work is performed); it should continue through the employee's entire employment history.

Job Safety Training Techniques

Supervisors should be well versed in and apply the following methods of job instruction for all employees.

Get ready before job instruction is started.

- Break down the job into the important steps of operations stressing the key points, one of which is safety.
- Have proper tools, materials and supplies available.
- Arrange the workplace the way the worker is expected to keep it.

Prepare the employee to learn.

- Put the employee at ease.
- Find out what the employee already knows about the job.
- Put the employee in the best position to see and to learn.

Present the operation.

- Demonstrate with tools or equipment on the job, giving complete explanation of each step.
- Take important steps or operations one at a time.
- Explain, clearly and completely, and actually show the how and the why of each step or operation.
- Emphasize the hazards and how to avoid accidents.
- Repeat the demonstration as often as necessary.

Let the employee try.

- Have the employee do the operation and correct any errors immediately.
- Have the employee repeat the operation and explain the what or why of each step.
- Question the employee on the hazards of the job and be sure they are understood.
- Have the employee repeat the operation until you are completely satisfied.

Follow-up.

- Check back to see if employees need further instruction and encourage them to ask questions.
- Gradually lessen close observation, but let employees know help is available at any time.
- Each employee should completely understand the following in order to have a good foundation in safety training:
    1. Management is sincerely interested in preventing accidents.
    2. Accidents may occur, but it is possible to prevent them.
    3. Safeguarding equipment and the workplace has to be thoroughly done, and management is willing to go further as needs and methods are discovered.
    4. Each employee is expected to report any unsafe conditions that are encountered in the workplace to the supervisor.
    5. The supervisor will provide job instructions. No employee is expected to undertake any job until authorized to do so by the supervisor.

6. If an employee suffers an injury, even a slight one, it must be reported to the supervisor immediately.

In addition to these points, any safety rules that are conditions of employment, such as wearing of eye protection or safety hats, etc., should be understood and enforced at once. They should also be told that any flagrant violations of safety rules would result in immediate disciplinary action up to and including discharge.

Supervisory Observations

Supervisors must be alert to the actions of new employees. Supervisors are required to regularly observe the job procedures followed by new employees to be certain they are working safely and that they know required safe job procedures. Planned observations will allow the supervisor to regularly communicate with the new employee, and will help establish good safety habits early on.

Each observation should be discussed with the employee. If the employee is doing the job correctly and following safe job procedures, he or she should be complimented and thanked for doing a good job. If the employee is not working safely, the supervisor should use the observation as an opportunity to provide additional safety training.

Supervisors should keep records of these observations/discussions for follow up in performance reviews.

Performance Reviews

Department heads and/or supervisors are required to meet with each new employee at the end of the probation period, annually and following an accident to discuss their performance and to give them the opportunity to ask questions and state concerns. Safety should be an important element in these reviews. A brief written record of each review should be maintained in the employee's personnel file.

SAFETY ORIENTATION TRAINING CHECKLIST

EMPLOYEE NAME: _____ JOB: _____

EMPLOYEE INITIAL	TRAINER INITIAL	DATE	TOPIC COVERED
Initial Orientation			
_____	_____	_____	Management policy re: Safety and Health
_____	_____	_____	Employee's responsibility to work safely
_____	_____	_____	Dress Code and safe dress
_____	_____	_____	Accident reporting procedures
_____	_____	_____	How to make safety suggestions
_____	_____	_____	Return to Work policy and program
Basic Safety Training			
_____	_____	_____	"Employee Safety Instructions" from handbook
_____	_____	_____	Basic Safety Rules
_____	_____	_____	How to report unsafe conditions
_____	_____	_____	Housekeeping requirements
_____	_____	_____	Smoking regulations
_____	_____	_____	Safety Committee structure and activities
_____	_____	_____	Accident reporting procedures
_____	_____	_____	Medical treatment authorization procedures
_____	_____	_____	General Hazard Communication Training
_____	_____	_____	Applicable emergency and evacuation procedures
Job Safety Training			
_____	_____	_____	Personal Protective Equipment requirements/how to use
_____	_____	_____	Emergency procedures
_____	_____	_____	Authorization to use machinery/equipment
_____	_____	_____	Safety procedures / hazard controls for the specific job
_____	_____	_____	Job specific Hazard Communication Training (MSDS's)
_____	_____	_____	How to make safety suggestions
_____	_____	_____	Safe Lifting training

Other specialized training (lift truck licensing, electrical safety, ergonomics, workstation adjustment, etc.):

_____	_____	_____	_____
_____	_____	_____	_____

Maintenance of Safe Working Conditions

Inspections

A vital factor in accident prevention is the detection and correction of hazards before an accident is caused. The findings of an inspection, when combined with an analysis of past accidents, are a sound basis on which to base necessary corrective action.

Inspections are made by various individuals and agencies with the same common interest of accident prevention, but with different secondary interests. Some of the various agencies and procedures involved are as follows:

Self-Inspection

- Safety Committees should make periodic inspections of the facilities and work sites to identify hazards, to assess exposures, and to determine level of compliance with regulatory and/or other requirements.

- Departmental supervisors are responsible for making a daily informal inspection of their department.

- The Safety Coordinator should make periodic inspections.

Insurance Inspection

- Insurance Company or Broker representatives may make periodic inspections to look at risk control exposures. They may focus on employee injuries, injuries to the public, vehicle accidents, or issues involving property, such as fire protection.

- Representatives should be required to make an appointment through the County Manager or the Safety Coordinator prior to any inspection visits.

- The Safety Coordinator and Department Representative should accompany the representative during the inspection.

- The representative should be invited to summarize their findings with the County Manager or the Safety Coordinator prior to departure.

Governmental Agency Inspections

- Municipal and state agencies
    - The County Manager should be made aware of any inspector on the premises.
    - The County Manager and department representative will accompany the inspector at all times.
- OSHA Compliance Officer:
    - To carry out the purposes of the Occupational Safety and Health Act (OSHA), a Compliance Officer, upon presenting proper credentials, will be turned over to the County Manager and the Safety Coordinator. Under no circumstances will an inspection begin without these representatives being present.
        1. The Compliance Officer is authorized to enter without excessive delay and at reasonable times any establishment, work place, or environment where work is performed by an employee of the employer. This is not applicable to the Consultative Officers.
        2. The Compliance Officer is authorized to inspect and investigate during regular hours and at other reasonable times, and within reasonable limits and in a reasonable manner, any such place of employment. He may observe any conditions, structures, machines, apparatus, devices, equipment and materials. He can question privately any employer, owner, operator, agent or employee.
        3. The Compliance Officer can make a formal request that a representative of the employees be permitted to participate in the inspection, such formal request must be complied with by the individual in charge. The Safety Coordinator and appropriate department representative will accompany the Compliance Officer at all times while s/he is on the premises.
        4. In the exit interview, the Compliance Officer will discuss the findings with management and will indicate what violations may be cited. The citations and penalties will be forwarded by mail.

Departmental Safety Inspections

Planning & Conducting Inspections

Departmental safety inspections are an important part of any organized effort to control accident exposures and prevent personal injuries. They should be a routine with every supervisor.

Here are some tips on how to plan for inspections and what to look for:

- Look at the record. Before the inspection, analyze past accidents to determine specific causes and high hazard areas or operations. Give special attention to these during the inspection.
- Unsafe conditions and unsafe acts. Both unsafe conditions and unsafe acts are contributing factors in most accidents. An unsafe condition, in addition to being a direct cause of accidents itself, often requires, or at least suggests, an unsafe act.

Check for the Following Unsafe Conditions

- Floors and floor openings

  1. Are floors in good condition, free of broken and pitted surfaces?
  2. Are floor coverings, such as carpets and mats, in good condition?
  3. Are floor openings properly protected?
  4. Are stairways equipped with appropriate handrails, guardrails?
  5. Check floors for slippery conditions - a major cause of falls.

- Aisles and passageways

  1. Are aisles and passageways kept clear?
  2. Are they free of tripping hazards?

- Machines

  1. Are belts, pulleys, gears, chains and sprockets guarded?
  2. Are effective point of operation guards in use?
  3. Is additional guarding needed?

- Electrical

  1. Are extension cords used appropriately, i.e., *not* in place of permanent wiring?
  2. Are electrical cords stretched across the floor without appropriate floor covers?
  3. Are electrical cords free from damage (exposed wires, missing grounding pins)?
  4. Are electrical equipment, wiring and fusing up to standards?
  5. Are portable electrical tools grounded?

- Hand Tools

  1. Are the right tools for the job used?
  2. Are tools in good condition?
  3. Are cutting edges sharp?
  4. Watch for mushroomed heads, split handles and other defects.

- Housekeeping

  1. Is the department clean and orderly?
  2. Are materials properly stored out of walkways or paths to exits?

- Storage of materials

  1. Are materials and supplies properly stacked - within recommended heights?
  2. Are flammable materials properly handled and stored?
  3. Are all chemical containers appropriately labeled?

- Lighting

  1. Is lighting in work and storage areas, passageways and stairways satisfactory?
  2. Check for burned out bulbs.
  3. Check light guarding and reflectors.

- Ventilation

  1. Is there good general ventilation?
  2. Is there adequate local ventilation to control possible health hazards?

- Ladders

  1. Are portable ladders of standard construction and in good condition?
  2. Are fixed ladders of standard construction and securely fastened?

- Fire Extinguishers

  1. Are enough fire extinguishers of the right type available and easily accessible?
  2. Is all fire suppressant equipment in proper working order?
  3. Are fire extinguishers properly mounted?
  4. Are fire extinguishers inspected on a monthly & annual basis per OSHA requirements?

- Exits

  1. Are emergency exits adequate in number and location and properly identified?
  2. Are any exits blocked or locked, preventing escape to the outside?
  3. Are emergency lighting and exit lights properly maintained?

Watch for the Following Unsafe Acts of Employees

- Using equipment without authority or training.
- Unstable or disorderly stacking or arranging of material.
- Operating equipment at unsafe speed.
- Using defective tools or equipment.
- Unsafe loading of trucks, skids, racks, conveyors, etc.
- Lifting improperly or handling loads that are too heavy.
- Using improper tools or equipment.
- Using tools or equipment improperly.
- Making guards or safety devices inoperable.
- Failure to use personal protective equipment.
- Repairing or adjusting machinery in motion or equipment that is under pressure or energized.
- Horseplay.

Additional Inspection Procedures

Well-planned safety inspections help in detecting hazards before an accident occurs. Approached properly, they help to convince employees of your concern for their welfare and are an indication that with you, safety is not an off-again-on-again proposition.

Removing hazards increases operating efficiency because safety and efficiency go hand in hand.

A record should be kept of periodic inspections required by state and local laws. This usually applies to elevators, boilers, unfired pressure vessels and possibly some other equipment. Supplementary inspections should be scheduled and made by qualified personnel of the organization.

A schedule of periodic inspections by qualified personnel should also be established for hoisting equipment, automatic devices, conveyors, pumps, power trucks and other equipment which requires specialized knowledge for complete inspections to be completed.

Follow Through

Most safety inspection activity will generate recommendations or a list of things that need to be done. Be sure to set up documentation and follow up procedures to be certain corrective actions are taken. Failure to do so may result in needless injuries.

EMERGENCY ACTION PLANS

A. Each location will develop a written action plan for emergencies.

1. The plan will include, as a minimum, actions to be taken in the event of:
    a. Fire
    b. Bomb threat
    c. Power failure
    d. Medical emergencies, such as a heart attack or choking
    e. Chemical spills
    f. Severe wind storm, hurricane or tornado
    g. Acts of terrorism

2. The following elements, at a minimum, shall be included in the plan:
    a. Emergency escape procedures and emergency escape route assignments
    b. Procedures to be followed by employees who remain to operate critical operations before they evacuate
    c. Procedures to account for all employees after emergency evacuation has been completed
    d. Rescue and medical duties for those employees who are to perform them
    e. The preferred means of reporting fires and other emergencies

3. All emergency plans must include appropriate emergency phone numbers. Emergency phone numbers must be posted in a designated area.

4. Employees designated to assist in the evacuation must be trained in their duties. In addition, the plan must be reviewed with all employees covered by the plan.

B. Each location will insure that trained first-aiders are available during operating hours. At least 2 employees should be trained so that at least one is always available. Because County employees are spread over many locations, it may be necessary to have two trained first-aiders at several locations. Plans should contemplate coverage for facilities with small employee populations.
It is a good idea to train more than 2 to accommodate turnover, absences, etc. Training can be arranged through the EMS Office.

A log as shown on the following page will be maintained to show who is certified to administer first aid care.

C. Emergency posters describing actions to be taken in the event of cuts, heart attacks and choking should be posted as appropriate.

FIRST-AIDERS

Name	Job/Department	Phone	Date of Training	Expiration Date

Emergency Action Plan

POLICY

This Emergency Action Plan is intended to provide guidelines on general evacuation and means of egress along with inclement weather procedures that will help provide protection against injury to our employees and customers, damage to property, and disruption of business operations. All employees are to become familiar with the provisions of this plan in an effort to make their responses automatic in the event of a possible fire or other emergency requiring evacuation.

PROCEDURE

Fire and Emergency Evacuation

The first employee aware of a fire in the building is to alert other occupants by activating the fire alarm system. The alarm consists of _____.

If you are in the vicinity of the fire when it is discovered, do not attempt to extinguish it unless you have been trained in the proper use of a portable fire extinguisher, the fire is very small in size, and it can be easily controlled without placing yourself or other building occupants in danger. Remember, the primary concern of our business is not the loss of property but the safety of our employees and customers.

In the event of a fire or emergency that requires evacuation of the building, each employee is to immediately leave the building by the nearest available exit. If time permits and without placing an employee in danger, a call to the fire department is to be made by _____ before evacuating the building, If time does not permit a call from the building, it is to be made outside from an available car phone, cellular phone, or neighboring business, by _____ immediately after evacuating the building.

The _____ is assigned to act as a fire warden to ensure all employees have evacuated the building.

Dial 911 for fire department or other emergency services.

Once outside the building, all employees are to assemble in the _____ where an accounting is to be made by each department head to ensure all assigned employees have safely exited the building.

Employee Training

Provisions of the Emergency Action Plan will be reviewed with all assigned employees by the Supervisor/Department Head:

- when the plan is developed,
- upon initial employee hire or assignment,
- when an employee's designated actions per the plan change, or
- when the plan is updated or changed.

Records of this training should be maintained showing the review date, employee name, and person conducting the review.

A copy of the written plan is kept in the _____ and available for review.

PROCEDURE

Inclement Weather Procedures

Tornadoes

When the weather is severe, all efforts will be made to listen for weather reports regarding the changing weather conditions in our area. If a tornado warning is issued, all employees will be informed immediately through the intercom system and/or verbally within each department. Employees will be instructed to take shelter, when deemed appropriate, in low-lying areas (basements), bathrooms, closets, and/or hallways away from windows. Employees will be instructed to stay in their sheltered area until they are notified that it is clear.

If an injury has occurred, emergency response will be addressed immediately by **dialing 911**. If property damage has been sustained, appropriate safety measures will be addressed by the Maintenance Department and Building Inspection Department to ensure that other employees are not injured due to debris (glass, metal) or other potential hazards (electrical shorts, flooding).

If required, restoration procedures will be addressed immediately by the Maintenance and Building Inspection Departments to start the recovery process. This may include recovery of critical documents, computer backup tapes, and insurance policies; setting up a temporary location; identifying temporary payroll procedures; clean up of building; along with other key recovery procedures deemed necessary.

Hurricanes/High Winds/Flooding

Preparations for the hazard are to be made within each department to protect employees from injury and to safeguard building & property. Depending on the hazard, preparations may include: backing up computers, storing critical documents, removing equipment/paper from areas known to flood, boarding up windows, and sending employees home before the weather becomes too serious.

Once the emergency passes, employees will be notified of procedures to follow for returning to work. This will be conducted via the telephone and/or radio. If the building sustains damage, restoration procedures will be addressed by the Maintenance and Building Inspection Departments.

Chemical Spills

If a large spill occurs that requires evacuation, follow the procedures identified by emergency personnel (Emergency Management, Fire Department, Police Department). Be aware that prior to evacuation, special procedures may need to be followed. This may include turning off electrical power to the building. Once the spill has been cleaned-up, employees will be notified

of procedures to follow for returning to work. This will be conducted via the telephone and/or radio. If the building sustains damage, the Maintenance and Building Inspection Departments and Department Managers will address restoration procedures.

Accident Reporting and Investigation

Accident Recordkeeping

The purpose of recordkeeping is to discover patterns and trends of occurring accidents to direct risk control efforts in the right direction. Effectiveness of the Risk Control Program can be gauged by keeping accurate statistics.

The following recordkeeping procedures will be used in the Safety Program:

Accident Report

- All injuries, no matter how slight, must be reported immediately to the injured employee's supervisor.
- Supervisors are responsible for investigating all accidents immediately to determine what corrective action should be taken to prevent future similar accidents.
- Supervisors are to report accidents to the Human Resource Officer or as otherwise instructed in the County's claims handling procedures and claims manual.

OSHA Recordkeeping

- The Human Resource Officer will maintain the OSHA Form 300, Log of Occupational Injuries and Illnesses. OSHA requires that each recordable case be entered on the log no later than six (6) days after the incident.
- The Human Resource Officer will post the completed OSHA 300A Summary Form for the period Feb 1 to April 30 each year. The Summary Form must be posted in a visible location so that employees are aware of injuries and illnesses occurring in their workplace.
- The Human Resource Officer will maintain a record of the Form 19, "First Report of Injury" (NCIC Form) for all incidents which are entered on the OSHA Form 300. The Form 19 is generally used in lieu of the OSHA Form 301 and kept with the OSHA 300 Log.

Accident Summary and Analysis

- The Safety Coordinator shall prepare a quarterly summary and analysis of all accidents and/or incidents. The analysis is to be presented to management and the Safety Committee, and should be included in Safety Committee meeting minutes.

Procedure for Medical Treatment

- Employee reports the accident to the Supervisor.
- Supervisor, depending upon the extent of injury, arranges to:
  - Minor Injuries - have temporary first aid treatment administered followed with treatment by the PA on staff with the County.
  - Major Injuries – Call 911 or transport employee to Murphy Medical Center with a follow-up appointment with the PA on staff with Cherokee County.
- Within 12 hours of the incident, the supervisor investigates the incident and completes the Supervisor's Incident Investigation Report to show the cause(s) of the accident and specific recommendations to prevent recurrence. The supervisor forwards the report to the Human Resource Officer for review and Workers' Compensation insurance purposes.
- The Human Resource Officer will report claims to the Claims Administrator by completing the State Workers' Compensation form (Form 19) or by using telephonic or reporting:

Telephonic Reporting:	**1-877-NCACC RM (622-2276)**
Internet Reporting:	**WWW.NCACC.ORG**

Procedure for Disability (Lost Time) Accidents

- Employee reports accident to supervisor.
- Depending on extent of injury, employee is administered first aid and/or transported to a physician or hospital for treatment (see above).
- Supervisor completes Supervisor's Accident Investigation Report that investigates cause of accident with specific recommendations to prevent recurrence and forwards it to the proper authority for review and Workers' Compensation insurance purposes.
- Human Resource Officer reports claims to the Claims Administrator by completing the State Workers' Compensation form (Form 19) or by using telephonic or reporting:

Telephonic Reporting:	**1-877-NCACC RM (622-2276)**
Internet Reporting:	**WWW.NCACC.ORG**

Human Resource Officer and the Safety Coordinator will determine which accidents will be reviewed at Safety Committee meetings. Specific recommendations must be made and entered into the reports of meeting.

NOTE: For serious injury cases the local claims coordinator should follow up to make sure the injured employee has been contacted by the claims adjustor and case manager.

If an employee is absent for a few days due to a seemingly minor injury, call the employee as a kind of "friendly reminder" to show we are interested in their well being and to urge them to return to work as soon as possible. If you are concerned that an employee is trying to take advantage of the system, discuss your concerns with the adjustor.

Tips on Accident Investigations

When Should Accidents be Investigated?

Every accidental injury should be investigated and documented as soon as possible. The longer you wait, the harder it is to get the facts. As time passes, evidence is lost and important details are quickly forgotten. Prompt investigation and documentation assures more complete and useful information.

Why Should They be Made?

Accidents do not just happen - they are caused. One of the purposes of accident investigations is to find out what causes them. Once this has been determined, action to eliminate or control the cause can be taken.

Even minor injuries should be investigated, for the seriousness of an accident is frequently a matter of luck. Eliminating the cause of a minor injury today may prevent a serious accident tomorrow. If it happened once - it could happen again.

Who Should Make Them?

The Supervisor should conduct an investigation. While others will probably also want to look into the situation, here are three good reasons why the Supervisor should personally get the facts:

- Employees under supervision are basically the Supervisor's responsibility. This includes responsibility for their safety and welfare.
- Supervisors know the employees and the jobs better than anyone else. They are in the best position to get the facts and find a practical solution to the problem or recognize those problems needing the attention of technical personnel.
- Supervisor's investigation of the accident can help to promote better relations with employees by demonstrating concern for their safety and proving that management is sold on accident prevention.

Investigating incidents is one of the supervisor's most important roles in the safety program. Supervisors should be trained in these skills. Training is available through many sources, including your NCACC Risk Consultants. Also, see the *Incident Investigation Sequence* for details concerning how to investigate an accident.

ACCIDENT REPORTING AND INVESTIGATION - LIABILITY, AUTO, PROPERTY

If someone from the Public is injured on premises, assist in seeing that appropriate medical care is summoned.

Public incidents are to be treated with utmost care. Console, comfort and show sympathy but do not admit liability or commit to medical expense. Apologize if appropriate and explain you will submit the proper report to management. Avoid discussion of insurance.

Take the person's name and get the names and telephone numbers of any witnesses.

Notify your Fleet Administrator in the County Manager's Office immediately so the incident can be reported.

