CITY OF LITTLE ROCK

SAFETY MANUAL

AUGUST 1994

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SAFETY

POLICY STATEMENT

The City of Little Rock (CLR) recognizes that its employees are the most important asset involved in meeting the service needs of its citizens. The City also recognizes that safeguarding the health and welfare of its employees cannot be stressed too strongly. It is the policy of the City that every reasonable effort will be made to provide and maintain a safe and healthy workplace and to establish and insist upon safe methods and practices at all times.

Department managers and supervisors must take steps to eliminate unsafe conditions and unsafe practices, to observe rules of conduct and safety, and to ensure equipment is used correctly. It is the responsibility of every employee to observe rules of conduct and safety and to properly use the equipment which is provided.

The City's safety rules and regulations are developed for the protection of employees and citizens. These rules and regulations are to be considered directive in nature and are applicable to all employees. Prevention of accidents is the responsibility of all City employees.

_____

Charles Nickerson, City Manager

SECTION 1 - SUPERVISOR'S SAFETY GUIDE

1. GENERAL

A. This section contains general safety guidelines for supervisors.

B. Supervisors are in unique positions of trust. The City relies on these representatives of management to apply all policies fairly. Each has the obligation to safeguard the well-being of employees in their section. No other responsibility is more important.

C. On the job accidents represent a serious threat to the physical well-being and productivity of City employees. Accident prevention calls for constant attention and supervisors must be guided by the following:

i. People are the City's most important asset and their safety is each supervisor's greatest responsibility.

ii. Know the rules of safety that apply to assigned activities.

iii. Anticipate the risks that may arise from changes in equipment or procedures. Make use of any expert safety advice that is available to help guard against new hazards.

iv. Take necessary actions to eliminate hazards and unsafe practices. No job will proceed where a reasonable question of safety remains.

v. Encourage employees to discuss the hazards of their work. Employees performing day-to-day job duties are a source of first-hand knowledge that will help prevent needless injury.

vi. Conduct vigorous and continuous training in accident prevention and on the job safety.

vii. Make sure that employees use the safeguards and personal protective equipment provided.

viii. If necessary, enforce safety rules by disciplinary action. These rules have been approved by City management and are for the protection of all employees.

ix. Set a good example. Each supervisor must demonstrate safety in work habits and personal conduct.

x. Investigate, analyze, and report every accident no matter how slight. When minor injuries are ignored, serious accidents may later develop.

xi. Cooperate fully with those in the organization or contracted by the City who are actively involved in employee safety. Their purpose is to prevent accidents and to reduce the cost of accidents which do occur.

xii. Promote safety consciousness. Supervisors shall conduct safety meetings as outlined in this manual.

xiii. Safety inspections will be conducted frequently to ensure that safe work practices are being followed.

2. EMPLOYEE SAFETY ORIENTATION

A. All employees shall have an orientation session on the aspects of safety for their specific work area/assignment.

B. This safety orientation session shall be conducted prior to the employee starting work in a new or re-assigned area.

C. The safety orientation session will be conducted by a supervisor familiar with the duties that will be assigned.

D. Upon completion of the safety orientation, both the employee and the supervisor will sign the orientation form. This orientation form will then be filed in the department personnel file, a copy shall be forwarded to the Safety/Loss Control Coordinator.

E. Note: Departments are required to ensure that <u>all</u> current employees have completed a safety orientation session and that the safety orientation forms are signed and filed as per 2.D. above.

3. SAFETY ORIENTATION FORM

Attached (pages 1-3) is a recommended safety orientation form. Departments will add or delete as is applicable for the specific division.

SAFETY ORIENTATION FORM

Check each of the items on this form at the time the instructions are given. When completed, have employee sign to verify the instructions were given and understood. Sign and return this form to the Department Director for filing in personnel file.

Employee's Name _____

Job Title _____ Date Hired/Promoted/Transferred: _____

01	Explanation of Safety Rules for Assigned Tasks	
02	Personal Protective Equipment - Required	
03	Personal Protective Equipment - Recommended	
04	Safety Devices	
05	Correct Lifting Techniques	
06	When and Where to Get Help	
07	Housekeeping	
08	Reporting Unsafe Conditions	
09	Reporting Injuries	
10	First Aid	
11	Emergency Aid	
12	Tour of Facility	
13	Location of First Aid Kit	
14	Location of Material Safety Data Sheets	
15	Demonstration of Assigned Tasks	
16	Required Rules of Conduct	
17	Miscellaneous Department Rules	

I have been instructed in the safety requirements of my job, and understand that it is my responsibility to observe rules of conduct and safety. I also understand that it is not possible to cover every potential safety related situation in this manner and that it is my responsibility to use common sense in performing my job safely.