Complete the required Accident Investigation Report. This report must be completed within 24 hours of the incident.

If an attorney or other representative calls or comes to your location:

- Be courteous but refuse any request to look around or take photographs
- Do not discuss facts or provide details concerning a claim
- Do not allow individuals to interview employees
- Do not discuss insurance coverage or limits
- Refer the attorney or representative to the County Manager or the Fleet Administrator.

If an attorney or other representative claiming to represent the NCACC or an insurance company calls or comes by your location:

- Ask for proper identification. Do not hesitate to refuse admittance or refrain from Giving information until you are sure of their identity.
- Once properly identified, cooperate fully by providing as much information as Possible.
- Refer requests for any documents to the County Manager.
- If in doubt, or if assistance is required, call the County Manager.

INCIDENT INVESTIGATION SEQUENCE

The following is provided as a simple step-by-step guide for completing an incident investigation. It is intended primarily to serve as a guide to investigating work-related incidents, though it can serve for other types of cases.

1. Take note pad and a blank investigation form to the scene of the incident. Remember: simply filling out a report is not an investigation. An investigation is an in-depth look at an incident to determine exactly what happened, what factors caused it to happen, and, from an accident prevention standpoint, what changes and improvements can be made to keep it from happening again. The completed report is simply a written summary of the findings of this investigation.

2. At the scene of the incident, ask questions to determine who, what, where, when and how the incident occurred. A thorough incident investigation involves exploring:

   A. Basic accident facts
      - Incident agency or source of the incident -- tool, material or equipment involved
      - Type of incident -- fall, struck by object, caught in moving machinery, etc.
      - Part of body affected -- identify part(s) of body injured
      - Exactly what employee was doing at the time of the injury

   B. Unsafe practices or procedures
      - Departure from accepted, normal or correct procedure
      - Established procedures that are not safe
      - Lack of established procedures

   C. Behavioral factors
      - Lack of knowledge
      - Disregard of instructions
      - Inadequate training
      - Emotional upset
      - Excessive haste

   D. Unsafe conditions
      - Physical defects
      - Errors in design
      - Inadequate maintenance
      - Poor housekeeping practices
      - Faulty planning or layout
      - Omission in recognizing safety requirements

E. Environmental factors
   - Noise
   - Chemical or dust emissions
   - Lighting
   - Temperature extremes
   - Vibration

F. Ergonomic factors – the relationship between the employee and the workplace
   - "Fit" between employee and equipment or tools
   - Repetitive motions
   - Materials handling requirements involving excessive forces or reaching or twisting

G. Safety Programs -- contributing factors that could be corrected by:
   - Safety policies, procedures, or programs
   - Inspection and/or testing procedures
   - Authorization procedures
   - Safety rules

3. If they are available for questioning, interview the injured employee and any witnesses. Emphasize prevention as your goal and not faultfinding. If the injured person is not available, do not wait for their return to complete your investigation.

4. Some information may have to be investigated away from the scene of the incident (extent of an employee's training, maintenance records on a piece of equipment, etc.) Investigate elsewhere as necessary.

5. Review all questions and blanks on the investigation report form and obtain additional information as necessary.

6. Review all of your notes and facts found during the investigation. Begin recording the results of your investigation on the "Incident Investigation Report". Start by answering <u>all</u> questions on the top half of the report.

7. List <u>incident causes</u> in the other sections of the form (Job Procedures, Behavioral Factors, Physical Conditions, Ergonomic Factors, and Safety Programs/Policies/Rules). Usually, there are 3 or more causes or contributing factors. Try to list at least 3. Always consider these questions in determining incident causes:

   A. Was there an unsafe physical condition (water on floor, uneven pavement, unguarded machine, defective equipment, etc.)? If so, what are the underlying causes, which allowed the unsafe condition to exist?

   B. For employee injuries, is there an established safe procedure for completing the task? Did the employee know the procedure (was employee adequately trained)? Is the procedure usually enforced? Was the procedure being followed at the time of the injury? Is a safer procedure needed?

   C. Did an unsafe action by the injured person contribute to the incident?

   D. Was the employee properly trained? Is additional training needed? Does the injured employee need additional training? Other employees?

8. Complete other sections on back of the form. Corrective actions are the most important area of the form. It is essential that positive corrective action be taken for each cause or contributing factor identified. Also, more than one type of corrective action may be needed. Remember, making an engineering or other physical change to eliminate a hazard is more effective than training or warning to avoid the hazard.

9. Sign and date the report and send it to the your Manager who will review the report and forward it through proper channels for corrective action, comments, and management review.

NORTH CAROLINA ASSOCIATION OF COUNTY COMMISSIONERS

Incident Investigation Report

Basic Facts

Press F1, function key, for help in any field.

Injured Employee: Department:

Nature of Incident:

Dates - Accident: Reported: Investigated: This Report:

Incident Description:

Immediate Causes

Job Procedures: Describe job procedure issues that may have contributed to the incident. Are there established procedures? Was the employee trained on them? Were they reinforced by management?

Physical Conditions: At the incident scene, look at equipment, materials and the environment. Describe the conditions reviewed here or by checking boxes in the list below. Be sure to list any conditions needing corrective action.

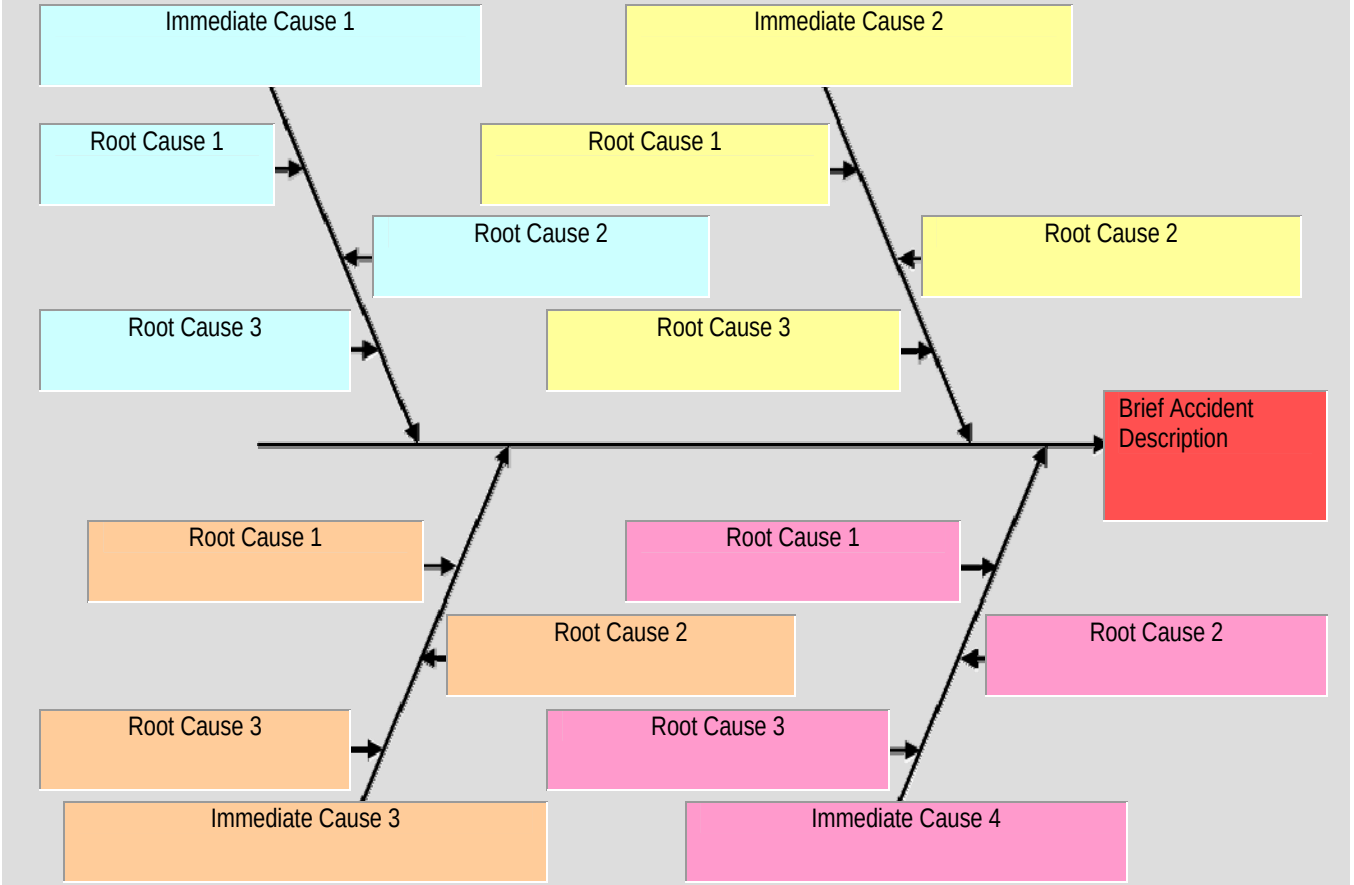
Based on observations, select conditions that caused or contributed to the incident.

General Safety		Ergonomics		Procedures/Actions	
Lighting:	☐ Cause	Awkward Postures:	☐ Cause	Established Procedures:	☐ Cause
Walking, working surfaces:	☐ Cause	High Forces:	☐ Cause	Practices/Actions:	☐ Cause
Housekeeping, congestion:	☐ Cause	Repetitive Motions:	☐ Cause	Actions of others:	☐ Cause
Machinery & equipment:	☐ Cause	Pushing/Pulling:	☐ Cause	Orientation training:	☐ Cause
Layout:	☐ Cause	Carrying:	☐ Cause	Job Safety Training:	☐ Cause
Maintenance:	☐ Cause	Lifting:	☐ Cause	Procedure enforcement:	☐ Cause
Noise:	☐ Cause	Lowering:	☐ Cause	Human error:	☐ Cause
Safety guards & equipment:	☐ Cause	Grasping/Pinching:	☐ Cause	Lacking job skills:	☐ Cause
Other:	☐ Cause	Other:	☐ Cause	Other:	☐ Cause

Root Cause Analysis

Press F1, function key, for help in any field.

For the top 4 immediate causes above, attempt to determine their root causes in the fish bone diagram below.



Corrective Action Plan

For top root causes above, list exactly what needs to be done to prevent a similar incident in the future. Include responsibility assignment and expected completion date; When complete, check off and fill in completion date.

Recommended Action	Who will complete	By When	Complete/Date
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Report By: _____ Date: _____

Facility Manager: _____ Date: _____

RETURN TO WORK POLICY

1. PURPOSE

Cherokee County is committed to offering Transitional Work for our employees in the event that a work related injury is sustained which temporarily prevents the employee from performing the essential functions of their job. Transitional Work in accommodation of parameters set forth by the treating physician will be offered in order to promote a smooth and timely transition from an injured state to a state of wellness and regained ability to perform the essential functions of their job.

2. ORGANIZATIONS AFFECTED

All county employees will be affected by this policy.

3. GENERAL INFORMATION

The purpose of requiring modified or light duty work for an employee on Workers' Compensation is threefold:

1. It provides the employee with a sense of self-worth.

2. It motivates the employee to return to their regular position when medically possible.

3. It provides the County with some productive output from the employee.

4. POLICY

It shall be the policy of Cherokee County to encourage and assist in the early return to work of employees that have been injured and temporarily disabled by an injury sustained due to the course of their employment. This policy shall be accomplished through the use of modified duty work, work hardening and other means as may be appropriate and recommended by the treating physician.

5. RESPONSIBILITIES

1. When an employee is injured on the job, it shall be the responsibility of the employee and employee's supervisor to ensure that the injury is reported to the Human Resource Officer (HRO) immediately. The injury should be documented as well with a Supervisor's Accident Investigation Report, Witness Form Report and Cherokee County Accident and Injury Report Forms.

2. Upon initial treatment, the employee will be given a release form by the designated medical provider stating that the employee may be 1) returned to regular duty; 2)

returned to modified or light duty indicating specific limitations/restrictions; 3) written out of work by the authorized treating physician.

3. The Human Resource Officer will notify the Department Head upon receipt of this information. If the authorizing treating physician approves modified duty, the HRO and the Department Head will assess departmental needs and availability of modified duty.

6. SUPERVISOR'S RESPONSIBILITIES

1. Investigate the accident, get all the facts while they are fresh.
2. All lost time cases should be reported within 24 hours, but if the injury is serious, call the HRO immediately.
3. Send the injured employee to the designated health care provider accompanied by a supervisor, if possible.
4. Advise the doctor that this is a Worker's Compensation covered injury. Other than for immediate first aid, all requests for authorization of medical service (including medications, etc) should be referred to Sedgwick Claims Management Services.
5. The HRO will advise the doctor that we can provide a modified job for the employee when he/she is medically able to do such work. We will maintain regular contacts with the injured employee.
6. Once the doctor confirms the light duty restrictions, the HRO and Supervisor will work to find a position that falls within the parameters of the physical limitations as we do not want to cause any re-injuries; this will be followed up in writing so that we can document the availability of the light duty with Sedgwick Claims Management Services.
7. The injured employee's supervisor will be informed of the specific restrictions and that the worker must not deviate from the modified job duties until released to normal duties.
8. The Supervisor should keep in touch with the HRO regarding targeted return to normal duties. This should help everyone prepare for the return of the injured employee to their regular job functions.
9. Communication and follow-up cannot be over stressed and is the key to the Return-To-Work/Modified Duty Status Program. Communication must remain open between all the key parties (the employee, the treating physician, the employer and the insurance carrier) in order to develop a successful Return-To-Work/Modified Duty Status Program.

7. DEFINITIONS

1. Modified or Light Duty Work- A work assignment where an injured employee is returned to his/her regular or other assigned duties with specific restrictions outlined by the treating physician. This duty may impose specific physical restrictions (i.e. lifting limited to a certain number of pounds, limited stooping, bending and standing, limited hours, etc.) and/ or temporary transfer to another job.

2. Work Hardening- A medically approved return to work regimen that may include full or partial return to work, medical treatment, physical therapy and progressively more physical job duties.

8. **PROCEDURE**

The Risk Specialist will notify the employee of the following items prior to their beginning modified or light duty work:

1. Prior to the offer of modified or light duty, the employer will provide the treating physician with the employee's job description. The authorized treating physician will approve the appropriate modified or light duty assignment according to the employee's disability. If the employee declines "approved" duty, the Claims Adjuster of the Carrier will file an application (Form 24) with the Industrial Commission to have compensation terminated. Compensation will be paid until the Industrial Commission approves the form.

2. If the employee declines "approved" modified duty work, their signature must be obtained on a statement that modified or light duty work was offered to the employee, the date of the offer and that the employee voluntarily declined with the understanding that Workers' Compensation payments would be reduced as outlined above. In the event the employee must be contacted by letter, a certified letter will be mailed to the employee outlining the restricted duty job requirements and an expected return to work date. If such date passes and the employee fails to return within two working days, it is assumed that such restricted work was declined.

3. While on modified or light duty work, the employee will continue to be subject to the County's policy and procedures. This includes reporting to work on time to his/her regular supervisor. The supervisor or the Risk Specialist will then direct the employee where to report within the County each day.

4. If an on-the-job injury disables the employee from ever being able to perform the duties of his/ her regular position as hired, or if their absence or significant duty restrictions **last more than a year** and the employee cannot return to work, the employee may be required to resign because of their disability, or if possible be given another assignment. The Risk Specialist will record and notify the employee and the employee's supervisor of the elapsed time leading the employee's year of disability.

Follow-up

The Human Resource Officer will notify the supervisor when return to regular work duty is authorized for the employee by the authorized treating physician.

Communication to the Injured Employee

We have an Early Return-To-Work/Modified Duty Status Program. We are willing to provide a temporary modified job if you are unable to return to your regular duties as a result of a job-related illness or injury. This temporary work assignment may be available until you are released for regular work with or without restrictions.

If you are injured or need treatment, contact your supervisor immediately. You will be provided any needed first aid, and if necessary, transported to the nearest designated medical clinic or designated hospital for your location.

If it is necessary for you to see a physician, you must advise your supervisor immediately.

If you are treated by a physician for a work-related injury or illness, you must retain a written release from the physician each time you receive medical treatment. This release should state that you are:

- Fully released to work with no restrictions, or
- Released to work with specific restrictions, or
- Not released until the physician sees you again and has scheduled the next appointment date.

Be sure to tell the physician we can offer a temporary modified job until you are fully released to work. You must report the physician's findings immediately to your supervisor and/or the Human Resource Officer.

If the physician signs a release for you for temporary modified work, you must report to work on the date indicated (or within 2 days of receiving the work release). Until you are released for temporary or regular work, you must report how your condition is progressing once a week to your supervisor and/or the HRO.

Failure to report either to work when notified or on the progress of your condition to your supervisor and/or HRO is a violation of employee work rules and may result in termination of employment.

Cherokee County
Employee Acknowledgement of Offer of Transitional Work

I, _____, have read and understand the attached Transitional Return to Work Policy of Cherokee County.

I accept the Transitional Work being offered which is in accommodation of the parameters set forth by my treating physician.

I agree to stay within my treating physician's parameters regarding my work capabilities, which are:
_____
_____
_____
_____
_____

I agree that I will begin Transitional work on __/__/__.

I agree that my Transitional Work Hours are _____to_____, on the following days:
_____

The Transitional Work being provided is:
_____
_____
_____
_____

I agree that if I encounter any difficulties performing Transitional Work, I will report this to OHN immediately or to my Supervisor if the OHN is not available. I understand that any difficulties I encounter will be evaluated by my Department Head/Supervisor, the OHN, and/or my treating physician, if necessary, before any lost time will be authorized.

I will keep my Department Head and the OHN updated regarding my medical treatment and my progressive work capabilities as set forth by my treating physician.

Upon medical release to return to my regular job duties, I will notify my Department Head/Supervisor and the OHN.

Employee Signature	Date
Department Head/Supervisor Signature	Date
County Manager Signature	Date

Return to Work Policy Statement

Cherokee County believes every employee is important and is a valuable resource to furthering the objectives of our organization. In light of this belief, it is of paramount importance that employees are on the job when they are scheduled to work.

We will make every effort to prevent on the job injuries and illnesses. Should an employee be injured on the job, we will make every reasonable effort to provide suitable transitional work opportunities for the employee if he or she is unable to perform his/her regular job duties. This may include modifying the employee's regular job or, if available, provide temporary alternate work depending on the employee's physical abilities.

Only work that is considered productive and meaningful will be considered.

Signature: _____

Date: _____

Protective Equipment and Clothing

Working Around Machines

Employees within a public entity perform a variety of work operations that involve many industrial hazards. The tasks performed range from custodial services to heavy truck repair. Over time, research is conducted to develop measures that protect employees from accidental injury during various tasks. When measures can be developed that protect the employee, this is referred to it as having "engineered out" the hazard. This can be seen by the use of guards on various types of machinery.

When working with machinery, there are several rules that must be followed without exception:

- Never operate machinery unless you are trained and authorized by your supervisor to do so, and you are knowledgeable of the safety aspects of its operation. If in doubt, ask.
- Wear prescribed personal protective equipment (PPE), such as safety glasses or hearing protection. Your supervisor can tell you what is required for a specific job.
- Keep all machine guards and other safety devices in place while machinery is in operation. Tampering with or removing machine guards or other safety devices is prohibited.
- Guards must sometimes be removed for machinery repair. Removal of guards on powered machinery requires that the power source be disconnected and locked out. All guards are to be properly replaced after the repair work has been completed. At no time will equipment be operated without the guard(s) in place.

General Clothing

To work safely, you must start by coming to work appropriately dressed. Follow the dress code as explained by your supervisor and Human Resources Department. For your safety and comfort, invest in work clothes that are sturdy, fit well, and are washable. If the public entity issues you a work uniform, wear what has been issued. Always follow these safety rules:

- The wearing of loose clothing on or near moving machinery or equipment is prohibited. Shirt-tails need to be kept tucked in.
- Pant legs should be kept to slightly below ankle length and ensure hems are sewn up. Rolled up cuffs are discouraged as they collect dirt and are likely to come down and cause you to fall.
- Wear steel toed safety shoes on all jobs involving handling or moving heavy material. Otherwise wear sturdy, comfortable work shoes. Excessively high healed shoes or shoes with hard, slick soles can cause you to fall.

- Lightweight canvas tennis shoes are not allowed on many jobs. Their soft soles do not afford protection from puncture wounds, and their thin uppers offer little protection from dropped objects.
- Shoes with run down heels or torn soles are hard on the feet and can cause falls. Keep your shoes in good repair.
- Avoid wearing rings, medals, identification bracelets, and other jewelry around moving machinery. Jewelry increases the danger of electric shock and can cause fingers to be badly injured.
- Wash work clothes frequently as a safe guard against skin infections and irritations.
- For outdoor work in winter weather, it is best to wear loose, warm, fairly lightweight clothing. Wear layers of clothing so you can peel it off for inside work and put it back on when you have to go outdoors.
- Oil soaked clothes are a serious fire hazard. Keep your clothes free from oil.

Protective Equipment

When it is impractical or impossible to place a guard over the source of the hazard, then it becomes necessary to place the guard on the worker. This is done by wearing approved personal protective equipment (PPE) such as hard hats, safety belts, safety goggles, face shields, gloves, aprons, toe guards, respirators, etc. Supervisors should insure that all their employees are properly protected. Local dress codes may be established within a particular department, or work area, and each employee is expected to know and follow these codes where applicable.

Every possible effort will be made by management to select protective clothing and equipment that is acceptable for comfort, appearance and utility and still afford the desired protection. At times protective equipment is less comfortable to wear than ordinary dress, but do not be tempted to lay it aside when the "boss isn't around". If you do, you may become a gambler who is betting his life, eyesight, or physical well being, by thinking, "it won't happen to me". Losing that bet becomes more uncomfortable for a lifetime than wearing the equipment for the duration of the job. Safety, in this instance, is knowledge of the hazards, knowledge of the protection available, and a frame of mind that makes use of available protection a safe work habit.

PPE Hazard Assessments and Equipment Selection

Each facility should complete an assessment of hazards in the workplace that may require the use of personal protective equipment. Forms at the end of this section can be used as a guideline for evaluating the need for eye, face, head, foot and hand protection. Where hazards are identified which require the use of personal protective equipment, management must:

1. Select appropriate types of personal protective equipment to protect the employees from the hazards identified in the hazard assessment. See the OSHA PPE Standard (29 CFR 1910 - Subpart I) and contact reputable safety equipment vendors for assistance.
2. Communicate selection decisions to each affected employee.
3. Select personal protective equipment that properly fits each affected employee.
4. Require each affected employee to wear the personal protective equipment selected.

PPE Training

Each employee who is required to use personal protective equipment must be trained to know at least the following:

- What personal protective equipment is necessary
- When the personal protective equipment is necessary
- How to properly don, doff, adjust and wear the personal protective equipment
- The limitations of the personal protective equipment
- The proper care, maintenance, useful life and disposal of the personal protective equipment

As part of the training, each employee must demonstrate an understanding of the items specified above and the ability to use the equipment properly, before being allowed to perform work requiring the use of personal protective equipment.

Retraining is necessary whenever the required PPE changes, or when the employee demonstrates lack of knowledge concerning use of the equipment.

Face and Eye Protection

The loss of one or both eyes has extremely serious consequences to an employee. Yet individuals often vigorously resist wearing this vital eye and face protection with no better excuse than slight discomfort or false pride. This is probably one of the most important protective features of any safety program, yet one of the most difficult to sell.

Hazards involving the possibility of injuries to the face and eyes exist in both indoor and outdoor tasks. They range from dust blown into eyes on a windy day, to particles of steel, sand, rust,

etc., propelled into eyes with considerable force by power tools and machinery, or splashes of corrosive dust and liquid chemicals. There are many types of safety glasses, goggles, shields, etc., made of impact resistant glass or plastic to protect the worker from these hazards. New designs offer both comfort and attractive appearance.

Face and eye protection is to be provided for any task where there is any probability that an injury may occur without such protection. Employees assigned to perform tasks that require eye protection are to wear the protection provided.

Safety glasses, goggles, and other eye protection equipment offer a vital protection. If sufficient care is not exercised to maintain them properly, dirty or scratched lenses may provide another hazard from reduced visibility.

The following safety procedures apply:

- Safety goggles or safety glasses with temple shields are to be worn when:
    - Grinding, cutting, milling or drilling with power tools
    - Using impact wrenches and compressed air tools
    - Chipping, scrapping, or scaling paint, rust, carbon or other materials
    - Using punches, chisels, or other impact tools
    - Cutting rivets
    - Cutting or breaking glass
    - Using paint remover
    - Soldering
    - Cleaning dust or dirt from vehicles, machinery, etc.
    - Sand blasting or air cleaning operations
    - Using metal cutting lathes, shapers, drill press, power hack-saw and other metal working tools
    - Steam cleaning
    - Washing vehicle parts with soaps or solvents
    - Working under vehicles
    - Using mowers, string trimmers, shredders, power blowers, etc.
- A full face shield and safety goggles are to be worn when handling acids, caustics, and other harmful dusts, liquids, or gases.
- A face shield with the proper filter lens, or welders lens, or welder's goggles, is to be worn in all welding and cutting operations.

Welding

- For electric arc welding, a welder's helmet with proper filter lenses is to be worn. During gas welding or cutting operations, welder's goggles with proper filter lenses should be worn.
- Portable welding screens are to be used to protect the eyes of others in the vicinity whenever potential exposure to others exists.
- Helpers and observers are to wear safety glasses, goggles, or hand held shields with the proper filter lenses.

Your supervisor may also require eye protection on other jobs not listed. But most importantly -- You have but one pair of eyes -- They cannot be replaced -- Protect them!

Hearing Protection

In a public entity, there are some machines or equipment that may produce sound levels in the frequencies which cause hearing loss. When employees are subjected to excessive sound levels, attempts will be made to use engineering controls. If the sound level cannot be reduced within a tolerable range, then personal protective equipment (PPE) will be provided and is to be worn by exposed employees.

Ear protection may consist of earmuffs or earplugs (referred to as hearing protective devices – HPDs). When hearing protection is required due to the noise levels, a choice of hearing protection will be provided at no cost to employees. Hearing protection will be selected to ensure that it will provide a sufficient reduction to noise exposure. Cotton balls will not be used as earplugs since cotton does not offer any protection.

Foot Protection

Many tasks involve manual lifting or handling of heavy tools and materials. Foot injuries frequently occur when heavy objects are dropped, resulting in bruises, dislocations, fractures or crushes. Shoes and boots, reinforced with steel toes or soles, can help prevent foot injuries from the impact of falling objects, stepping on sharp objects, or exposure to blades of power tools. Protective footwear is available in a variety of attractive styles, and is as comfortable as any pair of properly fitted shoes.

The wearing of sandals or canvas sneakers (tennis shoes) in shop work areas (where the chances of foot injuries are greatest) is prohibited.

Foot protection is a sound investment for any employee -- not only for work activities, but for many off the job tasks as well.

Finger, Palm, and Hand Protection

One of the most dangerous pieces of jewelry to wear in occupational or industrial work is a ring. Rings need to be removed or not worn to work if there is the slightest chance of getting the ring caught in any hook, tool, or piece of machinery. Rings can cause the loss of a finger or painful lacerations. In some cases, rings have to be cut off of a finger if they have been bent in such a manner as to cut off circulation.

Gloves with leather palms are to be worn when handling rough edges or abrasive material, or when the work subjects your hands to possible cuts or burns. Rubber gloves may be needed when handling chemicals such as paints, solvents, degreasers, or other irritating products. Latex gloves offer minimal protection from chemicals and should be used cautiously. Before using any type of PPE, refer to the packaging information regarding use, maintenance and cautionary measures.

Washing with soap and water and not gasoline can prevent skin irritation. Good hygiene is important in controlling dermatitis and skin rashes.

Respiratory Protection

There are many tasks involving exposure to fumes, gases, mists, and dusts that are harmful to the human respiratory system. For certain tasks, such as painting or doing bodywork, employees may be required to wear a respirator.

The first step in implementing a respiratory protection program is evaluation of the exposure. Hazardous substances that may become airborne, or that may give off respirable fumes or vapors, must be specifically identified. Testing by a qualified individual is then needed to determine the extent of the exposure. Only after appropriate identification of the exposure can the respirator that will provide adequate protection be determined. Such exposure identification is the basis for choosing the appropriate respirator.

Several types of respirators can be used in public entity operations, but whatever respirator is used must be NIOSH-approved (National Institute for Occupational Safety & Health). In selecting respirators for a specific exposure, be sure the respirator is NIOSH-approved and is the correct one for the exposure. If you are not sure, work with the respirator vendor to determine what respirators are appropriate for the exposure.

Dust masks may be used during some operations, such as sanding and buffing operations. Such masks provide protection from airborne dust particles, but provide no protection against chemical vapors. ***Never wear a dust mask to protect against exposure to chemical vapors such as those given off by solvents and spray paints.***

Where painting and priming are performed, you may be given a cartridge style respirator, or a supplied air respirator. The type of respirator being used depends on the health hazards of the products in use. If you are not sure which respirator to use, be sure to ask your supervisor for instruction and training so that you will be protected.

- Regardless of which respirator you are provided, you need to be fit tested. You should also be shown how to put on the respirator, adjust it, and wear it correctly.
- Know how to clean and inspect the respirators in your work area. Respirators are to be cleaned and inspected frequently. Your cleaning schedule will depend on how often you use this equipment. Your respirator can be cleaned with soap and water, then sanitized with a dilute bleach solution. (2 tablespoons bleach to a gallon of water.) Rinse thoroughly and allow your respirator to dry.
- Store your respirator in a clean, sanitary and convenient location. Many people use a sealable plastic bag for this purpose, and then place the respirator in a locker or on a shelf. Proper storage keeps your respirator clean, and can minimize the chance of contaminants getting on the face piece.
- Most dust masks are disposable. If you have these respirators available when sanding and buffing, be sure both straps are used and that you replace the dust mask routinely. Dispose of used masks properly – do not leave them laying around.

Respirators are used in shops because in many cases, the spray booths or ventilation cannot remove the airborne paint mist or other chemicals effectively. Because of the health hazards present, you may be instructed to wear respirators in this area. This is for your protection, and you must follow the rules and instructions you have received in your public entity regarding respirator use.

Guideline for Evaluating Need for Personal Protective Equipment

Survey: Conduct a walk-through survey of the entire facility. The purpose of the survey is to identify sources of hazards to employees.

Injury/Accident Data: Previous accident, injury, and occupational illness data should also be reviewed to identify any problem areas.

A. During the walk-through survey, consideration should be given to the basic hazard categories:

1. Impact
2. Penetration
3. Compression (roll-over)
4. Chemical
5. Heat
6. Harmful Dust
7. Light (optical) radiation

B. During the walk-through survey observe for these potential hazards:

1. Sources of motion such as machinery where movement of tools, machine elements or particles could exist
2. Movement of personnel or body parts which could result in collision with objects
3. Sources of contact with temperature extremes or flash burns
4. Types of chemical exposures
5. Sources of harmful dust
6. Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.
7. Sources of falling objects or potential for dropping objects
8. Sources of sharp objects which might pierce the feet or cut the hands
9. Sources of rolling or pinching objects which could crush the feet
10. Layout of workplace and location of co-workers
11. Electrical hazards

C. Observe for these types of exposures to the eyes and face:

1. Flying particles, chips or other small objects
2. Molten metal
3. Liquid chemicals, acids or caustics
4. Chemical gases or vapors
5. Light radiation

D. Observe for these types of exposures to the feet:

1. Potential for falling or dropped objects
2. Rolling objects
3. Sharp objects which might be stepped on
4. Electrical hazards

E. Observe for these types of hazards to the hands:

1. Potential skin absorption of harmful substances
2. Sharp objects, tools or machines
3. Chemical contact exposures
4. Temperature extreme contact exposures

Organize Data: Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards and the selection of personal protective equipment. The following exhibit can be used to organize the data by job classification or by area.

Area or Department Personal Protective Equipment Hazard Assessment

LOCATION:	DEPARTMENT:	DATE/REVISION DATE:
JOB or TASK	**POTENTIAL HAZARDS**	**PERSONAL PROTECTIVE EQUIPMENT**

Assessment By: _____ Date: _____

Housekeeping

Housekeeping is an important element of every safety and health program. Most safety experts will agree that they can tell a lot about a facility's accident and injury experience simply by looking at the housekeeping. Facilities with poor housekeeping generally have poor safety results, while facilities with superior housekeeping typically have very few injuries.

Many painful and sometimes disabling injuries are caused when employees are struck by falling objects or by striking against or tripping over objects they did not see. Many injuries and property damage losses stem from fires caused by poor housekeeping practices and improper storage of flammable materials. The best protection against these hazards is good housekeeping.

When materials are stored properly with adequate space to move through the storage area, or with adequate clearance to work within the storage area, accidents can be avoided. With some pre-planning, tripping hazards can be avoided and many other sprains, fractures, and bruises that result from falls can be prevented.

Aside from the accident prevention benefits, good housekeeping means efficient performance. When materials, tools, and equipment all have a place for orderly storage, and are returned to the proper place after use, they are easier to find and easier to inspect for damage and wear.

The following housekeeping safety procedures apply:

- Keep work areas and storage facilities clean, neat and orderly.
- Keep all aisles, stairways, passageways, exits and access ways to buildings free from obstructions at all times. Remove all grease and water spills from traffic areas immediately.
- It is everyone's responsibility to pick up and clean up.
- Do not place supplies on top of lockers, hampers, boxes, or other moveable containers at a height where they are not visible from the floor.
- When piling materials for storage, make sure the base is firm and level. Cross tie each layer. Keep piles level and do not stack piles too high. Keep aisles clear and maintain adequate space to work in them.
- When storing materials suspended from racks or hooks, secure them from falling and route walkways a safe distance from the surface beneath.
- When storing materials overhead on balconies or mezzanines, provide adequate toe boards to keep objects from rolling over the edge.
- Do not let materials and supplies that are no longer needed accumulate. IF IT IS NOT NEEDED, GET RID OF IT!

- Tools, equipment, machinery and work areas are to be maintained in a clean and safe manner. Defects and unsafe conditions must be reported to your supervisor.
- Return tools and equipment to their proper place when not in use.
- Lay out extension cords, air hoses, water hoses, ladders, pipes, tools, etc., in such a way as to minimize tripping hazards or obstructions to traffic.
- Clean up spills immediately to avoid hazards. In the event the removal cannot be done immediately, the area must be appropriately guarded, signed or roped off.
- Nail points, ends of loop or tie wires, etc., must not be left exposed when packing and unpacking boxes, crates, barrels, etc. Nails are to be removed as soon as lumber is disassembled.
- Store sharp or pointed articles to keep co-workers from coming in contact with the sharp edges or points.
- Dispose of all packing materials properly to reduce the chance of fires.
- Empty wastebaskets daily into approved containers.
- Put oily and greasy rags in a metal container for that purpose and dispose of properly and frequently.
- Maintain adequate lighting in obscure areas for the protection of both employees and the public. Keep landscaping well manicured to minimize hiding places.
- Employees are not to handle food, tobacco, etc., with residue from any lead-based product (such as leaded gasoline) on their hands. Consumption of food and beverages is prohibited in areas where hazardous substances are stored or used.
- Employees whose hands are cut or scratched are not to handle any lead-based products.
- All switches or drives on machinery must be shut down and locked out before cleaning, greasing, oiling, or making adjustments or repairs.
- Circuit breaker boxes and fuse boxes should be kept closed at all times. It is a requirement to maintain a minimum clearance of 36 inches in front of them.
- Flammables (kerosene, gasoline) and combustible materials (coats, rags, cleaning supplies) should not be stored in mechanical rooms or around electrical boxes.
- Extension cords should not be run across aisles or through oil or water. Inspect cords for kinks, worn insulation, and exposed strands of wire before use.
- When fuses blow continually it is an indication of an overload or short. Report this condition to your supervisor immediately.
- Keep electrical equipment properly maintained and free of grease and dirt.
- To prevent static sparks, keep drive belts dressed. Also check belts for proper tension to prevent overloading motors.
- Maintain fire inspections and other fire prevention measures.

Material Handling

Manual Handling

For the Counties and other public entities covered by the NCACC Workers' Compensation RMP, about one-third of the injuries are related to overexertion/strains/sprains, mostly due to handling materials. A study of the more serious cases over a recent 2 ½ year period revealed the following:

Loss Cause Analysis

Materials Handling and Overexertion Injury Causes:	**Number of Cases**	**% of All Cases**
Lifting/Handling a person -- Client or Patient (member services)	90	12%
Lifting – Not Otherwise Classified	60	8%
Repetitive Motion (Cumulative Trauma Disorders)	39	5%
Pushing/Pulling - Not Otherwise Classified	18	2%
Overexertion -- Not Otherwise Classified	18	2%
Lifting / Overexertion – Moving office equipment or furniture	6	1%
Overexertion – Bend/Reach/Twist	9	1%
TOTAL	**240**	**32%**

These injuries resulted in over $6 million dollars of medical bills, compensation, etc. -- a figure that does not include the financial losses to employees and the pain and discomfort they had to endure. Injuries of this nature can be avoided by taking a little time to plan ahead, by using mechanical equipment whenever possible, by thinking about the proper way to do the task, and by using the proper tools.

Safe Lifting

The single and most important preventative safety measure an employee should keep in mind is the four step lifting process. This process applies whether you are lifting a small box, a heavy computer, an invalid patient, or a file drawer:

1. **Get Ready** ... Size up the load. If it is too heavy or bulky, play it smart -- get help. Check the load for hazards: protruding nails, splinters, sharp edges, oil, grease or moisture on a case can cause injuries or cause you to lose your grip. If the surface is rough--wear gloves.

Wear protective footwear to help prevent foot injuries. Know where the load is going and where you are going to put it down. Be sure the path you take is clear of obstacles.

2. **Pick It Up** ... Get a firm footing and good balance; have your feet about shoulder width apart. If the load is below waist level, bend your knees to get into position. Keep your back as straight as possible. Grip the load firmly. Lift the object to carrying position, keeping it close to your body. Let the leg and arm muscles do the work.
3. **Carry It Carefully** ... Be sure you can see where you are going. When changing directions, be careful not to twist your body. Turn your body with changes of the position of your feet. Use extra caution in tight places so as not to smash your fingers or hands.
4. **Put It Down** ... If the receiving surface is about waist high, use the edge to take part of the load. Then push it forward. If you lower the load to the floor, bend your knees, keep your back as straight as possible and the load close to your body.

Using Hand Trucks

Proper use of appropriate mechanical aids, such as hand trucks and dollies, can greatly reduce the exposure to overexertion types of injuries. If mechanical aids are provided, and we expect employees to use them, we must ensure the aids are readily available and in good operating condition. Employees should follow these established materials handling safety rules in using mechanical aids:

- Four-wheel hand trucks with swivel axles and tongue are to be pulled; all other trucks are to be pushed.
- Use the correct type of hand truck for the materials you are handling. If there is a special truck, for example a drum or drawbar truck, it should be used.
- Watch where you are going when pushing or pulling a hand truck, and slow down at corners.
- When pushing a truck, use truck handles and keep your hands within the running lines of the truck so you will not be caught between the truck and a fixed object.
- Use caution and get help in moving hand trucks up or down inclines. Never try to move a truck on an incline where you are not fully in control of the load.
- When using hand trucks, stop at all blind intersections before passing the area.
- Always park hand trucks at a spot where people will not stumble over them; leave handles in a vertical position.
- Report hand trucks with broken wheels or other damage to your supervisor so repairs can be made promptly.
- All hand truck operators should wear protective footwear, generally steel-toed safety shoes.
- When using hand trucks, be sure to watch the floor ahead to avoid bumps, cracks, uneven surfaces, etc. that can jerk the truck and cause an accident or injury.
- Pile loads evenly. An unbalanced load may shift causing the hand truck to overturn.

Moving Patients or Other Persons (ALSO SEE TAB 13 – Emergency Medical Services)

Potential risk factors for ergonomic injuries in patient handling include:

- Overexertion; trying to stop a patient from falling or picking patient up from floor or bed.
- Multiple lifts per shift (more than 20; ref. OSHA Framework Document).
- Lifting alone/no available staff to help.
- Patient weight.
- Lifting un-cooperative, confused patients or patients that cannot support their own weight.
- Expecting employees to perform work beyond their physical capabilities.
- Distance to be moved, and the distance the patient is from the employee, (it is more stressful to reach away from the body to lift or pull a patient).
- Awkward postures required by the activity.
- Ineffective training of employees in body mechanics and proper lifting techniques

Transferring patients. Patient transfers are particularly hazardous and are not often covered in general publications on preventing back injury. The following special points should be emphasized to prevent back injuries during transfers:

- Communicate the plan of action to the patient and other workers to ensure that the transfer will be smooth and without sudden, unexpected moves
- Position equipment and furniture effectively (for example, move a wheelchair next to the bed) and remove obstacles
- Ensure good footing for the staff and patient (patients should wear slippers that provide good traction)
- Maintain eye contact and communication with patient: be alert for trouble signs
- If help is needed, request that a co-worker stand by before attempting the transfer
- Record any problems on the patient's chart so co-workers will know how to cope with difficult transfers; note the need for any special equipment, such as a lift.

Aids for patient handling: In special situations it may be necessary to buy or rent special equipment, such as:

- Gait, transfer, or walking belt - a wide belt placed around patient's waist to allow staff member a handhold on patient during transfer operations or walking.
- Hoyer Lift - mechanical lift assist device used to lift heavy or dependent patients. Many manufacturers currently make similar devices.
- Sliding board - a slick board used under patient to reduce the friction during transfers of patient from bed to chair or changing position in bed.
- Geri chair - geriactic chair is a recliner chair used for dependent patients

- Trapeze lift - a bar device suspended above bed which allows patients with upper muscle strength to reposition themselves.

Warehouse - Material Storage

Another issue in the County is material handling and proper storage. By following some good housekeeping principles, you can reduce hazards that could possibly cause you or a co-worker to be injured.

- Be sure that goods are stored neatly on shelving, or are stacked in the designated area. Objects that are laying in aisles and walkways create a tripping hazard for the employees who work in the warehouse. Clear access aisles must be maintained.
- Exit doors and the pathways to reach them must be kept clear. Never store materials in front of an emergency exit door, even temporarily.
- Keep heavy materials stored low to the floor. This will make it easier to move and lift these objects safely. If heavy materials are stored too high, it can increase the chance for a back injury, since you may have to lift the object with your arms extended.
- Be sure that stored supplies do not block electrical breaker boxes. Electrical panels and disconnects should be labeled and must be accessible at all times should an electrical emergency arise.
- Breaker boxes should be closed or covered to minimize that chance of a spark starting a fire.
- Keep a step stool or stepladder in the area to reach supplies. Do not use a chair, or climb on shelving to reach objects. This increases your chance of falling and being injured.

Piling Materials

- Have a safe base. That means a solid, smooth, and level surface. If the floor or ground is not level, use dunnage, bearing strips, or timber to make sure that the pile will not shift. Barrels and other materials that may roll or slide should be chocked at the base.
- Do not exceed a safe height. The pile must not be so high as to be unstable, the floor load limit must not be exceeded, and clearances must be maintained for fire protection systems (minimum 18 inches clearance between the pile and sprinkler heads), electrical equipment, etc.
- Lock the material by cross-tying the layers so there are no unsteady stacks within the pile. Piles should also be stepped back to insure stability.
- Maintain aisle space for workers and fire equipment. Materials should not protrude beyond the face of the pile.