I also understand that violations of rules of conduct and safety may result in disciplinary action, up to and including termination of employment.

Employee _____ Date _____

I have instructed the above employee in the safety requirements of their job, and they can be reasonably expected to perform their duties with a maximum degree of safety.

Supervisor _____ Date _____

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SECTION 2 - ACCIDENT INVESTIGATION

1. GENERAL

A Accident investigation and analysis is one means used to prevent or reduce future accidents. This section outlines accident and loss investigation procedures.

B. The first report of an on-the-job incident involving injury or loss shall be prepared and forwarded to Personnel within 24 hours as specified on the supervisor's accident report form. A copy of that form is attached to this section.

C. All accidents shall be investigated by supervisory personnel as soon after the accident as possible. A delay of only a few hours may permit important evidence to be destroyed or removed whether intentionally or unintentionally.

D. Critical incidents or "near misses" shall also be reported and fully investigated.

E. For the purposes of accident prevention, investigations must be for fact finding; not fault finding; fairness and impartiality are absolutely necessary. The value of such investigation lies in uncovering the incident's contributing causes. These will be analyzed so that corrective action will eliminate exposure to future accidents and injury.

2. RESPONSIBILITY FOR ACCIDENT INVESTIGATION

A. The level of supervision or management responsible for investigation of an accident is based on the severity and cost of the accident. All vehicle accidents, thefts, and acts of vandalism must be reported to the Police Department for investigation in addition to any other investigation conducted. The police report shall become part of the investigation file. Any internal investigation will be limited to those activities aimed at prevention of future accidents or losses.

B. For purposes defined in this manual, classifications of accident severity and cost are:

Class 1

Severity/Cost: Employee death, nonemployee death, motor vehicle or property damage in excess of $25,000, vandalism or theft in excess of $25,000.

Investigated by: Foreman, Division Manager, Department Director, Loss Control Specialist, and other management representatives or investigators as designated by the City Manager.

Class 2

Severity/Cost: Employee injury with more than 30 days time loss, serious injury of nonemployee, motor vehicle or property damage between $5,000 and $25,000, vandalism or theft between $5,000 and $25,000.

Investigated by: Foreman, Division Manager, Department Director, or other management representatives or investigator as directed by the City Manager or the Executive Safety Committee.

Class 3

Severity/Cost: Employee injury with less than 30 days time loss, injury of a nonemployee, motor vehicle or property damage from $500 to $5,000, vandalism or theft from $500 to $5,000.

Investigated by: Foreman, Division Manager, or other management representative or investigator as assigned by the City Manager or the Executive Safety Committee.

Class 4

Severity/Cost: Minor employee injury, motor vehicle or property damage less than $500, vandalism or theft less than $500.

Investigated by: Foreman, or other management representative, or investigator as assigned by the City Manager or the Executive Safety Committee.

3. ACCIDENT INVESTIGATION PROCEDURES

A. When a person is injured on the job, the supervisor must ensure that first aid is administered or professional medical attention is attained at once. After this has been completed, the investigation into the accident must begin immediately. The investigation must stress obtaining facts regarding the circumstances of the accident, not placing blame.

B. The following procedures will be effective when investigating accidents: (Classes 1, 2, and 3):

i. Go to the scene of the accident promptly.

ii. Talk with the injured person(s) if possible.

iii. Talk to witnesses.

iv. Listen for clues which indicate unsafe activities or conditions.

v. Make drawings or photos of the accident area. Indicate distances to landmarks or relevant objects.

vi. Encourage employees to give ideas for preventing similar accidents.

vii. Study possible causes, both unsafe acts and unsafe conditions.

viii. Confer with other supervisors and managers about possible solutions.

ix. Complete a Supervisor's Accident Report form and forward it to the Department Director within 24 hours after the accident. The Department Director will review and forward the form to the Personnel Department as soon as possible; but within an additional 24 hours.

x. Follow-up to make sure unsafe conditions have been corrected. If they cannot be corrected immediately, report this to the Division Manager and Department Director. Take necessary actions to protect all employees exposed to the hazard.

xi. Notify affected employees and supervisors of corrective action taken or other actions which may be required.

SUPERVISOR'S ACCIDENT REPORT

This accident report MUST be completed within 24 hours of accident.

For instructions on completing this form, see reverse side.