Storing and Handling Gas Cylinders

- The protective cap over the valve should be kept on when the cylinder is not in use.
- Never let grease or oil be on your hands or gloves. Keep grease away from the oxygen cylinder controls.
- Lifting cylinders is always a job for two persons. If available, move cylinders with a cylinder dolly.
- Keep cylinders on end and strap or chain them securely so that they cannot fall.
- Store cylinders away from salt, acid, film, or other corrosive substances.
- Cylinders should be kept away from radiators and other sources of heat.
- Oxygen cylinders in storage should be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet, or by a noncombustible barrier at least 5 feet high having a fire resistance rating of at least one-half hour.

First Aid

While emphasis is placed on the prevention of accidents and injuries, accidents do occur. Prompt, knowledgeable treatment of injured employees will, in many cases, prevent minor injuries from becoming major ones.

The following first aid rules should be established:

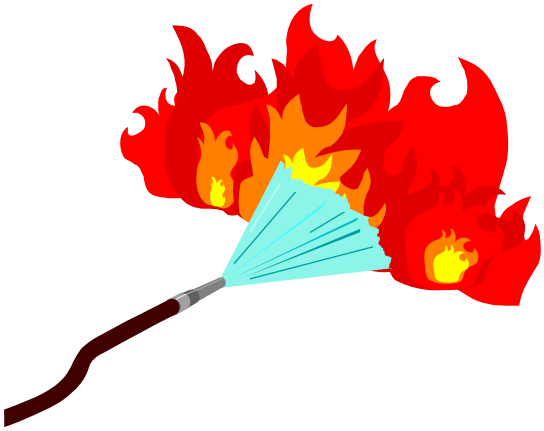
- In the absence of an infirmary, clinic, or hospital in near proximity to the workplace and used for the treatment of injured employees, a person or persons must be adequately trained to render first aid. It is recommended that at least two people in each County building be trained in First Aid and CPR. (See Tab 4 – Emergency Procedures).
- Basic emergency first aid supplies must be readily available (i.e. bandaids, gauze, cold pack, etc) . First aid cabinets or kits should be maintained in all buildings.
- First aid supplies are to be checked on a periodic basis by a designated person in each building.
- Minor medical treatment for cuts, scratches, etc., should be given by the trained first-aider. In that building. Always be sure that open wounds are thoroughly cleansed with soap and water to prevent infection. Follow universal precautions as outlined in Tab 10 – Bloodborne pathogens, and in first-aid training.
- There may be cases when injured employees who need professional medical attention can be transported to the hospital by car. There may be other cases, however, when injured employees should be transferred by ambulance to a hospital or medical center. If there is any doubt about the mode of transportation, an ambulance should be called. For example, the following conditions would definitely indicate ambulance service:
    - Employee is unconscious or in shock.
    - Hemorrhaging.
    - Severe abdominal cramps and/or vomiting.
    - Any apparent fracture.
    - Other symptoms of internal injury.
- All animal bites, because of the possibility of rabies, should receive prompt medical attention by a physician. If someone is bitten, every attempt should be made to confine the animal.
- All injuries, no matter how minor, are to be reported. The supervisor should complete an accident investigation report form as soon as possible after the incident.

Fire Prevention

One of the most fearsome and damaging disasters that can occur is a fire. Due to the various activities performed in public entity facilities, the potential fire hazards that exist must be recognized and addressed. Fires can be prevented through planning, sensible arrangement of fire or spark-producing activities in relation to combustible materials, good housekeeping, and observance of practical work practice controls (no smoking) when flammable substances are present.

Most facilities that contain potential fire hazards should have a fire plan to combat a fire if it occurs. The plan should include:

- Adequate warning measures for alerting all people in the area of the existence of a fire.
- Rapid reporting to the Fire Department.



- Evacuation of personnel from areas involved or threatened by the fire.
- Procedures for containing the fire in so far as it is safe to do so and, particularly only to the extent that it is possible to maintain safe exit for personnel so engaged.
- Employee training for those who regularly work in the area, and their duties, if any, in a fire situation.
- Adequate fire extinguishing equipment that is regularly inspected by a responsible authority.
- An emergency evacuation plan for each building.

The following basic fire prevention procedures should be observed:

- Maintain good housekeeping. Storage areas should be clean and orderly. Combustibles must not be stored around electrical panels or heat producing appliances.
- Fire extinguishing equipment is to be prominently displayed, labeled for usage, and kept clear for easy access at all times. Equipment must be appropriately inspected and maintained.
- Know the location of fire extinguishers and how to use them. After using an extinguisher, report the use immediately to your supervisor so a replacement may be obtained or the extinguisher recharged.
- Do not use water-type extinguishers on electrical fires because of the danger of electrocution and damage to equipment. Water-type extinguishers are intended for use on Class "A" fires only (combustibles such as wood, paper, rags, etc.).

- Keep oily rags and other flammable wastes in covered metal containers. Such debris must be removed from the maintenance shop building as soon as possible and, in no case, should it be left unattended in a building overnight.
- Keep cleaning solutions that have flammable properties (a flash point below 140^{o} F) in UL Listed or Factory Mutual Approved safety containers having spring-lift caps. Each container must also be labeled as to its contents. Use of gasoline is prohibited for cleaning purposes.
- Gasoline used in small quantities in shops for fueling engines being repaired, tested, adjusted, etc., must be handled and dispensed in the smaller (one gallon) approved safety containers, having a spring-lift cap. Containers must be labeled as to contents.
- The fueling of any type of motorized equipment while the engine is running is prohibited. Many injuries occur when gasoline is spilled on or around a hot exhaust system. Fill lawn mowers and other equipment before starting. If refueling is necessary after the engine has run, shut the engine off and allow it to cool before refueling.
- When transferring flammable liquids, make sure the filler nozzle touches the equipment or can to be filled in order to guard against the build-up of static electrical charge.
- Never overfill a tank but rather, under-fill it to allow room for expansion of the liquid.
- No artificial light, except UL Listed electric flashlights will be used near escaping gasoline or other flammable vapors. Do not enter any enclosure suspected of containing gas or other flammable vapors. Stay out of the area completely and call the Fire Department.
- Compressed gas cylinders must be stored upright and secured in place with a chain or belt. Caps must be in place when cylinders are not in use. Oxygen and fuel cylinders must be appropriately separated.
- Do not enter dark places, basements or cellars without proper light. The use of matches for lighting is strictly forbidden.
- Do not use fuel oil or kerosene for starting fires in stoves. Under no circumstances will gasoline be used for starting fires.
- A "No Smoking" rule will be enforced in all areas where hazardous substances are stored or used and in all other areas where "No Smoking" signs are posted.

- Exits are not to be locked (chained or otherwise) from the inside.
- All motorized equipment will have an appropriate fire extinguisher.
- Have heating equipment cleaned and serviced periodically by competent technicians.
- The use of portable heaters should be discouraged, particularly in office areas. Many office fires have occurred because of unattended heaters accidentally left on over night.
- Areas around buildings and yard storage areas must be kept free of dry grass and weeds and outside waste storage should be kept at least 20’ from buildings.

HAZARD COMMUNICATION PROGRAM

29 CFR 1910.1200

WRITTEN PROGRAM INCLUDING TRAINING GUIDELINES

HAZARD COMMUNICATION PROGRAM
FOR
CHEROKEE COUNTY

This program has been established to meet the OSHA requirements for Hazard Communication Standard (29 CFR 1910.1200). The purpose of this program and standard is to ensure that employees are made aware of the hazards of chemicals found in their work environment. This information is to be transmitted by means of a written hazard communication program, container labeling and other forms of warning, material safety data sheets, and employee education and training programs. A copy of this written program will be available in the Emergency Management for review by any interested employee.

A survey has been conducted to identify all known hazardous chemicals used by employees here at Cherokee County. A list of these chemicals and the department in which they are used, as well as copies of the material safety data sheets for each, appear later in this report. The list of hazardous chemicals and material safety data sheets will also be available for employee review in Maintenance Department.

MATERIAL SAFETY DATA SHEETS (MSDS)

The Department Head will be responsible for obtaining and maintaining the data sheet system for their department. This individual will review incoming data sheets for new and significant health/safety information. He/she will see that any new information is passed on to the affected employees.

MSDS's will be available to all employees in their work area for review during each work shift. If MSDS's are not available or new chemicals in use do not have MSDS's, immediately contact your supervisor.

CONTAINER LABELING

The Department Head will verify that all containers received for use are:

- Clearly labeled as to their contents;
- Note the appropriate hazard warning; and
- Listing the name and address of the manufacturer.

The Department Head in each department will ensure that all secondary containers are labeled with either an extra copy of the original manufacturer's label or a generic label noting chemical identity and appropriate hazard warnings. For help with labeling of in-plant containers, please contact the Maintenance Director.

Stationary process containers will use signs, placards, process sheets, batch tickets, operating procedures or other written materials in place of labels as long as the chemical content is identified and appropriate hazard noted. In these cases, copies of the original label or MSDS will be immediately available to employees throughout the work shift, either by being posted or maintained by the immediate Supervisor.

The Safety Committee will review the county's labeling system annually and update as needed.

EMPLOYEE TRAINING AND EDUCATION

The Human Resource Officer is responsible for the employee training program. He/she will ensure that all elements specified below are carried out.

Prior to starting work, each new employee of Cherokee County will attend a health and safety orientation and will receive information and training on the following:

- An overview of the requirements contained in the Hazard Communication Standard;
- Chemicals present in their workplace operations;
- Location and availability of our written hazard program;
- Physical and health effects of the hazardous chemicals;
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area;
- How to lessen or prevent exposure to the hazardous chemicals through usage of control/work practices, personal protective equipment, and good personal hygiene practices;
- Steps the county has taken to lessen or prevent exposure to these chemicals;
- Emergency procedures to follow if they are exposed to these chemicals or if there is a chemical spill;
- How to read labels and review MSDS's to obtain appropriate hazard information; and
- Location of MSDS file and location of hazardous chemical list.

After attending the training class, each employee will sign a form to verify that they attended the training, received our written materials, and understood Cherokee County’s policies on hazard communication (sample form is attached).

Prior to a new chemical hazard being introduced into any department of this county, each employee of that department will be given information as outlined above. The Department Head is responsible for ensuring that MSDS on the new chemical(s) are available.

HAZARDOUS NON-ROUTINE TASKS

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information by their supervisor about hazardous chemicals to which they may be exposed during such activity.

This information will include:

- Specific chemical hazards;
- Protective/safety measures the employee will take to prevent over-exposures; and
- Measures the county has taken to lessen the hazards including ventilation, respirators, presence of another employee, and emergency procedures.

Examples of non-routine tasks performed by the employees of this county are:

Task	Hazardous Chemicals

(List tasks and chemical exposures)

UNLABELED PIPES

Employees will be informed of the hazards of chemicals in unlabeled pipes in their work area. In areas where chemicals in unlabeled pipes may pose a risk, employees will be informed of procedures should a leak or rupture occur. The Supervisor in each department should be contacted if questions arise regarding any unlabeled pipes within their area.

INFORMING CONTRACTORS

It is the responsibility of *Department Head* to provide contractors (employees) with the following information:

- Hazardous chemicals to which they may be exposed while on the job site, and
- Precautions the employees may take to lessen the possibility of exposure by usage of appropriate protective measures.

The Department Head will also ensure that the contractors have provided this county with the same information:

- Hazardous chemicals to which our employees may be exposed while the contractor is on the job, and
- Precautions our employees may take to lessen the possibility of exposure by usage of appropriate protective equipment.

The Department Head will also ensure that contractors have provided the necessary training to their employees, and that employees understand the labeling systems used in the facility.

The County Manager will be responsible for contacting each contractor before work is started in the county to gather and disseminate any information concerning chemical hazards that the contractor is bringing to our workplace.

The Maintenance Director will be responsible for notifying each contractor regarding material safety data sheets for the products which will be brought on site. Either copies will be made available or the MSDS will be kept in a central location for the duration of time the contractor is on site.

LIST OF HAZARDOUS CHEMICALS

TRADE NAME	CHEMICAL NAME	PRIMARY HAZARD	DEPARTMENT

(List all hazardous substances identified in the work environment and update as new chemicals are introduced.)

Date Completed:_____

Note: Copies of the MSDS's for the above chemicals should follow this list as part of your written program.

HAZARD COMMUNICATION TRAINING

The Hazard Communications workshop included information on the following subjects:

I. GENERAL INFORMATION ON HAZARDOUS MATERIALS

A. Workplace safety and health hazards.
B. Hazardous chemicals/materials list.

II. MATERIAL SAFETY DATA SHEETS (MSDS)

A. Sheets are available on hazardous chemicals
B. Location of MSDS's
C. Information on the data sheets
    1. Name of product
    2. Hazardous ingredients and primary entry into body
    3. Physical data
    4. Fire and explosion data
    5. Health hazards
    6. Reactivity
    7. Spill or leak procedure
    8. Special protection information
    9. Special precautions

III. LABEL AND OTHER FORMS OF WARNINGS

A. Information on labels such as identity, appropriate hazard warning.
B. Name and address of manufacturer.
C. Other warnings may also be used such as symbols or number rating systems.
D. Labels not required on portable containers only for transfer or immediate use.
E. Labels shall not be removed or defaced on incoming containers.
F. Labels must be readable at all times.

I have received basic information on the above subjects.

Employee _____ **Date** _____

I verify that the employee has been instructed on the above subjects.

Instructor _____ **Date** _____

MSDS GLOSSARY

The following glossary presents brief explanations of acronyms and common terms frequently used by chemical manufacturers in their MSDS's.

ACGIH American Conference of Governmental Industrial Hygienists is an organization of professional personnel in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH establishes recommended occupational exposure limits for chemical substances and physical agents. See TLV.

Acid Any chemical that undergoes dissociation in water with the formation of hydrogen ions. Acids have a sour taste and may cause severe skin burns. Acids turn litmus paper red and have pH values of 0 to 6.

Acute Effect Adverse effect on a human or animal that has severe symptoms developing rapidly and coming quickly to a crisis.

Acute Toxicity Acute effects resulting from a single dose of, or exposure to, a substance. Ordinarily used to denote effects in experimental animals.

Adenocarcinoma A tumor with glandular (secreting) elements.

Adenosis Any disease of a gland.

Adhesion A union of two surfaces that are normally separate.

Aerosol A fine aerial suspension of particles sufficiently small in size to confer some degree of stability from sedimentation (e.g., smoke or fog).

Air-line Respirator A respirator that is connected to a compressed breathable air source by a hose of small inside diameter. The air is delivered continuously or intermittently in a sufficient volume to meet the wearer's breathing requirements.

Air-purifying Respirator A respirator that uses chemicals to remove specific gases and vapors from the air or that uses a mechanical filter to remove particulate matter. An air-purifying respirator must only be used when there is sufficient oxygen to sustain life and the air contaminant level is below the concentration limits of the device.

Alkali Any chemical substance that forms soluble soaps with fatty acids. Alkalis are also referred to as bases. They may cause severe burns to the skin. Alkalis turn litmus paper blue and have pH values from 8 to 14.

Allergic Reaction An abnormal physiological response to chemical or physical stimuli.

Amenorrhea Absence of menstruation.

Anesthetic A chemical that causes a total or partial loss of sensation. Overexposure to anesthetics can cause impaired judgment, dizziness, drowsiness, headache, unconsciousness, and even death. Examples include alcohol, paint remover, and degreasers.

ANSI American National Standards Institute is a privately funded, voluntary membership organization that identifies industrial and public needs for national consensus standards and coordinates development of such standards.

Antidote A remedy to relieve, prevent, or counteract the effects of a poison.

API American Petroleum Institute is a organization of the petroleum industry.

Appearance A description of a substance at normal room temperature and normal atmospheric conditions. Appearance includes the color, size, and consistency of a material.

Aquatic Toxicity The adverse effects to marine life that result from being exposed to a toxic substance.

Asphyxiant A vapor or gas that can cause unconsciousness or death by suffocation (lack of oxygen). Most simple asphyxiants are harmful to the body only when they become so concentrated that they reduce oxygen in the air (normally about 21 percent) to dangerous levels (18 percent or lower). Asphyxiation is one of the principal potential hazards of working in confined and enclosed spaces.

ASTM American Society for Testing and Materials is the world's largest source of voluntary consensus standards for materials, products, systems, and services. ASTM is a resource for sampling and testing methods, health and safety aspects of materials, safe performance guidelines, effects of physical and biological agents and chemicals.

Asymptomatic Showing no symptoms.

Atm Atmosphere, a unit of pressure equal to 760 mm Hg (mercury) at sea level.

Atmosphere-supplying Respirator A respirator that provides breathable air from a source independent of the surrounding atmosphere. There are two types: air-line and self-contained breathing apparatus.

Auto-ignition Temperature The temperature to which a closed, or nearly closed container must be heated in order that the flammable liquid, when introduced into the container, will ignite spontaneously or burn.

BAL British Anti-Lewisite - A name for the drug dimercaprol - a treatment for toxic inhalations.

Base A substance that (1) liberates hydroxide (OH) ions when dissolved in water, (2) receives hydrogen ions from a strong acid to form a weaker acid, and (3) neutralizes an acid. Bases react with acids to form salts and water. Bases have a pH greater than 7 and turn litmus paper blue. See Alkali.

BCM Blood-clotting mechanism effects.

Benign Not recurrent or not tending to progress. Not cancerous.

Biodegradable Capable of being broken down into innocuous products by the action of living things.

Biopsy Removal and examination of tissue from the living body.

BLD Blood effects.

Boiling Point - BP The temperature at which a liquid changes to a vapor state at a given pressure. The boiling point usually expressed in degrees Fahrenheit at sea level pressure (760 mm Hg, or one atmosphere). For mixtures, the initial boiling point or the boiling range may be given.

Flammable materials with low boiling points generally present special fire hazards. Some approximate boiling points:

Propane	-44 F
Anhydrous Ammonia	-28 F
Butane	31 F
Gasoline	100 F
Allyl Chloride	113 F
Ethylene Glycol	387 F

BOM, or BuMines Bureau of Mines, U.S. Department of Interior.

Bonding The interconnecting of two objects by means of a clamp and bare wire. Its purpose is to equalize the electrical potential between the objects to prevent a static discharge when transferring a flammable liquid from one container to another. The conductive path is provided by clamps that make contact with the charged object and a low resistance flexible cable which allows the charge to equalize. See Grounding.

Bulk Density Mass of powdered or granulated solid material per unit of volume.

C Centigrade, a unit of temperature.

Ceiling Limit (PEL or TLV) The maximum allowable human exposure limit for an airborne substance which is not to be exceeded even momentarily. Also see PEL and TLV.

ca Approximately.

CAA Clean Air Act was enacted to regulate/reduce air pollution. CAA is administered by U.S. Environmental Protection Agency.

Carcinogen A substance or agent capable of causing or producing cancer in mammals, including humans. A chemical is considered to be a carcinogen if

(a) It has been evaluated by the International Agency for Research On Cancer (IARC) and found to be a carcinogen or potential carcinogen; or
(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or
(c) It is regulated by OSHA as a carcinogen.

Carcinogenicity The ability to produce cancer.

Carcinoma A malignant tumor. A form of cancer.

CAS Chemical Abstracts Service is an organization under the American Chemical Society. CAS abstracts and indexes chemical literature from all over the world in "Chemical Abstracts." "CAS Numbers" are used to identify specific chemicals or mixtures.

Caustic See Alkali.

cc Cubic centimeter is a volume measurement in the metric system that is equal in capacity to one milliliter (ml). One quart is about 946 cubic centimeters.

Central Nervous System The brain and spinal cord. These organs supervise and coordinate the activity of the entire nervous system. Sensory impulses are transmitted into the central nervous system, and motor impulses are transmitted out.

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act of 1980./ The Act requires that the Coast Guard National Response Center be notified in the event of a hazardous substance release. The Act also provides for a fund (the Superfund) to be used for the cleanup of abandoned hazardous waste disposal sites.

CFR Code of Federal Regulations. A collection of the regulations that have been promulgated under United States Law.

Chemical An element (e.g., chlorine) or a compound (e.g., sodium bicarbonate) produced by chemical reaction.

Chemical Cartridge Respirator A respirator that uses various chemical substances to purify inhaled air of certain gases and vapors. This type respirator is effective for concentrations no more than ten times the TLV of the contaminant, if the contaminant has warning properties (odor or irritation) below the TLV.

Chemical Family A group of single elements or compounds with a common general name. Example: acetone, methyl ethyl ketone (MEK), and methyl isobutyl ketone (MIBK) are of the "Ketone" family; acrolein, furfural, and acetaldehyde are of the "aldehyde" family.

Chemical Name The name given to a chemical in the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstract Service (CAS). The scientific designation of a chemical or a name that will clearly identify the chemical for hazard evaluation purposes.

Chemical Pneumonitis Inflammation of the lungs caused by accumulation of fluids due to chemical irritation.

CHEMTREC Chemical Transportation Emergency Center is a national center established by the Chemical Manufacturers Association (CMA) to relay pertinent emergency information concerning specific chemicals on requests from individuals. CHEMTREC has a 24 hour toll-free telephone number (800-424-9300) to help respond to chemical transportation emergencies.

Chronic Effect An adverse effect on a human or animal body, with symptoms that develop slowly over a long period of time or that recur frequently. Also see Acute.

Chronic Exposure Long-term contact with a substance.

Chronic Toxicity Adverse (chronic) effects resulting from repeated doses of or exposures to a substance over a relatively prolonged period of time. Ordinarily used to denote effects in experimental animals.

Clean Air Act See CAA.

Clean Water Act Federal law enacted to regulate/reduce water pollution. CWA is administered by EPA.

CMA Chemical Manufacturers Association. See CHEMTREC.

CO Carbon monoxide is a colorless, odorless, flammable, and very toxic gas produced by the incomplete combustion of carbon. It is also a byproduct of many chemical processes. A chemical asphyxiant; it reduces the blood's ability to carry oxygen. Hemoglobin absorbs CO two hundred times more readily than it does oxygen.

CO2 Carbon dioxide is a heavy, colorless gas that is produced by the combustion and decomposition of organic substances and as a byproduct of many chemical process. CO2 will not burn and is relatively nontoxic (although high concentrations, especially in confined spaces, can create hazardous oxygen-deficient environments).

COC Cleveland Open cup is a flash point test method.

Combustible A term used by NFPA, DOT, and others to classify certain liquids that will burn, on the basis of flash points. Both NFPA and DOT generally define "combustible liquids" as having a flash point of 100F (37.8C) or higher but below 200F (93.3C). Also see "flammable." Non-liquid substances such as wood and paper are classified as "ordinary combustibles" by NFPA.

Combustible Liquid Any liquid having a flashpoint at or above 100F (37.8C), but below 200F (03.3C), except any mixture having components with flashpoints of 200F (93.3C) or higher, the total volume of which makes up ninety-nine (99) percent or more of the total volume of the mixture.

Common Name Any means used to identify a chemical other than its chemical name (e.g., code name, code number, trade name, brand name, or generic name). See Generic.

Compressed Gas:

(a) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 pounds per square-inch (psi) at 70F (21.1C); or
(b) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130F (54.4C) regardless of the pressure at 70F (21.1C); or
(c) A liquid having a vapor pressure exceeding 40 psi at 100F (37.8C) as determined by ASTM D-323-72

Conc See Concentration.

Concentration The relative amount of a substance when combined or mixed with other substances. Examples: 2 ppm hydrogen sulfide in air, or a 50 percent caustic solution.

Conditions to Avoid Conditions encountered during handling or storage that could cause a substance to become unstable.

Confined Space Any area that has limited openings for entry and exit that would make escape difficult in an emergency, has a lack of ventilation, contains known and potential hazards, and is not intended nor designed for continuous human occupancy.

Conjunctivitis Inflammation of the conjunctiva, the delicate membrane that lines the eyelids and covers the eyeballs.

Container Any bag, barrel, bottle, box , can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of MSDS or HCS, pipes or piping systems are not considered to be containers.

Corrosive A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the DOT in appendix A to 49 CFR Part 173, it destroys or changes irreversibly the structure of the tissue

at the site of contact following an exposure period of 4 hours. This term shall not refer to action on inanimate surfaces.

CPSC Consumer Products Safety Commission has responsibility for regulating hazardous materials when they appear in consumer goods. For CPSC purposes, hazards are defined in the Hazardous Substances Act and the Poison Prevention Packaging Act of 1970.

Curettage Cleansing of a diseased surface.

Cutaneous Toxicity See Dermal Toxicity.

CWA Clean Water Act -- enacted to regulate/reduce water pollution; administered by EPA.

Cyst A sac containing a liquid. Most cysts are harmless.

Cytology The scientific study of cells.

Decomposition Breakdown of a material or substance (by heat, chemical reaction, electrolysis, decay, or other processes) into parts or elements or simpler compounds.

Density The mass (weight) per unit volume of a substance. For example, lead is much more dense than aluminum.

Depressant A substance that reduces a bodily functional activity or an instinctive desire, such as appetite.

Dermal Relating to the skin.

Dermal Toxicity Adverse effects resulting from skin exposure to a substance. Ordinarily used to denote effects in experimental animals.

DHHS U.S. Department of Health and Human Services (replaced U.S. Department of Health, Education and Welfare). NIOSH and the Public Health Service (PHS) are part of DHHS.

Dike A barrier constructed to control or confine hazardous substances and prevent them from entering sewers, ditches, streams, or other flowing waters.

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

DOL U.S. Department of Labor. OSHA and MSHA are part of DOl.

DOT U.S. Department of Transportation regulates transportation of chemicals and other substances.

Dry Chemical A powdered fire-extinguishing agent usually composed of sodium bicarbonate, potassium bicarbonate, etc.

Dysmenorrhea Painful menstruation.

Dysplasia An abnormality of development.

Dyspnea A sense of difficulty in breathing, shortness of breath.

Ectopic pregnancy The fertilized ovum becomes implanted outside of the uterus.

Edema An abnormal accumulation of clear watery fluid in the tissues.

Endocrine glands Glands that regulate body activity by secreting hormones.

Endometrium the mucous membrane lining the uterus.

Environmental Toxicity Information obtained as a result of conducting environmental testing designed to study the effects on aquatic and plant life.

EPA U.S. Environmental Protection Agency

Epidemiology Science concerned with the study of disease in a general population. Determination of the incidence (rate of occurrence) and distribution of a particular disease (as by age, sex, or occupation) which may provide information about the cause of the disease.

Epithelium The covering of internal and external surfaces of the body.

Estrogen Principal female sex hormone.

Evaporation Rate The rate at which a material will vaporize (evaporate) when compared to the known rate of vaporization of a standard material. The evaporation rate can be useful in evaluating the health and fire hazards of a material. The designated standard materials is usually normal butyl acetate (NBUAC or n-BuAc), with a vaporization rate designated as 1.0. Vaporization rates of other solvents or materials are then classified as:

-FAST evaporating if greater than 3.0. Examples: Methyl Ethyl Ketone = 3.8, Acetone = 5.6, Hexane = 8.3

-MEDIUM evaporating if 0.8 to 3.0 Examples: 190 proof (95%) Ethyl Alcohol = 1.4, VM&P Naphtha = 1.4, MIBK = 1.6

-SLOW evaporating if less than 0.8. Examples: Xylene = 0.6, Isobutyl Alcohol = 0.6, Normal Butyl Alcohol = 0.4, Water = 0.3, Mineral Spirits = 0.1.

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

Exposure of Exposed State of being open and vulnerable to a hazardous chemical by inhalation, ingestion, skin contact, absorption, or any other course; includes potential (accidental or possible) exposure.

Extinguishing Media The firefighting substance to be used to control a material in the event of a fire. It is usually identified by its generic name, such as fog, foam, water, etc.

Eye Protection Recommended safety glasses, chemical splash goggles,

F Fahrenheit is a scale for measuring temperature. On the Fahrenheit scale, water boils at 212F and freezes at 32F.

f/cc Fibers per cubic centimeter of air.

FDA U.S. Food and Drug Administration.

Fetal Pertaining to the fetus.

Fibrosis An abnormal thickening of fibrous connective tissue, usually in the lungs.

FIFRA Federal Insecticide, Fungicide, and Rodenticide Act requires that certain useful poisons, such as chemical pesticides, sold to the public contain labels that carry health hazard warnings to protect users. It is administered by EPA.

First Aid Emergency measures to be taken when a person is suffering from overexposure to a hazardous material, before regular medical help can be obtained.

Flammable A chemical that includes one of the following categories:

a. "Aerosol, flammable." An aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

b. "Gas, flammable." (1) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or (2) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit;

c. "Liquid, flammable." Any liquid having a flashpoint below 100F (37.8C), except any mixture having components with flashpoints of 100F (37.8C) or higher, the total of which make up 99 percent or more of the total volume of mixture.

d. "Solid, flammable." A solid, other than a blasting agent or explosive as defined in 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A solid is a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashback Occurs when flame from a torch burns back into the tip, the torch, or the hose. It is often accompanied by a hissing or squealing sound with a smoky or sharp-pointed flame.

Flashpoint The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested by the following methods:

a. Tagliabue Closed Tester (see American Nation Standard Method of Test for Flash Point by Tag Closed Tester, Z11,24 1979 [ASTM D5-79]).

b. Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 [ASTM D33-79]).

c. Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester [ASTM D3278-78]).

Foreseeable Emergency Any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

Formula The scientific expression of the chemical composition of a material (e.g., water is H_2O, sulfuric acid is H_2SO_4, sulfur dioxide is SO_2).

Fume A solid condensation particle of extremely small diameter, commonly generated from molten metal as metal fume.

g Gram is a metric unit of weight. One ounce U.S. (avoirdupois) is about 28.4 grams.

General Exhaust A system for exhausting air containing contaminants from a general work area. Also see Local Exhaust.

Generic Name A designation or identification used to identify a chemical by other than its chemical name (e.g., code name, code number, trade name, and brand name.)

Genetic Pertaining to or carried by genes.

Gestation The development of the fetus in the uterus from conception to birth; pregnancy.

g/kg Grams per kilogram is an expression of dose used in oral and dermal toxicology testing to denote grams of a substance dosed per kilogram of animal body weight. Also see "kg" (kilogram).

Grounding The procedure used to carry an electrical charge to ground through a conductive path. A typical ground may be connected directly to a conductive water pipe or to a grounding bus and ground rod. See Bonding.

Gynecology The study of the reproductive organs of women.

Hand Protection Specific type of gloves or other hand protection required to prevent harmful exposure to hazardous materials.

Hazardous Chemical Any chemical whose presence or use is a physical hazard or a health hazard.

Hazardous Warning Words, pictures, symbols, or combination thereof presented on a label or other appropriate form to inform of the presence of various materials.

HCS Hazard Communication Standard is an OSHA regulation issued under 29 CFR Part 1910.1200.

Health Hazard A chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals that are carcinogens, toxic, or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic system, and agents that damage the lungs, skin, eyes, or mucous membranes.

Hemoglobin An iron-containing conjugated protein or respiratory pigment occurring in the red blood cells of vertebrates.

Hematoma A blood clot under the surface of the skin.

Hematopoietic System The blood-forming mechanism of the human body.

Hematuria The presence of blood in the urine.

Hepatotoxin A substance that causes injury to the liver.

Highly toxic A chemical in any of the following categories:

a. A chemical with a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

b. A chemical with a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

c. A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Hormones Act as chemical messengers to body organs.

Hyperplasia Increase in volume of a tissue or organ caused by the growth of new cells.

IARC International Agency for Research on Cancer.

Ignitable Capable of being set afire.

Impervious A material that does not allow another substance to pass through or penetrate it.

Incompatible Materials that could cause dangerous reactions by direct contact with one another.

Ingestion Taking in by the mouth.

Inhal See inhalation.

Inhalation Breathing in of a substance in the form of a gas, vapor, fume, mist, or dust.

Inhibitor A chemical added to another substance to prevent an unwanted chemical change.

Insol See insoluble.

Insoluble Incapable of being dissolved in a liquid.

Intrauterine Within the uterus.

Irritant A chemical, which is not corrosive, that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1550.41 for 4 hours exposure or by other appropriate techniques, it results in an empirical score of 5 or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

Irritating As defined by DOT, a property of a liquid or solid substance which, upon contact with fire or when exposed to air, gives off dangerous or intensely irritating fumes (not including poisonous materials). See Poison, Class A and Poison, Class B.

kg Kilogram is a metric unit of weight, about 2.2 U.S. pounds. Also see "g/kg," "g," and "mg."

L Liter is a metric unit of capacity. A U.S. quart is about 9/10 if a liter.

Lacrimation Secretion and discharge of tears.

Label Notice attached to a container, bearing information concerning its contents.

Lactation The secretion of milk by the breasts.

LC Lethal concentration is the concentration of a substance being tested that will kill.

LCL Lethal concentration, low, lowest concentration of a gas of vapor capable of killing a specified species over a specified time.

LC_{50} The concentration of a material in air that will kill 50 percent of a group of test animals with a single exposure (usually 1 to 4 hours). The LC_{50} is expressed as parts of material per million parts of air, by volume (ppm) for gases and vapors, or as micrograms of material per liter of air (g/l) or milligrams of material per cubic meter of air (mg/m^3) for dusts and mists, as well as for gases and vapors.

LD Lethal dose is the quantity of a substance being tested that will kill.

LDL Lethal dose low, lowest administered dose of a material capable of killing a specified test species.

LD_{50} A single dose of a material expected to kill 50 percent of a group of test animals. The LD_{50} dose is usually expressed as milligrams or grams of material per kilogram of animal body weight (mg/kg or g/kg). The material may be administered by mouth or applied to the skin.

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

Lesion Any damage to a tissue.

Lfm Linear feet per minute, a unit of air velocity.

Local Exhaust A system for capturing and exhausting contaminants from the air at the point where the contaminants are produced (welding, grinding, sanding, other processes or operations). Also see General Exhaust.

M Meter is a unit of length in the metric system. One meter is about 39 inches.

m^3 Cubic meter is a metric measure of volume, approximately 35.3 cubic feet or 1.3 cubic yards.

Malaise A feeling of general discomfort, distress, or uneasiness, an out-of-sorts feeling.

Malignant Tending to become progressively worse and to result in death.

Mammary Pertaining to the breast.

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

Mechanical Filter Respirator A respirator used to protect against airborne particulate matter like dusts, mists, metal fume, and smoke. Mechanical filter respirators do not provide protection against gases, vapors, or oxygen deficient atmospheres.

Melting Point The temperature at which a solid substance changes to a liquid state.

Menorrhagia Excessive menstruation.

Menstruation Periodic discharge of blood from the vagina of a nonpregnant uterus.

Metabolism Physical and chemical processes taking place among the ions, atoms, and molecules of the body.

Metastasis The transfer of disease from one organ or part to another not directly connected with it.

Meter A unit of length; equivalent to 39.37 inches.

mg Milligram is a metric unit of weight that is one-thousandth of a gram.

mg/kg Milligrams of a substance per kilogram of body weight is an expression of toxicological dose.

mg/m^3 Milligrams per cubic meter is a unit for expressing concentrations of dusts, gases, or mists in air.

Micron (Micrometer) A unit of length equal to one-millionth of a meter; approximately 0.000039 of an inch.

Mist Suspended liquid droplets generated by condensation from the gaseous to the liquid state, or by breaking up a liquid into a dispersed state, such as splashing, foaming, or atomizing. Mist is formed when a finely divided liquid is suspended in air.

Mixture Any combination of two or more chemicals if the combination is not, in whole or part, the result of a chemical reaction.

Mld Mild

ml Milliliter is a metric unit of capacity, equal in volume to 1 cubic centimeter (cc), or approximately one-sixteenth of a cubic inch. One-thousandth of a liter.

mmHg Millimeters (mm) of mercury (Hg) is a unit of measurement for low pressures or partial vacuums.

Molecular Weight Weight (mass) of a molecule based on the sum of the atomic weights of the atoms that make up the molecule.

mppcf Million particles per cubic foot is a unit for expressing concentration of particles of a substance suspended in air. Exposure limits for mineral dusts (silica, graphite, Portland cement, nuisance dusts, and others), formerly expressed as mppcf, are now more commonly expressed in mg/m^3.

MSDS Material Safety Data Sheet.

MSHA Mine Safety and Health Administration, U.S. Department of Labor.

Mutagen A substance or agent capable of altering the genetic material in a living cell.

MW See molecular weight.

N_2 Nitrogen is a colorless, odorless, and tasteless gas that will not burn and will not support combustion. The earth's atmosphere (air) is about 78 percent nitrogen. At higher concentrations, nitrogen can displace oxygen and become a lethal asphyxiant. See Asphyxiant.

Narcosis A state of stupor, unconsciousness, or arrested activity produced by the influence of narcotics or other chemicals.

Nausea Tendency to vomit, feeling of sickness at the stomach.

NCI National Cancer Institute is that part of the National Institutes of Health that studies cancer causes and prevention as well as diagnosis, treatment, and rehabilitation of cancer patients.

NFPA National Fire Protection Association is an international membership organization which promotes/improves fire protection and prevention and establishes safeguards against loss of life and property by fire. Best known on the industrial scene for the National Fire Codes - 16 volumes of codes, standards, recommended practices and manuals developed (and periodically updated) by NFPA technical committees. Among these is NFPA 704M, the code for showing hazards of materials as they might be encountered under fire or related emergency conditions, using the familiar diamond-shape label or placard with appropriate numbers or symbols.

Neo See neoplasia.

Neonatal The first 4 weeks after birth.

Neoplasia A condition characterized by the presence of new growths (tumors).

Nephrotoxin A substance that causes injury to the kidneys.

Neurotoxin A material that affects the nerve cells and may produce emotional or behavioral abnormalities.

Neutralize To eliminate potential hazards by inactivating strong acids, caustics, and oxidizers. For example, acids can be neutralized by adding an appropriate amount of caustic substance to the spill.

ng nanogram, one-billionth of a gram.

NIOSH National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services (DHHS), among other activities, tests and certifies respiratory protective devices and air sampling detector tubes, recommends occupational exposure limits for various substances, and assists OSHA and MSHA in occupational safety and health investigations and research.

Nonflammable Not easily ignited, or if ignited, not burning rapidly.

Non-Sparking Tools Tools made from beryllium-copper or aluminum-bronze greatly reduce the possibility of igniting dusts, gases, or flammable vapors. Although these tools may emit some sparks when striking metal, the sparks have a low heat content and are not likely to ignite most flammable liquids.

NO_X Oxides of nitrogen which are undesirable air pollutants. NO emissions are regulated by EPA under the Clean Air Act.

NPIRS National Pesticide Information Retrieval System is an automated data base operated by Purdue University containing information on EPA registered pesticides, including reference file MSDS's.

NRC National Response Center is a notification center that must be called when significant oil or chemical spills or other environment-related accidents occur. The toll-free telephone number is 1-800-424-8802.

NTP National Toxicology Program. The NTP publishes an Annual Report on Carcinogens.

Odor A description of the smell of the substance.

Odor Threshold The lowest concentration of a substance's vapor, in air, that can be smelled.

Olfactory Relating to the sense of smell.

Oral Used in or taken into the body through the mouth.

Oral Toxicity Adverse effects resulting from taking a substance into the body by mouth. Ordinarily used to denote effects in experimental animals.

Organic Peroxide An organic compound that contains the bivalent -O-O structure and may be considered a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Organogenesis The formation of organs during development.

OSHA Occupational Safety and Health Administration, U.S. Department of Labor.

Ovary The female sex gland in which ova are formed.

Overexposure Exposure to a hazardous material beyond the allowable exposure limits.

Oxidation In a literal sense, oxidation is a reaction in which a substance combines with oxygen provided by an oxidizer or oxidizing agent. See Oxidizing Agent.

Oxidizer A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, causing fire either by itself or through the release of oxygen or other gases.

Oxidizing Agent A chemical or substance that brings about an oxidation reaction. The agent may (1) provide the oxygen to the substance being oxidized (in which case the agent has to be oxygen or contain oxygen), or (2) it may receive electrons being transferred from the substance undergoing oxidation (chlorine is a good oxidizing agent for electron-transfer purposes, even though it contains no oxygen).

Pathologic Pertaining to or caused by disease.

Pathology Scientific study of alterations produced by disease.

PEL Permissible Exposure Limit is an occupational exposure limit established by OSHA's regulatory authority. It may be a time-weighted average (TWA) limit or a maximum concentration exposure limit.

Percent Volatile Percent volatile by volume is the percentage of a liquid or solid (by volume) that will evaporate at an ambient temperature of 70F (unless some other temperature is specified). Examples: butane, gasoline, and paint thinner (mineral spirits) are 100 percent volatile; their individual evaporation rates vary, but in time, each will evaporate completely.

pH The symbol relating the hydrogen ion (H+) concentration to that of a given standard solution. A Ph of 7 is neutral. Numbers increasing from 7 to 14 indicate greater alkalinity. Numbers decreasing from 7 to 0 indicate greater acidity.

Physical Hazard Means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, and oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Placenta A structure that grows on the wall of the uterus during pregnancy, through which the fetus is nourished.

PMCC Pensky-Martens Closed Cup. See Flashpoint.

Pneumoconiosis A condition of the lung in which there is permanent deposition of particulate matter and the tissue reaction to its presence. It may range from relatively harmless forms of iron oxide deposition to destructive forms of silicosis.

Poison, Class A A DOT term for extremely dangerous poisons-poisonous gases or liquids that, in very small amounts, either as gas or as vapor of the liquid, mixed with air, are dangerous to life. Examples: phosgene, cyanogen, hydrocyanic acid, nitrogen peroxide.

Poison, Class B A DOT term for liquid, solid, paste or semisolid substances-other than Class A poisons or irritating materials-that are known (or presumed on the basis of animal tests) to be so toxic to humans that they are a hazard to health during transportation.

Polymerization A chemical reaction in which one or more small molecules combine to form larger molecules. A hazardous polymerization is such a reaction that takes place at a rate that releases large amounts of energy. If hazardous polymerization can occur with a given material, the MSDS usually will list conditions that could start the reaction and - since the material usually contains a polymerization inhibitor-the length of time during which the inhibitor will be effective.

ppb Parts per billion is the concentration of a gas or vapor in air--parts (by volume) of the gas or vapor in a billion parts of air. Usually used to express extremely low concentrations of unusually toxic gases or vapors; also the concentration of a particular substance in a liquid or solid.

ppm Parts per million is the concentration of a gas or vapor in air--parts (by volume) of the gas or vapor in a million parts of air; also the concentration of a particulate in a liquid or solid.

Prenatal Preceding birth.

psi Pounds per square inch (for MSDS purposes) is the pressure a material exerts on the walls of a confining vessel or enclosure. For technical accuracy, pressure must be expressed as psig (pounds per square inch gauge) or psia (pounds per square inch absolute; that is, gauge pressure plus sea level atmospheric pressure, or psig plus approximately 14.7 pounds per square inch). Also see mmHg.

Pul See pulmonary.

Pulmonary Relating to, or associated with, the lungs.

Pulmonary Edema Fluid in the lungs.

Pyrophoric A chemical that will ignite spontaneously in air at a temperature of 13F (54.4C) or below.

Reaction A chemical transformation or change. The interaction of two or more substances to form new substances.

Reactive See Unstable.

Reactivity Chemical reaction with the release of energy. Undesirable effects-such as pressure buildup, temperature increase, formation of noxious, toxic or corrosive byproducts- may occur because of the reactivity of a substance to heating, burning, direct contact with other materials, or other conditions in use or in storage.

Reducing Agent In a reduction reaction (which always occurs simultaneously with an oxidation reaction) the reducing agent is the chemical or substance which (1) combines with oxygen or (2) loses electrons to the reaction. See Oxidation.