1. NAME OF INJURED: _____ DEPT. _____ ID # _____

2. DATE OF ACCIDENT: _____ TIME: _____ SITE: _____

3. DESCRIBE INJURY (Avoid Medical Terms): _____

4. DATE AND TIME REPORTED TO SUPERVISOR: _____

5. HOW LONG HAS INJURED EMPLOYEE BEEN ON THIS JOB? _____

6. DESCRIPTION OF ACCIDENT (Describe in detail. Attach extra sheets if required.)

_____

_____

7. ESTIMATE OF DAYS THAT WILL BE LOST: _____

8. WITNESS TO ACCIDENT: NAME _____ Phone # _____

NAME _____ Phone # _____

9. CONTRIBUTING CAUSE (Action by an employee or third party):

_____

_____

10. CONTRIBUTING CAUSE (Condition of equipment or environment):

_____

_____

11. HAD SAFETY INSTRUCTIONS BEEN GIVEN? YES ☐ NO ☐

12. WAS PRESCRIBED SAFETY EQUIPMENT IN USE? YES ☐ NO ☐

13. IF NEGLIGENCE OR FAILURE TO USE PROVIDED SAFETY EQUIPMENT, WAS A CONTRIBUTING CAUSE OF THIS ACCIDENT, HAS DISCIPLINARY ACTION BEEN TAKEN? YES ☐ NO ☐

14. WHAT CAN BE DONE TO PREVENT A RECURRENCE OF THIS ACCIDENT?

_____

_____

DATE: _____ SUPERVISOR'S SIGNATURE: _____

1. NAME OF INJURED: Identify the employee, include department/division.

2. DATE, TIME AND SITE OF ACCIDENT: When and where the accident occurred.

3. DESCRIBE INJURY: Avoid medical terms. State the type of injury and body part injured.

4. DATE AND TIME REPORTED TO SUPERVISOR: Date and time incident **first** reported to a supervisor.

5. HOW LONG HAS INJURED EMPLOYEE BEEN ON THIS JOB? Refers to actual job being performed when injured.

6. DESCRIPTION OF ACCIDENT: Iidentify objects associated with the accident. State how employee came in contact with the object.

7. ESTIMATE OF DAYS THAT WILL BE LOST: Indicate if any time will be lost and estimate amount of lost days.

8. WITNESS TO ACCIDENT: Get names of witnesses for further investigation.

9. CONTRIBUTING CAUSE,(ACTION BY EMPLOYEE)

and

10. CONTRIBUTING CAUSE,(CONDITION OF EQUIPMENT OR ENVIRONMENT): These are both accident causes. An accident seldom has a single cause. Determine all unsafe acts and conditions.

11. HAD SAFETY INSTRUCTIONS BEEN GIVEN? Refers to specific job being performed when accident happened.

12. WAS PRESCRIBED SAFETY EQUIPMENT IN USE? If not, investigate.

13. NEGLIGENCE OR UNSAFE ACT: If either of these were a contributing cause, possible disciplinary action(s) should be considered.

14. WHAT CAN BE DONE TO PREVENT A RECURRENCE OF THIS ACCIDENT?
Be specific. “By being more careful” is not an acceptable response.

SECTION 3 - SAFETY RECORDS

1. GENERAL

A. This section outlines administrative requirements for safety records.

B. The following records will be prepared and maintained in addition to the reports noted in Section 2 and supervisors' files:

i. Safety Orientation Form (see page 1-3)
1 copy to Department Files

ii. WCC Form 1 - Employee's First Report Injury
WCC Form N - Employer/Employee Notice of Injury
Supervisor's Accident Report
WCC Form E (as required) - Employer's Supplemental Report of Injury
Employee's Report of Accident. Copies of the forms are attached as Appendix III to this manual.
1 Copy To Department Files
Original to Loss Control Coordinator

iii. Minutes of Safety Meetings

1 Copy to Loss Control Coordinator
1 Copy for Department Files
1 Copy for Bulletin Board of Each Building

iv. Inspection Checklists (attached to this section)

1 Copy to Department Director
1 Copy for Department/Division Files
1 Copy for Bulletin Board of Each Building

v. Accident/Critical Incident Reports

1 Copy to Department Director
1 Copy to Loss Control Coordinator
1 Copy for Department Files

ITEM	SAFETY CHECKLIST - ADMINISTRATION	YES	NO
1.	Is there a current "Workers' Compensation Insurance" poster on display?		
2.	Are Material Safety Data Sheets on file for all hazardous chemicals on hand?		
3.	Are Hazardous Chemical Standards Training Records on hand and up-to-date?		
4.	Does a manager, supervisor, or foreman investigate all accidents and Workers' Compensation claims?		
5.	Does a manager or supervisor conduct periodic formal safety inspections?		
6.	Does a foreman conduct periodic informal inspections?		
ITEM	SAFETY CHECKLIST - WORKPLACE		
1.	Are all exits visible and unobstructed?		
2.	Are all exits marked with a readily visible sign that is properly illuminated?		
3.	Are there sufficient exits to ensure prompt escape in case of emergency?		
ITEM	SAFETY CHECKLIST - FIRE		
1.	Are fire evacuation plans posted and do employees know what they mean?		
2.	Are fire extinguishers inspected monthly for general condition and operability. Is inspection date noted on tag?		
3.	Are fire extinguishers mounted in readily accessible locations and have either a red backing and/or sign?		
4.	Is the fire alarm system tested at least annually?		
ITEM	SAFETY CHECKLIST - FIRST AID KIT		
1.	Is an appropriate first aid kit available and easily accessible?		
ITEM	SAFETY CHECKLIST - HOUSEKEEPING		
1.	Is smoking permitted only in designated areas per City policy?		
2.	Are "NO SMOKING" signs prominently posted for areas containing combustibles and flammables?		
3.	Are covered metal waste cans used for oily and/or paint soaked waste?		
4.	Are rubbish and litter disposed of daily?		
5.	Are paint spray booths, dip tanks, etc., and their ducts cleaned regularly?		
6.	Are stand mats, platforms, or similar protection provided to protect employees from wet floors?		
7.	Are waste receptacles provided and are they emptied regular?		
8.	Do the toilet facilities meet the minimum requirements of acceptable cleanliness?		
9.	Are washing facilities provided?		
10.	Are emergency eye wash and bodywash stations available as needed?		
11.	Are stairways in good condition and standard railings provided for every flight having four or more stairs?		
12.	Are floor kept clean and in good condition?		

Inspected by: _____ Title: _____ Date: _____

ITEM	SAFETY CHECKLIST - ELECTRICAL SYSTEMS	YES	NO
1.	Is electrical equipment not used for long periods of time disconnected or locked out from the power source?		
2.	Are fuse boxes and circuit breaker boxes equipped with lockout-tagout devices?		
3.	Are all light switches and receptacles in good condition? Are coverplates in place and in good condition?		
4.	Are all electrical cords placed so that they do not hang on pipes, nails, books, etc.?		
5.	Is there evidence of fraying on any electrical cords?		
6.	Are all electrical panel boards, boxes, cabinets, and switch enclosures covered and grounded?		
7.	Are all disconnect switches, feeder, and branch circuits legibly marked to indicate their purpose?		
8.	Are electrical outlets in washrooms and breakrooms grounded?		
9.	Are portable electrical tools and appliances grounded or of the double insulated type?		
10.	Do switches show evidence of overheating or damage?		
11.	Have steps been taken to ensure that flexible cords and extension cords are not:		
	a. used as substitute for fixed wiring?		
	b. run through a doorway, window, or similar opening?		
	c. run through a hole in the wall, ceiling, or floor?		
	d. attached to a building surface?		
12.	Is lighting of adequate intensity for the job being performed.		
13.	Is the electrical system checked periodically by someone familiar with the City Electrical Code & NEC?		
14.	Are all circuits, equipment, and fixtures fitted with proper lockout - tagout systems?		
15.	Are water fountains, vending machines, etc., properly grounded?		
ITEM	SAFETY CHECKLIST - PROTECTIVE EQUIPMENT		
1.	a. Hard hat(s) - available		
	b. Hard hat(s) - good condition		
	c. Hard hat(s) - used when needed		
	d. Gloves - available		
	e. Gloves - good condition		
	f. Gloves - used when needed		
	g. Eye protection - available		
	h. Eye protection - good condition		
	I. Eye protection - used when needed		
	j. Bodybelt/safety strap/climbers - available		
	k. Bodybelt/safety strap/climbers - good condition		
	l. Bodybelt/safety strap/climbers - used when needed		