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

Reproductive Toxin Substances that affect either male or female reproductive systems and may impair the ability to have children.

Respiratory Protection Devices that will protect the wearer's respiratory system from overexposure by inhalation to airborne contaminants. Respiratory protection is used when a worker must work in an area where he/she might be exposed to concentration in excess of the allowable exposure limit.

Respiratory System The breathing system that includes the lungs and the air passages (trachea or "windpipe," larynx, mouth, and nose) to the air outside the body, plus the associated nervous and circulatory supply.

Routes of Entry The means by which material may gain access to the body, for example, inhalation, ingestion, and skin contact.

RCRA Resource Conservation and Recovery Act is environmental legislation aimed at controlling the generation, treating, storage, transportation and disposal of hazardous wastes. It is administered by EPA.

Sarcoma A tumor that is often malignant.

Self-Contained Breathing Apparatus A respiratory protection device that consists of a supply or a means of respirable air, oxygen, or oxygen-generating material, carried by the wearer.

Sensitizer A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

SETA Setaflash Closed Tester. See Flashpoint.

Silicosis A disease of the lungs (fibrosis) caused by the inhalation of silica dust.

Skn Skin.

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

Skin Absorption Ability of some hazardous chemicals to pass directly through the skin and enter the bloodstream.

Skin Sensitizer See Sensitizer.

Skin Toxicity See Dermal Toxicity.

Solubility in Water A term expressing the percentage of a material (by weight) that will dissolve in water at ambient temperature. Solubility information can be useful in determining spill cleanup methods and reextinguishing agents and methods for a material.

Solvent A substance, usually a liquid, in which other substances are dissolved. The most common solvent is water.

SO_X Oxides of sulfur.

Species On the MSDS's, species refers to the test animals- usually rats, mice, or rabbits- used to obtain the toxicity test data reported.

Specific Chemical Identity The chemical name, Chemical Abstract Service (CAS) Registry Number, or any precise chemical designation of a substance.

Specific Gravity The weight of a material compared to the weight of an equal volume of water is an expression of the density (or heaviness) of a material. Insoluble materials with specific gravity of less than 1.0 will float in (or on) water. Insoluble materials with specific gravity greater than 1.0 will sink in water. Most (but not all) flammable liquids have specific gravity less than 1.0 and , if not soluble, will float on water-an important consideration for fire suppression.

Spill or Leak Procedures The methods, equipment, and precautions that should be used to control or clan up a leak or spill.

Splash-Proof Goggles Eye protection made of a noncorrosive material that fits snugly against the face, and has indirect ventilation ports.

Spontaneously Combustible A material that ignites as a result of retained heat from processing, or that will oxidize to generate heat and ignite, or that absorbs moisture to generate heat and ignite.

Squamous Scaly or platelike.

Stability The ability of a material to remain unchanged. For MSDS purposes, a material is stable if it remains in the same form under expected and reasonable conditions of storage or use. Conditions that may cause instability (dangerous change) are stated; for example. temperatures above 150F; shock from dropping.

STEL Short-Term Exposure Limit (ACGIH terminology). See TLV.

Stenosis Narrowing of a body passage or opening.

Steroid A complex molecule among which are the male and female sex hormones.

Subcutaneous Beneath the layers of the skin.

Supplied-Air Respirators Air line respirators of self-contained breathing apparatus.

Sys System or systemic.

Systemic Poison A poison that spreads throughout the body, affecting all body systems and organs. Its adverse effect is not localized in one spot or area.

Systemic Toxicity Adverse effects caused by a substance that affects the body in a general rather than local manner.

Synonym Another name or names by which a material is known. Methyl alcohol, for example, is known as methanol or wood alcohol.

Target Organ Effects The following is a target organ categorization of effects that may occur, including examples of signs and symptoms and chemicals that have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but they are not intended to be all inclusive.

(a) Hepatotoxins - Chemicals that produce liver damage.
Signs and symptoms - Jaundice; liver enlargement.
Chemicals - Carbon tetrachloride; nitrosamines.

(b) Nephrotoxins - Chemicals that produce kidney damage.
Signs and symptoms - Edema; proteinuria.
Chemicals - Halogenated hydrocarbons; uranium.

(c) Neurotoxins - Chemicals that produce their primary toxic effects on the nervous system.
Signs and symptoms - Narcosis; behavioral changes; decrease in motor functions.
Chemicals - Mercury, carbon disulfide.

(d) Agents that act on blood hematopoietic system - Decrease hemoglobin function; deprive the body tissues of oxygen.
Signs and symptoms - Cyanosis; loss of consciousness.
Chemicals - Carbon monoxide; cyanides.

(e) Agents that damage the lung - Chemicals that irritate or damage pulmonary tissue.
Signs and symptoms - Cough, tightness in chest, shortness of breath.
Chemicals - Silica, asbestos.

(f) Reproductive toxins - Chemicals that adversely affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).
Signs and symptoms - Birth defects; sterility.
Chemicals - Lead; DBCP.

(g) Cutaneous hazards - Chemicals that affect the dermal layer of the body.
Signs and symptoms - Defatting of the skin; rashes; irritation.
Chemicals - Ketones; chlorinated compounds.

(h) Eye hazards - Chemicals that affect the eye or visual capacity.
Signs and symptoms - Conjunctivitis; corneal damage.
Chemicals - Organic solvents; acids.

Target Organ Toxin A toxic substance that attacks a specific organ of the body. For example, overexposure to carbon tetrachloride can cause liver damage.

TCC Tag (Tagliabue) Closed Cup. See Flashpoint.

TCL Toxic concentration low, the lowest concentration of a gas or vapor capable of producing a defined toxic effect in a specified test species over a specified time.

TDL Toxic dose low, lowest administered dose of a material capable of producing a defined toxic effect in a specified test species.

Temp Temperature.

Ter See Teratogen.

Teratogen A substance or agent, exposure to which by a pregnant female can result in malformations in the fetus.

Tfx Toxic effect(s).

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

TLV-TWA: The allowable Time-Weighted Average concentration for a normal 8-hour workday or 80-hour workweek.

TLV-STEL: The Short-Term Exposure Limit, or maximum concentration for a continuous 15-minute exposure period (maximum of four such periods per day, with at least 60 minutes between exposure periods, and provided the daily TLV-TWA is not exceeded).

TLV-C: The ceiling exposure limit - the concentration that should not be exceeded even instantaneously.

TOC Tag Open Cup. See Flashpoint.

Torr A unit of pressure, equal to 1/760 atmosphere.

Toxic A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more

than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Toxic Substance Any substance that can cause acute or chronic injury to the human body, or which is suspected of being able to cause diseases or injury under some conditions.

Toxicity The sum of adverse effects resulting from exposure to a material , generally, by the mouth, skin, or respiratory tract.

Trade Name The trademark name or commercial trade name for a material or product.

Transplacental An agent that causes physical defects in the developing embryo.

TSCA Toxic Substances Control Act (Federal Environmental Legislation administered by EPA) regulates the manufacture, handling, and use of materials classified as "toxic substances."

TWA Time-Weighted Average exposure is the airborne concentration of a material to which a person is exposed, averaged over the total exposure time- generally the total workday (8 to 12 hours). Also see TLV.

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

ug Microgram, one-millionth of a gram.

Unstable Tending toward decomposition or other unwanted chemical change during normal handling or storage.

Unstable Reactive A chemical that, in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or become self-reactive under conditions of shocks, pressure, or temperature.

USDA U.S. Department of Agriculture.

Vapor The gaseous form of a solid or liquid substance as it evaporates.

Vapor density The weight of a vapor or gas compared to the weight of an equal volume of air is an expression of the density of the vapor or gas. Materials lighter than air have vapor densities less than 1.0 (examples: acetylene, methane, hydrogen). Materials heavier than air (examples: propane, hydrogen sulfide, ethane, butane, chlorine, sulfur dioxide) have vapor densities greater than 1.0. All vapors and gases will mix with air, but the lighter materials will tend to rise and dissipate (unless confined). Heavier vapors and gases are likely to concentrate in low places - along or under floors, in sumps, sewers, and manholes, in trenches and ditches - where they may create fire or health hazards.

Vapor pressure The pressure exerted by a saturated vapor above its own liquid in a closed container. When quality control tests are performed on products, the test temperature is usually 100F, and the vapor pressure is expressed as pounds per square inch (psig or psia), but vapor pressures reported on MSDS's are in millimeters of mercury (mmHg) at 68F (20C), unless stated otherwise. Three facts are important to remember:

1. Vapor pressure of a substance at 100F will always be higher than the vapor pressure of the substance at 68F (20C).
2. Vapor pressures reported on MSDS's in mmHg are usually very low pressures; 760 mmHg is equivalent to 14.7 pounds per square inch.
3. The lower the boiling point of a substance, the higher its vapor pressure.

Ventilation See General Exhaust, Local Exhaust, and Mechanical Exhaust.

Vermiculite An expanded mica (hydrated magnesium-aluminum-iron silicate) used as sorbent for spill control and cleanup.

Viscosity The tendency of a fluid to resist internal flow without regard to its density.

Volatility A measure of how quickly a substance forms a vapor at ordinary temperatures.

Water Disposal Methods Proper disposal methods for contaminated material, recovered liquids or solids, and their containers.

Water-Reactive A chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Work Area A room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

Workplace An establishment at one geographical location containing one or more work areas.

Zinc Fume Fever A condition brought on by inhalation of zinc oxide fume characterized by flulike symptoms with a metallic taste in the mouth, coughing, weakness, fatigue, muscular pain, and nausea, followed by fever and chills. The onset of symptoms occurs four to twelve hours after exposure.

MOTOR VEHICLE POLICY

Employees will be responsible for ensuring safe operation, maintenance, and when required, inspection of the vehicle as detailed in this policy. Employees must not operate an unsafe vehicle or operate a vehicle in an unsafe manner.

Motor Vehicle Policy -- Maintenance

A. All vehicles must be properly maintained in conformity with the vehicle manufacturer's suggested schedule. No employee is to operate a vehicle that is not in safe operating condition. For assigned automobiles, the assignee is responsible for proper maintenance. For other vehicles, the county manager will designate someone to be responsible for maintenance of each individual vehicle. The person(s) responsible will see that the maintenance schedule is followed, see that other needed repairs are made in a timely manner, and keep a file documenting all maintenance and repair records.

Motor Vehicle Policy – Driver Selection

A. **COUNTY VEHICLES ARE TO BE OPERATED ONLY BY EMPLOYEES AUTHORIZED BY MANAGEMENT TO DO SO.** Spouses are allowed to drive county autos only in the event of an emergency. County vehicles **ARE NOT TO BE OPERATED BY OTHER FAMILY MEMBERS OR NON-EMPLOYEES**.

B. No employee is allowed to operate a county vehicle unless properly licensed to do so. Operating a county vehicle with an expired or revoked driver's license is grounds for termination.

C. The designated fleet administrator is to periodically photocopy and review the driver's license of every employee who is authorized to operate a county vehicle. A license review check sheet is included at the end of this section. Any problems identified are to be passed on to the County Manager for review.

D. Periodically the fleet administrator will obtain state Motor Vehicle Record checks (MVR's) on all employees at the location who are authorized to operate a county vehicle. The fleet administrator will review these records carefully and advise the County Manager of any record showing a poor driving record. As a minimum, the County Manager is to be advised of any record showing:

1. Suspension, revocation or expiration of license
2. 2 or more moving violations, 2 or more chargeable accidents, or a combination of 2 or more moving violations and chargeable accidents over a 24 month period
3. Driving while intoxicated (DWI), reckless driving, leaving the scene of an accident, hit and run, vehicular homicide or assault, participating in an unlawful speed contest, or eluding or attempting to elude a police officer violations

4. Any other violation or accident indicating careless disregard for public or personal safety, or the abuse of a county vehicle.

E. The County Manager will review any record showing driving problems outlined in E. 1-4 to decide whether or not to allow the employee to continue to operate a County vehicle. **Generally, records with 2 or more moving violation convictions in 24 months, 2 or more chargeable accidents in 24 mos., a combination of 2 or more moving violation convictions and chargeable accidents in 24 mos., or conviction for one of the serious violations or serious incidents listed in E.3 or E.4 disqualifies an employee from operating any County vehicle.**

F. Careful driver selection is the key to overall fleet safety. No new employee is to be allowed to drive a County vehicle until the employee has completed the normal application procedure, references have been checked and possession of a valid driver's license has been verified (photocopy in personnel file). No applicant is to be hired and allowed to operate a County vehicle whose driving record shows, during the preceding 24 months:

- Two or more moving violation convictions
- Two or more chargeable accidents
- A combination of two or more moving violations and chargeable accidents
- Any Driving While Intoxicated (DWI), reckless driving, leaving the scene of an accident, hit and run, vehicular homicide or assault, participating in an unlawful speed contest, or eluding or attempting to elude a police officer violations.

Motor Vehicle Policy – Vehicle Use

A. Careful driving habits will reduce the chances of an accident more than any other factor. Drivers are to abide by all traffic regulations, laws and ordinances while driving for the County. The fleet administrator will periodically provide appropriate fleet safety information to County vehicle drivers.

B. **Seat belts shall be worn when driving or riding in any vehicle on County business.** All occupants of a County-owned vehicle shall wear seat belts while it is in operation. In the interest of safety, employees are encouraged to always use seat belts, whether or not they are on County business.

C. The fleet administrator is responsible for maintaining the following information in the glove box of each county-owned vehicle:
1. Insurance Policy Card
2. Vehicle registration information

D. Drivers will not drive after having consumed alcohol and/or drugs, including legal drugs that may impair their ability to operate a motor vehicle.

E. Family members and other passengers can be carried in an assigned County vehicle when the vehicle is being used for personal use in conformance with County policies concerning the personal use of County vehicles. Passengers other than business associates on County business are not to be carried in any County vehicle during business use of the vehicle. Under no circumstances are drivers of County vehicles to pick up hitch-hikers or give rides to strangers.

F. For those employees who operate County vehicles, fleet safety must be included in their performance appraisals. Fleet safety must also be addressed in the performance appraisals of all management personnel who supervise employees who drive County vehicles.

Motor Vehicle Policy – General Safety Rules

The following safety procedures apply to operation of all county vehicles:

- Employees are required to complete a safety check EACH DAY on any vehicle they are assigned to drive.

- Vehicle safety checks include:
    - windshield washers and wipers
    - directional signals
    - power steering
    - fluid reservoir
    - brakes and brake fluid
    - hydraulic systems
    - clutch
    - lights
    - tires
    - horn
    - motor oil

  (Test brakes by putting the vehicle in gear and applying brakes to bring the vehicle to a stop.)

- Adjust the seat, inside and outside mirrors, and steering wheel tilt for safe driving before putting the vehicle into gear.

- **Emergency vehicles:** The fact that an employee is operating an emergency vehicle does not absolve him or her from civil or criminal liability for the consequences of wantonly reckless driving. The driver must be in the position to satisfy a jury that reasonable care and prudence was used in operating emergency vehicles. Even though emergency equipment has warning devices, the drivers are expected to <u>PROCEED WITH ALL CAUTION.</u>

- Never take drugs or strong medication before operating a vehicle. Remember that drugs, illness, or extreme fatigue may affect your ability to judge distance, speed, and driving conditions.
- All persons who drive or ride in county vehicles are to wear the installed seat belts at all times.
- Supervisors are responsible for insuring that all of their employees are utilizing the installed seat belts.
- Not more than three persons are permitted to ride in the front seat of any vehicle. Persons may not be transported in any vehicle unless safe and secure seating is provided for each person.
- Parking vehicles:
    - Except when working conditions require otherwise, parked vehicles must have the motor stopped, key removed and emergency brakes set, and be left in gear or in park - depending on the type of transmission.
    - If parked on a downgrade, turn front wheels towards the curb. If parked on an upgrade, turn front wheels away from the curb.
    - Vehicles <u>are not to</u> be parked on the wrong side of the street facing traffic except in case of emergency.
    - When trucks or vehicles must be stopped on streets or highways, adequate warning signals must be used.
    - Use a flagman if traffic warrants.
    - Do not use turn signals as a parking warning.
    - Before pulling away from the curb look to see that no vehicles are approaching from either direction, and signal your intention.
    - When backing a vehicle, be sure the way is clear. Get out of the vehicle when necessary and inspect the area you will be backing into. Back up slowly. Sound horn while backing when necessary. If there is another employee along, he or she should get out and direct the backing.
- Never leave the vehicle with the engine running. It is illegal, as well as an unsafe practice to leave any vehicle unattended with the motor running. Always remove the keys from the ignition.
- Drivers must be particularly alert while driving near children.
- Stay within posted speed limits. Slow down when conditions warrant.
- Do not assume the right-of-way. Use defensive driving, and yield when necessary, even if you legally have the right of way. "Don't Be Pushy - Yield or Stop".
- Keep a safe distance behind other vehicles and avoid tailgating. Do not allow others to tailgate. Slow down, pull over to the side, and let the tailgater pass.

- Signal intentions at least 100 feet in advance, including change in lanes, and turns. Avoid sudden braking.
- Turn on low beam headlights during dark periods of the day, such as rainstorms or fog.
- Turn headlights on 1/2 hour before sunset until 1/2 hour after sunrise when driving at night. Parking lights designate a vehicle is parked – do not drive with only parking lights.
- Filling Tanks:
    - Shut off the engine.
    - Do not smoke near gasoline pumps.
    - Keep the nozzle against the edge of the filler pipe.
    - To avoid spilling gasoline, do not fill the tank too fast or too full.

Motor Vehicle Policy Accident Reporting

In the event of an accident involving county owned vehicles, the following procedures apply:

- Drivers are to report <u>any</u> <u>incident</u> involving a county vehicle or <u>any</u> <u>incident</u> involving use of their personal vehicle for business to their supervisor immediately. Any incident involving the use of a car or other vehicle while working, whether or not it results in any injury to any person or damage to any vehicle or property, and regardless of who is at fault, must be reported immediately.
- Render first aid, if qualified to do so, and arrange for medical help if necessary.
- Notify Law Enforcement Officials immediately. Unless it is necessary, the vehicle should not be moved until authorized by the investigating officer.
- In the event the accident takes place outside the County limits and the investigator fails to appear within a reasonable time, exchange names, drivers license numbers and vehicle number with the other person involved. Obtain names and addresses of any witnesses to the accident. Offer no information regarding the responsibility for the accident or what should have been done to avoid the accident.
- The driver of the county vehicle must report the accident to his or her supervisor as soon as possible. The supervisor is to report this accident to the proper authorities as soon as possible.

Cell Phone Policy

Purpose

To provide information to our employees on precautionary measures to follow when driving and using a cell phone. This policy is written to help ensure the safety of employees and the public.

Scope

This policy applies to all of our drivers when a cell phone is utilized while driving.

Introduction

Driving can be difficult enough even when you concentrate completely on the road. But driving while you dial a phone or balance it to your ear can be distracting and potentially dangerous. Cell phones may be convenient for those who own them but, if not used properly, drivers with cell phones are a danger to themselves and everyone on the road.

The New England Journal of Medicine has released a study that reports that cell phone usage while driving increases the potential of accidents 400%, or about the same as driving while intoxicated. With this in mind, we have developed the following lists of precautionary measures that should always be followed by our drivers when using a cell phone:

Policy

1. Get to know your cell phone's features such as speed-dial and redial. Use these features to avoid the distraction of dialing numbers while driving.
2. Always use hands-free devices, such as ear/mike accessory and phone cradle.
3. Position the cell phone within easy reach. The phone should be installed as near as possible to the driver's line of vision so eyes are diverted from the road for the least amount of time.
4. If possible, place the calls when you are not moving or before pulling into traffic. If you have passengers, let them dial numbers for you.
5. Assess the traffic situation before placing or receiving calls, making sure you are fully aware of road and vehicle distractions.

6. Make it clear to the person you are speaking with that you are driving and may need to interrupt the call to respond to traffic situations. Hang up or to discontinue the telephone conversation without warning in precarious traffic situations. You can always explain later why you disconnected.
7. Suspend cell phone use during hazardous driving situations, including congested traffic or bad weather.
8. Never take notes or look up information while driving. If necessary, find a rest area or other safe place to pull off the road and focus on your call.
9. Do not engage in stressful or emotional conversations that may divert your attention from the road.
10. Keep any necessary conversations brief.
11. Develop ways to get free of long-winded conversations that may divert your attention from the road.
12. Don't use the cell phone for social visiting while you drive.
13. Refrain from placing or receiving unnecessary calls. Allow voice mail to handle your calls and return them when it is safe and convenient.
14. Remember! Safe driving is the top priority. Actively compensate for the potential distraction created by cellular phone use, move to slower travel lanes, increase your following distance, and frequently check your mirrors to assess the immediate driving situation.

OFFICE SAFETY

Office work can be more hazardous than is commonly thought since many accidents occur during ordinary office routines. Following are some best practices that can help make your office areas safe. An Office Safety Checklist is included at the end of this section.

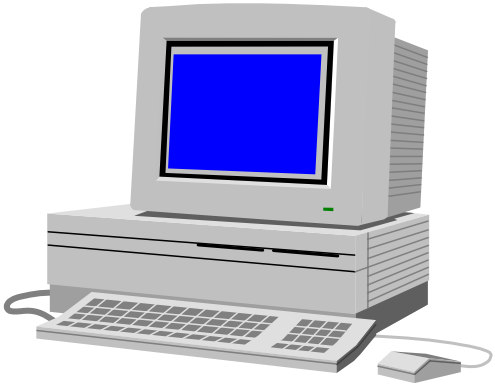
- Every employee should see that his or her desk and work area is clean and orderly. Pick up items such as pencils or paper clips and wipe up any spilled liquids. Good housekeeping is the key to a safe office environment.
- Slips, trips, and falls are some of the most common causes of injuries to office workers. Keep an eye open for loose or rough floor covering, loose tiles, or carpeting that can create a tripping hazard. Clean up spills immediately, or put up wet floor signs until help can be summoned.
- Be extra cautious when you come up to a door that can be pushed toward you. Take it easy when pushing one open. Also, slow down when coming to a blind corner.
- Haste when walking between desks can result in bruises and falls. Watch out for electrical cords and keep them out of aisle-ways. If a cord needs to be run through the walkways, ensure that a cord cover is used.
- Never run electrical cords through doorways as it creates a pinch point that can break the integrity of the cord.
- All file, desk, and table drawers should be kept closed when not in use. If you leave them, close them. Never open more than one file drawer at a time.
- Overloading the top drawers of unsecured file cabinets can cause injuries and damage to the file cabinet if they tip over. Cabinets should be loaded evenly and should be secured to adjacent cabinets or to walls so they cannot fall over. File cabinets should have an interlocking device that allows only one drawer to be opened at a time, and drawers should have stops so they cannot inadvertently be pulled all the way out of the cabinet.
- Furniture such as tables, desks, and chairs must be maintained in good condition and free from sharp corners, projecting edges, wobbly legs, etc.
- Tilted chairs can be a hazard when improperly used. Take care to assure that they are in good condition. Learn the limits.
- Never use chairs, desks or other office furniture as a makeshift ladder. Use a stepladder or step stool and don't over-reach.
- Keep the blades of a paper cutter closed when not in use. All paper cutters should be guarded.
- Pencils are safest when carried point down in shirt pockets.

- Scissors, paper cutters, glass, and razor blades can cause painful injuries. Report and treat such injuries at once to protect yourself from infection.
- Paper can cut and it hurts. Use a sponge or other wetting device for envelopes instead of your tongue. Use rubber finger guards when working with stacks of paper.
- Keep paper clips, thumb tacks, and pins in a place where they can't bite. Even a little scratch can get infected.
- Be sure all electric office equipment is grounded and that the cord is in good condition. If a machine gives you an electric shock or starts smoking, unplug it and report it.
- For computers, use surge protectors to protect your equipment from electrical power surges. Outlet strips may also allow more electrical equipment to be plugged in safely at one outlet/location, but look at the rating of the device and do not overload the circuit.
- Store heavy office supplies at a height between your knees and shoulders. Use proper lifting techniques for moving paper supplies to copy machines or printers.

Ergonomics

With the increased use of computers in every line of work, it is important to review your computer workstation setup. If you spend the majority of your time in front of a computer, then you should be aware of some basic ergonomic principles that will help improve your comfort and minimize stress caused from repetitive motion and poor posture.

Computer Workstations



Ergonomics is the science of designing your workstation to fit you better.

- Start by adjusting the chair height and keyboard to achieve a neutral wrist position, with the forearms roughly parallel to the floor, with your keyboard or other work within a range of 2" above or below your seated elbow height. If a non-adjustable work surface must be used, adjust the chair height to achieve a neutral wrist position and use a footrest, if needed, to make the workstation more comfortable.
- Select a sturdy chair with a firm padded back, adjustable arms, and with a back that adjusts vertically and horizontally. By adjusting the backrest to support your lumbar curve (lower back), you can help support and improve your posture, which will ultimately improve your comfort. You may need to lock the tilt feature to use the backrest when keying.
- Locate the computer monitor so the screen is 18 to 30 inches away. The *top* of the screen should be at seated eye level or below to help prevent head and neck strain. If you wear bifocals, you may want to have the monitor below eye level.

- Organize your desk or worktable to accommodate the materials and equipment you need. Place the things you need regularly (such as a telephone or calculator) within easy reach. Use a chair that swivels to avoid unnecessary twisting and reaching. The base should have five legs for greater stability.
- Sit up straight! Poor posture can increase problems with your back, neck and shoulders and increase the strain you feel in these areas.
- If you use a mouse or other screen-pointing device, locate it next to the keyboard on the side of your dominant hand.
- If you enter data into your computer from hard copies, use a document holder positioned next to your VDT screen. This helps keep your eyes focused at the same distance and reduces eyestrain associated with moving your eyes from the document to the computer.
- Work surfaces should have rounded edges so you do not bump or rest your wrists against sharp surfaces. Use a cushioned pad or wrist rest to support your wrists when working at a computer workstation. This support can reduce the pressure on your wrists and reduce strain as well. Try to work with your wrists in a straight (neutral) position.
- Glare can produce eyestrain. If overhead lights or windows create glare on your screen, glare screens can be placed over the front of your monitor. You can also reduce glare on your screen by tilting the front of the VDT screen down.
- If you spend significant time on the telephone, use a telephone headset to reduce neck and shoulder strain.
- While ergonomics can help improve your comfort and productivity, remember that micro-breaks can also be beneficial. During a micro-break, you might perform other job tasks that allow you to get up and move around. Filing, making copies, or performing other functions can provide that micro-break which allows you to increase your circulation, relieve tension and improve your mental attitude. Try stretching while you are taking a micro-break to get your limbs working freely again.

OFFICE SAFETY INSPECTION CHECKLIST

Instructions: Check each area covered in the inspection form. For every "No" box checked, describe the situation and needed corrective action at the end of the checklist or on a separate sheet of paper.

Y	N	**FLOORS AND WALKWAYS**
☐	☐	Are all areas kept clean and orderly?
☐	☐	Are areas where people walk free of boxes, wastebaskets, chairs and other obstacles that impede traffic?
☐	☐	Are floors, aisles, and passageways kept clean and dry and all spills cleaned up immediately?
☐	☐	Are floors and carpets in good repair?
☐	☐	Are floor elevation changes (step up at door, edge of ramp, etc.) clearly marked?
☐	☐	Is lighting adequate?
☐	☐	Are restrooms kept clean with dry floors?
☐	☐	Are employee parking lots clean, free of tripping hazards, well lighted?
☐	☐	Are procedures established for snow and ice removal? Tools and supplies available?

Y	N	**DESKS/FILE CABINETS**
☐	☐	Are desk or file drawers left open?
☐	☐	Are file cabinets bolted to each other and/or the wall?
☐	☐	Are file cabinet interlocks preventing more than one drawer at a time from being open provided, functioning?
☐	☐	Are file cabinets loaded evenly to avoid top-heaviness?

Y	N	**STORAGE AREAS**
☐	☐	Are shelving units and racks strong, stable, free from damage?
☐	☐	Are shelving units and racks loaded within the limits of their capacity?
☐	☐	Is storage neat, stable?
☐	☐	Are heavy, bulky items stored in low and middle shelves; frequently handled items in shelves between knuckle height and shoulder height?
☐	☐	Where needed, are appropriate ladders readily available for access to higher shelves?
☐	☐	Have all employees been instructed in safe lifting techniques?
☐	☐	Are employees prohibited from climbing on racks, shelves? (Shelves show no evidence of being climbed on?)
☐	☐	Where light bulbs are subject to contact or damage, are protective sleeves or other guarding provided?

Y N **STAIRS**

- ☐☐ Are stairway handrails, treads and risers in good condition?
- ☐☐ Are all stairs free of litter, spills, other tripping, slipping hazards?
- ☐☐ Are all stairways adequately lighted?
- ☐☐ Are step risers on stairs uniform from top to bottom?
- ☐☐ Are there standard stair rails (34") on all stairways of more than four stairs (On all open sides or, where there are walls, on both sides, or at least the right side, descending)?

Y N **LADDERS**

- ☐☐ Are ladders in good condition (no cracked side rails or rungs; no loose, missing or damaged hardware; no unauthorized repairs; etc.)?
- ☐☐ Have defective ladders been removed from service for repair or destruction and tagged as ***"Dangerous Do Not Use"***?
- ☐☐ Is it prohibited to stand on the top 2 steps of an ordinary stepladder?
- ☐☐ Are all rolling ladders maintained in good condition (no bent casters, locking mechanism operating, frame not bent, etc.)?

Y N **EGRESS**

- ☐☐ Are transparent glass doors marked (decals, etc.) so they will be seen?
- ☐☐ Are closing mechanisms on doors properly adjusted?
- ☐☐ Are all exits marked with an exit sign and illuminated by a reliable light source?
- ☐☐ Are all exits always kept free of obstructions?
- ☐☐ Is the direction of exits, when not immediately apparent, marked with visible signs?
- ☐☐ Are evacuation route maps posted at main traffic points?
- ☐☐ Are doors or other passageways, that are neither exits nor access to an exit, and located where they may be mistaken for exits, marked *"Not An Exit", "Storeroom",* etc.?

Y N **HAZARDOUS MATERIALS FLAMMABLE AND COMBUSTIBLE LIQUIDS**

- ☐☐ Are non-hazardous chemicals substituted for hazardous ones whenever possible?
- ☐☐ Are flammable liquids properly stored in safety cans?
- ☐☐ Are all flammable aerosols stored in closed cabinets or storage rooms?
- ☐☐ Is there a formal, written Hazard Communication program?
- ☐☐ Is there an inventory of all hazardous chemicals used (photocopy supplies, cleaning solutions, etc.)?
- ☐☐ Is there an up-to-date Material Safety Data Sheet (MSDS) for every chemical on the inventory?
- ☐☐ Have all employees exposed to hazardous chemicals been trained per Hazard Communication program requirements?

Y N **MEDICAL AND FIRST AID**

- ☐☐ In the absence of a nearby clinic or hospital, is there always at least one employee on duty currently qualified to render first aid?
- ☐☐ Are approved first-aid supplies readily available, inspected, and replenished?
- ☐☐ Are emergency phone numbers (ambulance, doctor, fire department, etc.) posted?

Y N **FIRE PROTECTION**

- ☐☐ Are fire extinguishers fully charged and mounted in designated places?
- ☐☐ Are extinguishers located along normal paths of travel?
- ☐☐ Are extinguishers free from obstruction or blockage?
- ☐☐ Are extinguishers not mounted too high? If less than 40 lbs., the top must be below 5' above floor - greater than 40 lbs., the top must be below 3 1/2' above floor.
- ☐☐ Are all extinguishers checked monthly to see if they are in place and ready for use?
- ☐☐ Are fire drills conducted at least annually?
- ☐☐ Are combustible materials stored away from machinery, appliances, heating equipment, and electrical equipment?
- ☐☐ Are doors to enclosed stairwells kept closed at all times?
- ☐☐ Are "No Smoking" rules enforced?
- ☐☐ Are areas where smoking is permitted designated and appropriate ashtrays provided?
- ☐☐ Are areas where smoking is permitted located away from combustible storage, waste bins, etc.?

Y N **MACHINE AND MACHINE GUARDING**

- ☐☐ Is all power transmission equipment on machinery properly guarded (e.g. belts and pulleys, chains and sprockets, rotating shafts, gears, etc.)?
- ☐☐ Is all equipment with an electric motor or any electrical connection effectively grounded?
- ☐☐ Is machinery turned off when not in use?
- ☐☐ Are all fan blades 7' or less from the floor guarded in such a manner that there exist no openings greater than 1/2"?

Y N **ELECTRICAL WIRING**

- ☐☐ Is electrical equipment accessible and in good repair?
- ☐☐ Are exposed wires, frayed cords, deteriorated insulation repaired or replaced promptly?
- ☐☐ Are covers in place on all electrical boxes, outlets, switches, etc.?

☐☐ Are computers, other electronic equipment protected by appropriate surge protection?
☐☐ Are all cord-connected electrical appliances, tools and equipment (such as vacuums, polishers, vending machines, drills, etc.) effectively grounded (3-wire cord & 3-prong plug) or of the approved double-insulated type?
☐☐ Are electrical cords arranged so as not to create a tripping hazard?
☐☐ Are all disconnects and circuit breakers labeled to indicate their use or equipment served?
☐☐ Are adequate numbers of receptacles provided, in the correct locations, to provide power for cord-connected equipment?

Y N **OSHA RECORDKEEPING**

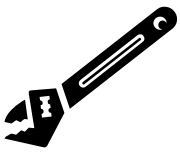
☐☐ Is employee Job Safety and Health Protection poster *(OSHA or equivalent state poster)* prominently displayed?
☐☐ Have occupational injuries and illnesses, except minor injuries requiring only first aid, been recorded on the OSHA 300 log?
☐☐ Is appropriate back-up documentation available for each case recorded on the OSHA 300 log?
☐☐ Is the summary of occupational injuries and illnesses posted from Feb 1 to April 30 each year?
☐☐ Have all OSHA records been retained for a period of five full years following the year to which they relate?

Hand Tools

Disabling injuries, such as metal chips from mushroomed chisel heads flying in an eye, do happen. Injuries to fingers and hands are a common occurrence. Often the injuries occur because the wrong tool was used for the job.

Employees should follow these safety rules when using hand tools:

- Select the right tool for the job - it's safer and easier. Do not use a wrench as a hammer or use the wrong size wrench for a job.
- Keep all cutting tools sharp. Always carry cutting tools with the cutting edge down.



- Smooth sand the wooden handles of a shovel, rake, maul, etc., thus preventing splinters and burns.
- Check the handle of each tool for tightness.
- Check the head of each tool, such as hammers, chisels, punches, mauls, and have the tool dressed if it is mushroomed (includes burns and chipped edges). All tools, whether county property or personally owned, should be maintained in first class condition.
- Wear shatterproof clear goggles or protective eyewear when using hammers, chisels, punches, wedges, grinders, drills, wire brushes, etc. Be sure no one is in the area before using such a tool.
- Gloves save many knuckles from scrapes and scratches. Wear work gloves to protect your hands, particularly when working in tight quarters. Gloves are also good for preventing blisters and scratches when using rakes, brooms, and garden tools.
- Never work on energized electrical circuits or equipment unless you are qualified and authorized to do so. Use only properly insulated tools (screwdrivers, wire cutters, etc.) when working around energized electrical circuits or equipment. A void using metal measuring tapes, fabric tapes containing woven metal strands, rope with wire cord, or other tools and equipment that have conductive properties.
- Remember good housekeeping and store your tools in a toolbox or on a workbench. Return tools to their proper place so that they do not fall from a ledge or are tripped over, and so they will be readily available the next time they are needed.
- Do not leave your tools in aisles or walkways. If you use a mobile tool cabinet, use the wheel brakes so that the cabinet will not be moved carelessly into a work area.

Power Tools

Electrical Equipment

Power tools substantially increase the number and types of hazards an employee must be aware of to operate the equipment safely. Because of the extreme mobility of power tools, they can come in contact with fingers, hands, and other body parts. Hazards can also include electrical shock due to a short circuit, or being struck by chips, shavings, and other debris during operation.

- All electrical tools used must be grounded by connecting a three-wire cord with a polarized three-prong plug to a properly grounded three-hole receptacle. In some cases, you may also encounter double insulated tools that also provide reliable shock protection, even though they have a two-prong plug. Double insulated tools are permanently marked either by label or symbol.
- If extension cords are used, they must be of the three-conductor type with matching plug and receptacle. This will help ensure proper grounding for those tools that are not double insulated.
- Visually inspect each electrical tool or machine for damage to cords and ground connections prior to use. The most common defects occur at the points where the cord is attached to the tool or where the cord is attached to the plug.
- Where electrical equipment is used in a wet location, use only low voltage equipment and wear rubber boots and rubber gloves.
- OSHA has ground-fault protection rules and regulations for construction sites. It is the employer's responsibility to provide either: (a) ground fault circuit interrupters (GFCIs) for receptacle outlets in use and not part of the permanent wiring of the building or structure; or (b) a scheduled and recorded assured equipment grounding conductor program, covering all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use or used by employees.

  The employer is required to provide approved GFCIs for all l20-volt, single-phase, 15- and 20-ampere receptacle outlets on construction sites that are not a part of the permanent wiring of the building or structure and that are in use by employees. If a receptacle or receptacles are installed as part of the permanent wiring of the building or structure and they are used for temporary electric power, GFCI protection must be provided. Receptacles on the ends of extension cords are not part of the permanent wiring and, therefore the cord's receptacle must be of the GFCI type, whether or not the extension cord is plugged into permanent wiring. This protection is required in addition to, not as a substitute for, the grounding requirements of OSHA safety and health rules and regulations, 29 CFR 1926.

Powered Machines, Tools, and Equipment - General

- One or more methods of machine guarding must be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, in-going nip points, rotating parts, flying chips and sparks. Examples of guarding methods are-barrier guards, two-hand tripping devices, electronic safety devices, etc.
- Never operate power tools or equipment unless you are trained and authorized to do so.
- Always use the guards provided. If guards are damaged or missing, tell your supervisor and do not use the equipment until guards are replaced or repaired. Guards must be in place and properly adjusted.
- Always wear required personal protective equipment. If you are not sure what is required, ask your supervisor.
- Never make adjustments to a machine while it is running.
- Disconnect electrical power when changing blades, bits, etc. or anytime an injury could occur if the machine is accidentally turned on. Generally this requires that powered hand tools be unplugged or the circuit breaker turned to the off position. Fixed equipment should have thedisconnect moved to the off position. Lockout/Tagout program requirements must always be followed.
- Tools such as shop drill presses and floor stand grinders that are used in a fixed location must be bolted to the floor to prevent movement or ”walking” during use.
- Practice good housekeeping. Do not use tools, machinery, or equipment in crowded or congested areas, or where objects can fall into moving parts. Keep work benches and shop areas clean.

Grinders

- Only those employees who are familiar with the mounting of grinding wheels are permitted to do so. A ring test on each new grinding wheel should be completed before installation. (A ring test is made by supporting the wheel freely on a rod and tapping it lightly with a wooden object. A clear, metallic ring indicates an absence of cracks).
- The abrasive wheel must fit easily onto the spindle. Too loose or too tight is dangerous.
- When the wheel is mounted, stand out of danger at one side while you allow it to develop full operating speed for at least one minute. Keep co-workers out of the area while the wheel is being tested.
- Apply work gradually to a cold wheel at the beginning of each grinding task since cold wheels are most subject to breakage.
- Never store a grinding wheel on damp or concrete surfaces, nor put oily rags on the wheel.
- Every grinding tool must be securely fastened to the shaft before commencing work.

- The maximum rated operating speed by the wheel manufacturer is on the wheel label; wheels are not to be operated in excess of these speeds. The speed of the grinder (as shown on a plate on front of the grinder) must never exceed the speed rating of the wheel.
- Appropriate guarding should be in place on stationary grinders to enclose unused portions of the wheel and the spindle end. A peripheral or tongue guard should be in place to block chips for being thrown out toward the operator should the wheel break. This tongue guard should be adjusted to ¼" of the grinding wheel.
- The work rest must be securely adjusted on all stationary grinders to within 1/8 inch of the wheel.
- Avoid using the side of a wheel for grinding, unless it is especially designed for side grinding. Side grinding weakens the ordinary wheel and may cause it to burst.
- Use the cutting surface of a grinding wheel uniformly, as a grooved wheel has been dangerously weakened.
- Grinder bearings must be kept properly oiled and adjusted. This will help to prevent hot bearings and spindles, which are sometimes responsible for melted bushings.
- Do not abuse the wheel by applying excess pressure.
- Be particularly careful when grinding narrow tools or other objects because they can catch between the work rest and the wheel.
- The operator's eyes must be protected with goggles at all times when the machine is in use.

Drill Press

- Adjust the table so that you have plenty of room for the jib and keep your hands away from the revolving drill. Never run the point of the drill into the table.
- Be sure that both the chuck and the drill are tight on the spindle, and that any circular tables are tightened before beginning to drill.
- Do not wear loose clothing, gloves, rings, watches, or bracelets while working with a drill press.
- Never leave the key in the chuck after tightening the drill. If setscrews protrude, report it to your foreman.
- Materials being drilled must be clamped or fastened to the drill press bed, never held by hand. Many serious hand injuries occur when a hand held piece is rotated by the drill.
- A sluggish drill is probably the result of incorrect grinding. Be sure the drills are sharpened properly for the particular material, so that the cut may be the right size.
- Reduce the pressure if there is any backlash in the spindle. Listen carefully for the distinctive noise made when the drill comes through work so that you can ease off the pressure.

- Never run a drill faster than the rated speed. This may result in broken drills, damaged material and serious injury.
- It is dangerous to attempt the removal of broken drill pieces with a center punch and hammer.
- Lower the spindle close to the table before removing the chuck, so that it may not cause any injury or damage to the material as it falls.
- The safety stop must be set to keep the over arm of a radial drill from swinging out where it may cause an injury.

Lathe Operations

- Ground lathe tools - so that the chips will break off instead of curl. Only lathe dogs equipped with setscrews are to be used.
- Make sure that all gear and belt guards are in place. This includes backgears and ingears, especially.
- Whenever chucks or faceplates are changed, they must be started on the spindle by hand power. Keep hands off chuck rims when lathe is in motion.
- After adjusting a chuck, be sure to remove the chuck wrench immediately. See that the tailstock tool-holder and material are properly clamped before turning on power.
- For external work, never set the lathe tools below the center of the work being turned.
- Use a brush to remove chips. Do not use compressed air.
- Wear only short sleeves when filing on a lathe. When near the chuck end or head stock, file with right hand over the lathe stock instead of the left hand, holding file in such a position that in case it is forced back, the hand will not be forced against the body.
- The operator's eyes must be protected with goggles at all times when the machine is in use.

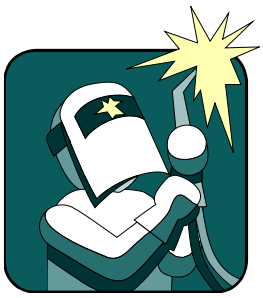
Compressed Air

Do not use compressed air for cleaning purposes except where reduced to less than 30 P.S.I. dead end pressure and then only with effective chip guarding and personal protective equipment. Compressed air is not to be used for personal blow-off at any time.

Woodworking Machinery

- Always use the guards provided. If guards are damaged or missing, tell your supervisor and do not use the equipment until guards are replaced or repaired.
- Never tie back or otherwise defeat a guard or other safety device.
- Machine guards are to be permanently attached.
- If you are running short or narrow stock, protect your fingers by using a push block.
- If a saw binds in a cut, the saw must be shut off before attempting to dislodge the lumber.
- Do not use a rip saw for cross-cutting, or a cross-cut saw for ripping. A spreader and kickback fingers are required when using a rip saw. A spreader is required when using a cross-cut saw.
- Learn to stand out of the line of a possible "kick-back" and to avoid the danger of being struck by the small pieces that are frequently thrown from a circular saw.
- Never reach over any machine to get finished materials from the opposite side, to remove dust or wood particles from the saw table, or to oil the machine while it is in operation.
- When using a jointer, never allow either hand to pass over the knife. Use both hands, one on each side of the material, using particular care at the start and finish.

Gas Welding



- Keep all gas welding equipment and connections free from gas and oil. (Oxygen will explode upon contact with oil or grease). Oily and greasy gloves may bring about the same effect, besides making it difficult to handle the cylinders.
- Wear appropriate personal protective equipment when welding. Wear proper goggles and gloves. Employee should wear steel-toed shoes.
- Never roll tanks on the floor, nor attempt to carry them by hand or hoist unless properly slung. Cylinders must be securely chained at all times.
- Securely fasten acetylene and oxygen tanks in an upright position with a chain and store them where there is no danger of their falling or being bumped. All cylinders in storage should be capped.
- Never lay acetylene cylinders on their side.
- Use a standard green oxygen hose with right hand couplings, together with a red acetylene hose with left-hand thread.
- Blow out the tank valve before attaching the regulator. Never use compressed air for blowing out equipment since air may contain some oil and moisture. Use oxygen to blow out the oxygen hose and acetylene to blow out the acetylene hose.

- Do not use damaged equipment. Check hoses and replace if damaged.
- Use welding curtains where appropriate to protect other employees and to prevent spreading sparks and starting a fire.
- Always have a properly charged fire extinguisher readily available where you are welding.
- Turn off valves when welding rig is not in use.
- When changing empty tanks for full ones:
    - Shut off valve on empty tanks
    - Release thumb screw on regulator
    - Disconnect regulator, blow out tank valve and connect on full tank.
    - Stand on opposite side of tank, point the acetylene valve outlet away from the oxygen tank and face away from the gauge while operating the tank valve.
    - Adjust thumb-screw on regulator to proper pressure, making sure that you do not have excess oxygen, which only causes unnecessary sparks in operation.
- Be sure that the end of your torch is cleaned before attempting to light it. Use only friction lighters.
- Do not put the materials in such a position as to permit sparks, hot metal, or the severed section of metal to fall on the gas supply hose or the feet of an employee.
- At the completion of the work, the welder is to inspect the job site to insure that hot articles have not been left smoldering which might later develop into a serious fire.

Electric Arc Welding

- Whenever possible, welding operations should be carried on inside a regular welding booth. If work must be performed outside a booth, the arc is to be effectively screened to prevent injury to eyes and others.
- Before entering the welding area, give an effective warning, such as a shout, so that the operator will be aware of your presence and help you to avoid a sudden flash or other injury.
- Like the welding operator, any person entering the welding area is required to wear eye protection.
- The welding of galvanized material requires the operator to be protected with a specially designed airline respirator that fits under the helmet.
- Deposit short ends of welding rods in containers made for that purpose to prevent burning holes in your shoes or starting fires.
- When not in use, place the electric holder where it cannot cause an arc.
- Avoid an injury to yourself from short circuits by using welding cables that are in good condition.

- Only properly authorized operators may use welding equipment. Never attempt to repair welding equipment yourself.
- Use helmets and shields with all electrical welding. Do not remove your helmet while bending over a hot weld.

Lawn Mowers

- Refuel the lawn mower before you start, while the motor is cold. Start and refuel mowers outdoors, not in a garage or shed.
- Keep all safety devices, switches, guards, and shields in place and working. Shut the engine off before servicing.
- Do not leave power mowers unattended with the motor running.
- Inspect the area to be mowed for foreign objects. Remove wire, stones, bottle caps, sticks, etc., before mowing.
- The operator should warn bystanders about the danger of flying objects. Extreme precaution must also be taken when there are children in the immediate area.
- Always keep your hands and feet away from the undercarriage of the mower. Never reach near the undercarriage to remove jammed materials, sticks, or objects blocking the mower blade.
- For proper traction, mow when the grass is dry. Avoid sudden stops or starts.
- With riding equipment on hillsides, mow up and down the slope -- not across. With non-riding equipment, mow across the slope--not up and down -- there is less possibility of slipping into the mower or having the mower slide over the feet.
- After mowing is completed, remove dirt, grass, etc., from the top of the mower; and place mower in dry location under cover.
- Operators of power mowers are to wear steel-toed shoes.
- Power lawn mowers must not be lifted or tilted off the ground while the motor is running.
- When refueling the mower, turn off the mower and allow the engine to cool. Never smoke during refueling operations.

Working in Confined Spaces

Employees are frequently required to work in confined spaces. OSHA defines a confined space as those work spaces which are adequate in size and configuration to allow employee entry but which are not designed for continuous human occupancy and which have limited or restricted means of entry or exit. Examples are closed storage tanks, storage bins, ductwork, sewers, tunnels, vaults, manholes, valve chambers and even open pits where heavier than air gases may accumulate.

Employees may be tempted to adopt an indifferent attitude in regards to the hazards of confined spaces. It is often particularly difficult to convey the hazards of a potentially deadly atmosphere when an atmospheric hazard cannot be seen or detected by our senses. The records are full of stories about people trapped in confined spaces and overcome by gases, vapors, lack of oxygen, etc. Many of these tragedies were compounded when other workers or emergency personnel entered the confined space in an attempt to perform a rescue and were themselves overcome.

The hazards of confined spaces include flammable or explosive gases or vapors, toxic gases or vapors, and not enough oxygen to support life. They can kill with frightening efficiency and lightning speed. Some gases and vapors are colorless, odorless, and tasteless. With some, a very small amount can be dangerous.

When employees enter manholes for sewer repair, cleaning, checking electrical circuits, etc., there may be hazardous gases, or a lack of oxygen present. These hazards may be caused by natural sewer gas decomposition, spills of chemical compounds, or seepage through the ground.

The protection against these hazards involves adequate precautionary measures. Pre-planning, education, and established confined space entry procedures must be established to protect employees from the hazards that can be encountered in a confined space. Air monitoring equipment must be available to detect oxygen concentration and the presence of explosive gases or vapors, or other toxic gases. If tests indicate danger, the area should be purged of dangerous atmospheres whenever possible. Whenever it is necessary for a worker to enter a space that is potentially hazardous, appropriate work practices must be followed.

OSHA has developed a regulation on confined spaces that requires established entry procedures (29 CFR 1910.146). The OSHA regulation is a good reference for developing a program. Appendices in the regulation show sample written programs, sample entry permits, etc. It is recommended that all Entities involved in confined space entry develop a permit system and entry procedures to meet OSHA requirements and that these guidelines be strictly followed.

The following safety procedures should be established:

- All supervisors, designated stand-by personnel, and entry personnel should be fully trained on the hazards of confined spaces. Everyone involved should understand each and every entry procedure, and why that procedure is important to their safety. Before an entry occurs, refresher training may be appropriate, and if special hazards or unusual conditions are present - this training session will provide an opportunity to address all safety requirements.
- Before entering confined spaces, know your permit entry requirements and perform tests to determine oxygen concentration and whether explosive or toxic gases or vapors are present.
- Venting of hazardous atmospheres shall be accomplished before entering whenever possible.
- Maintain adequate ventilation while working.
- When using portable blowers to ventilate, make sure the air intake will not pick up carbon monoxide from the engine. Never use gasoline blowers near confined spaces containing flammable gases unless adequate separation is maintained between confined space and blower.
- Appropriate respiratory equipment (SCBA or airline respirator with escape bottle) should be available for use as necessary. Any employee required to enter a confined space must be instructed about the nature of the hazards involved, the necessary precautions to take, use and care of personal protective equipment, and use of emergency equipment required.
- No employee should enter a manhole, sewer, tank, or other underground confined space without a safety belt or harness and attached lifeline that is tended by another employee at the point of entry.
- Smoking or open flames should be prohibited in any underground operation and in any confined space.
- When opening manholes in streets, use barricades and warning signs with lights at night to protect pedestrian traffic and to alert vehicular traffic to the hazard.
- Never allow exits to be blocked.
- Ladders should be used when entering manholes if there is any question about the safety of manhole steps.
- Only explosion-proof lights and equipment, approved and provided by the Entity, should be used in manholes and sewers.
- No gasoline or diesel motor should be operated in any enclosed place or confined space unless the exhaust is connected to the proper outlet.

When personnel are required to inspect storm sewers and sanitary sewers by walking through them, the following procedures should apply:

- There should always be two manholes opened in front of the inspection area and portable blowers will be used to ventilate the space.
- At least one employee should remain on the surface should rescue activities be needed or entrants need other assistance.
- Employees walking the sewer will only travel as far as the lifeline safely allows before returning to the entry point. The entry point and equipment will then be moved down the line and entry will begin again.
- Each employee will be equipped with an escape (self-rescue) self-contained breathing apparatus and a gas tester.
- Descents over five (5) feet require that a mechanical retrieval device be used along with the lifeline and harness. A standby person or attendant will monitor this rescue equipment.

The above information outlines basic facts you should be aware of if you perform confined space entry. If you have any questions about other confined space entry requirements or need additional details, you should contact your supervisor. OSHA's Permit Required Confined Space Standard, 1910.146, outlines minimum safety standards for entry. The requirements of this standard should be met, and exceeded if possible, to ensure employee safety when performing any type of confined space entry work.

Refuse Collection and Disposal

Garbage trucks operate over hundreds of miles of streets under wide ranges of conditions that affect safety. Conditions such as weather, road surfaces, traffic, types of refuse handled, etc., demand skill, alertness, and judgment by employees performing collection tasks. Exposure to traffic hazards is a daily experience. Skilled driving techniques are essential. Awareness of traffic is essential to the safety of employees who are physically in the street while collecting and loading refuse.

Perhaps of greatest concern is the process of compaction. Compaction in a refuse packer unit is powerful enough to crush a telephone pole. Imagine what would happen to an employee who was trapped or pulled into the unit. Refuse collection employees should never push an item into the hopper, or try to retrieve an item from the hopper after the packet plate has been activated. The risk is too great.

Refuse collection operations have identified the following hazards in collection tasks:

- Amputations, fractures, bruises, and dislocations caused by employees who have been caught in a pinch point created by packer mechanisms, mechanically loaded trash bins, or raised portions of the truck body when they are loaded.
- Sprains, strains, and hernias caused by improper handling of containers and/or improper lifting procedures.
- Sprains and strains caused by losing one's balance, and slips/falls while carrying containers over slippery or uneven surfaces.
- Being struck by particles thrown from the hopper during compaction cycles.
- Being struck by tailgate assembly after the compaction cycle started when the clamps on each side were not secured.
- Sprains and strains caused by inattentive employees dismounting the truck and/or employees who deliberately jump off of, or onto, the riding steps while the truck is in motion.
- Being thrown from the rear step by unnecessary rough operation of the vehicle.

Attitudes

- Employees should be mentally alert and in good physical condition to perform refuse collection tasks. Adequate rest is required. Overindulgence in alcoholic beverages while off duty could affect the next duty period.
- Employees who are taking medicines or drugs that could affect their ability to perform refuse collection tasks in a safe manner should notify their supervisor.

- Employees should take pride in their equipment. Trucks should be washed and cleaned on a regular basis.
- Drivers should be alert to the safety of other employees, bystanders, and particularly children when the refuse compaction equipment is in operation.

Inspection of Equipment

- Make sure that the turn signals and brake lights on the trucks are clean at the beginning of each route. They should be checked regularly to prevent them from becoming covered by dirt, grease, ice or snow, etc. The large triangular sign on the rear of the truck should also be clean and highly visible. This protection is for you and other motorists, especially during inclement weather.
- Make sure that the brake pedal is not worn down to the metal. A smooth brake pedal, especially during inclement weather could cause the driver's foot to slip and create the potential for an accident.
- The truck and its powered equipment should be inspected at the beginning of each route. Particular attention should be paid to hydraulic lines. If visual inspection indicates a possible leakage, do not use the equipment until it has been examined and released by a mechanic.
- Read and implement all inspection safety rules in the "Motor Vehicles and Mobile Equipment" section.
- The hopper or cargo space should not be entered for inspection or maintenance until proper action has been taken to lock out the power source and tag it.
- Any parts that could move or fall due to a loss of hydraulic pressure should be locked in place so that an employee can not be crushed or caught by these moving parts.
- The power source of a refuse packer unit shall be locked out by disengaging the power take off, shutting off the motor, and removing the ignition or key switch. A tag shall be placed at the key position that reads: "This machine may not be activated without permission of _____". The tag must not be removed while any person has any part of their body within the hopper or cargo space subject to compaction or movement of compaction machinery. The tag must only be removed by the person who placed it there.

Mounting and Dismounting, Lifting, and Path of Collection

- Employees should never mount or dismount from either the cab or the riding steps while the truck is moving; employees should wait until the truck has completely stopped.
- The "Material Handling" section should be carefully studied as it relates to proper lifting techniques. Supervisors shall be responsible for advising employees of proper lifting techniques.
- When streets are zoned for two-way traffic, refuse collection shall be operated only to the right of the centerline of the street. Employees are not to cross the centerline to pick up garbage.
- Refuse collection procedures on one way streets that normally contain heavy traffic may require vehicles to operate on one side only. The supervisor shall make this decision.

Manual Materials Handling

- Plastic bags may contain sharp, pointed objects that can puncture the bag and inflict injury to unsuspecting employees. Carefully feel plastic bags to check for sharp objects before picking them up. Employees are required to wear gloves.
- The handles on metal refuse containers should be carefully inspected. If they are rusty or appear to be weak, employees should not use them to lift the container.

Compaction Operators and Vehicle Drivers

- When two or more employees are loading refuse into the hopper of a refuse packer unit, one should be designated to operate the compaction controls. No other member of the crew should operate the controls.
- The power take-off should be engaged only when requested by the refuse collector working at the rear of the truck.
- Employees should not place any part of their body into the hopper area while the power source (truck engine or auxiliary engine) is running.
- Position boards, sticks, glass tubes, etc., in the hopper so that no portion extends beyond the sill. Objects that extend beyond the sill could be snapped and thrown in any direction with considerable force.
- Employees should be extremely careful when operating trucks with hoppers that are not equipped with safety doors. Flying objects may be propelled out of the hopper during the compaction cycle. Whenever possible, hazardous items such as those

listed below should be covered with other soft or loose refuse before cycling to absorb flying particles. Particular concern for items such as:

- Cathode ray tubes or fluorescent light tubes.
- Glass containers with residues of corrosive, toxic, or otherwise harmful agents.

- Avoid overloading the hopper to the extent that the packer plate or sweep panel cannot contain all the refuse being cycled.
- The employee that is designated to activate the compaction cycle controls, shall be prepared to stop and/or reverse the cycle immediately if such action is required to prevent injury to employees or equipment.
- Employees should not push refuse into the hopper or place any part of their body in the path of compaction machinery once it has been activated.
- Employees should not attempt to manipulate any article of refuse that extends into the hopper once the compaction machinery has been activated.
- The packer unit should not be cycled while the truck is in motion.
- Always place the transmission in "neutral" before starting the engine.
- Employees should not back up the truck except in cases of emergency.
- If it is necessary to back the truck, do so only after all employees are clear of the area. One employee should assist the driver with hand signals. If the driver is alone, he should dismount and inspect the area behind the vehicle before backing.
- If it should be necessary to park the truck on the street for any length of time, park at the curb so that all traffic lanes are free. Do Not Block Driveways.
- Equipment operators should be aware of all overhead wires, structures, streets, etc., to ensure adequate clearance when driving vehicles under them.
- Vehicles should be operated in a smooth, even manner, to avoid violent jolts and shocks to employees riding on the rear steps. Sudden starts and sudden stops should not be tolerated.

Unloading Mobile Packer Units

- Upon arrival at the designated disposal point, all refuse must be unloaded.
- Directions of disposal site attendants should be followed unless they would result in personal injury or damage to the vehicle.
- Employees should watch for sharp objects that could puncture or cut the tires, or wires, etc., that could become tangled in the drive train.
- Employees should wait until the truck has come to a complete stop and is in the proper unloading position before unfastening turn buckles or latches to unload.

- Make sure all employees or other persons are clear before raising the tailgate.
- Make sure all employees or other persons are standing clear of the vehicle before the dumping controls are activated to discharge the load.
- The cargo body should be raised in a smooth and even manner.
- Employees should not walk, stand, or sit under the raised tailgate nor should they allow anyone else to do so.
- Drivers of refuse trucks should visually inspect their vehicles for cracks, broken welds, leaking hydraulic lines, etc., while unloading at the disposal site. The helper should be required to stay clear of the vehicle. The operator should not walk, stand, or sit under any raised portion of the vehicle while making the inspection.
- When the tractor trailer type refuse container units are dumping, never operate bulldozers beside them or close enough to them to be struck by the container, should the unit tip over while it is raised in the dumping position.

Safety and Health

- Employees in collection and disposal operations should wear high visibility vests.
- All employees should wear steel-toed safety shoes.
- Safety glasses should be worn. Safety glasses should be clean and free of scratches.
- Personal articles, except for personal protective equipment, should not be stored or left in the cab of refuse trucks. Empty soda pop bottles and other miscellaneous articles under the seat have resulted in injury to mechanics that have been struck by falling items when the cab was tilted.
- Refuse handled by employees frequently includes the disposal of garbage that contains infectious bacteria. It is important that refuse employees wash frequently with soap to avoid infection should they have any open cuts, bruises, etc.
- A first aid kit should be kept in each supervisor's vehicle. Its contents are to be inspected periodically and items replaced as they are used.

WELLNESS PROGRAM

Purpose

To provide an environment conducive to and supportive of lifestyle changes that can significantly improve health, lower the risk for chronic disease, and reduce the risks of poor health, disability and premature death associated with chronic disease (heart disease, diabetes, cancer, etc.).

Policy

Management will maintain and support a program to encourage healthy lifestyles for associates. The program will be designed to provide associates information and encouragement in areas of:

- Nutrition
- Physical Activity
- Health Promotion and Awareness
- Smoking Cessation

The program will consist of the following elements:

- Periodic health screenings, health fairs, and other activities for associates and their families
- Program promotion and awareness among all associates
- Periodic surveys to determine associate interests
- Periodic smoking cessation clinics

A wellness committee

The Safety Committee will serve as the Wellness Committee. Committee responsibilities include the following:

- Assure continued support of the program by developing communication channels to associates and management. (E.g., meeting minutes, annual report to management, bulletin board or postings, email announcements, suggestion boxes, etc.). Agree to frequency and scope of communications. Plan means of tracking committee acceptance and benefits
- Annually establish specific goals and objectives for the program to accomplish (see the following “Ideas and Topics for Goals/Objectives”)
- Develop and promote employee wellness initiatives

Periodic health screenings, health fairs, and other activities for associates and their families

As part of the goals and objectives, the Wellness Committee will set up at least one "event" each calendar year. "Event" may include health fairs or other special promotions, and must periodically include basic screenings:

- blood pressure screening
- cholesterol screening
- blood tests for sugar
- health risk appraisal assessments
- blood pressure assessments and monitoring

Program promotion and awareness among all associates

Promotion of the program is important to its success. To help ensure the success of the program, promotional activities will be included in the annual budget and in annual program goals/objectives established by the Wellness Committee. Promotional activities will include the following:

- Establishment of on-site health information centers to display posters, brochures, and other educational resources throughout the worksite.
- Establishment of a library to include books, videos, computer-based training, and other educational materials related to health and wellness.

Periodic surveys to determine associate interests

At least every other year the Wellness Committee will survey associates to determine their support of the program and to identify program needs. Surveys introduce associates to worksite wellness and solicit their involvement and approval. Periodic formal written surveys are encouraged, but much can be gained though formal and informal interviews between associates and Wellness Committee members.

Ideas and Topics for Goals/Objectives

Nutrition

Employer-sponsored weight control and "healthy eating" programs

Incentives to increase participation in weight loss and "healthy eating" programs

Evaluation of program by comparing pre-determined objectives to outcome measures (e.g., % of pounds lost)

Provide healthy eating messages to the general employee population through posters, newsletters, bulletin boards, brochures, videos or lectures, etc.

Establish a nutrition education program using nutrition label and food pyramid. Build employee-generated list of more nutritious alternatives to 10 popular snack foods and quick meals.

Stress

Provide an employee assistance program (EAP)

Sponsor or organize regular social events (company picnic, Holiday party, etc.)

Provide directly or promote insurance company sponsored educational programs for stress or related issues (e.g., relaxation training, assertiveness, communication, time management, and social interactions)

Provide management training on workplace stress related issues (performance review, communication, personnel management, etc.)

Provide stress management educational messages to the general employee population through posters, brochures, videos or lectures, etc.

Health / Wellness Screening

Provide blood pressure screening (beyond pre-employment physicals)

Provide cholesterol screening

Provide blood tests for sugar

Provide health risk appraisal assessments

Provide health screening educational messages to the general employee population through posters, brochures, videos or lectures, etc.

Provide health education services (instruction, screening, etc.) to family members of associates

Establish a program theme or logo

Provide management training seminars on the importance of employee health promotion

Establish policies to recruit and retain health-oriented employees

Smoking

Establish a written smoke free work environment policy

- partial ban on smoking (designated or de facto smoking areas in the building)
- smoking allowed on the grounds but not in the building
- a total ban throughout the premises (including grounds)

Establish incentives for being a non-smoker or quitting smoking

Provide directly or promote smoking cessation programs/services

Evaluate smoking cessation programs by comparing pre-determined objectives to outcome measures (e.g., % of smokers who quit)

Provide anti-smoking educational messages to the general employee population through posters, brochures, videos or lectures