Inspected by: _____ Title: _____ Date: _____

ITEM	SAFETY CHECKLIST - PROTECTIVE EQUIP. - CONT	YES	NO
	m. Apron - available		
	n. apron - good condition		
	o. apron - used when needed		
	p. hearing protection - available		
	q. hearing protection - good condition		
	o. hearing protection - used when needed		
ITEM	SAFETY CHECKLIST - COMPRESSED GAS		
1.	Are all compressed gas cylinders stored with protective caps over valves?		
2.	Are all compressed gas tanks secure in cart or against wall to keep from falling?		
3.	Are welding helmet/face protector or goggles available and worn?		
4.	Are all hoses attached to cylinders fitted with flashback arresters?		
ITEM	SAFETY CHECKLIST - CHEMICALS		
1.	Are cleaning supplies stored properly?		
2.	Are hazardous chemicals stored properly?		
3.	Are chemical and solvent containers sealed and labeled?		
4.	Are chemical spray records in compliance with state regulations?		
ITEM	SAFETY CHECKLIST - SHOPS		
1.	Are motors clean and kept free of excessive grease?		
2.	Are all machines or operations that expose operators to rotating parts, pinch points or flying chips, particles or sparks adequately guarded?		
3.	Are mechanical power transmission belts, chains, and pulleys guarded?		
4.	Is exposed power shafting less than 7 feet from the floor guarded?		
5.	Is compressed air used for cleaning and power tools regulated to less than 30 psi?		
6.	Are compressed air lines clearly marked?		
7.	Are hand tools and other equipment regularly inspected for safe condition?		
8.	Are power saws and similar equipment provided with safety guards?		
9.	Are grinding wheel tool rests in place and set to within 1/8 inch or less of the wheel?		
10.	Is there any system for inspecting small hand tools for burred ends, cracked handles, or weakening flaws?		
11.	Are compressed gas cylinders regularly examined for signs of defects, deep rusting, or leakage?		
12.	Is care used in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage?		

Inspected by: _____ Title: _____ Date: _____

ITEM	SAFETY CHECKLIST - SHOPS - CONT	YES	NO
13.	Are safety valves tested regularly and frequently?		
14.	Are compressed gas tanks checked for inspection dates?		
15.	Is there sufficient clearance for stoves, furnaces, etc., for stock, woodwork, or other combustibles?		
16.	Have safety labels/signs been posted in proper places?		
17.	Are goggles and face shields worn when needed?		
18.	Is the ventilation system working properly?		
19.	Are personnel operating power tools prohibited from wearing loose fitting clothes?		
20.	Is wearing of rings and jewelry prohibited while operating equipment?		
21.	Are compressed gas tanks clearly marked with the name of the gas?		
22.	Are only trained personnel allowed to operate forklift trucks?		
23.	Are ONLY authorized and trained personnel permitted to use welding equipment?		
24.	Are all combustible materials near the operator covered with protective shields or otherwise protected?		
25.	Have operators been given a copy of operating instructions and are they following them?		
26.	Are operators using the proper protective equipment?		
27.	Is ventilation equipment provided for removal of contaminants and is it operating properly?		
28.	Is all machinery permanently fastened to the floor?		
ITEM	SAFETY CHECKLIST - LABORATORIES		
1.	Is the amount of glassware and chemicals kept to a minimum in work areas?		
2.	Is the housekeeping satisfactory?		
3.	Is all electrical equipment properly grounded?		
4.	Is eye protection available and worn when needed?		
5.	Are heavy items stored on lower shelves?		
6.	Are chemicals kept at a sufficient operating level, i.e., not over-stocked?		
7.	Are chemicals clearly labeled?		
8.	Are like (non-reactive) materials stored together?		
9.	Are areas available for working (pouring chemicals) other than in the stock room?		
10.	Are shelves fastened to the wall?		
11.	Are Material Safety Data Sheets on file for all hazardous chemicals on hand?		

Inspected by: _____ Title: _____ Date: _____

SECTION 4 - SAFETY MEETINGS

1. OVERVIEW

This section outlines requirements for safety meetings conducted by City of Little Rock supervisors.

2. GENERAL

A. A safety meeting is any meeting or gathering of employees where a program or talk is given related to safety on or off the job.

B. Safety meetings may be conducted by a Department Director, Division Manager, foreman, an employee or other individual with knowledge or experience on the specific subject matter to be covered.

C. Safety meeting requirements are as follows: minimum - one per calendar quarter; recommended - one per month.

D. There is no minimum or maximum time allowed for a safety meeting. However, most safety meetings should fall within the 15 to 30 minute time frame.

3. RECORDS OF SAFETY MEETINGS

A. Minutes of safety meetings will be kept to document the material covered and the persons present.

B. The following types of information must be included in the minutes:

i. Location of meeting.

ii. Date of meeting.

iii. Name of department(s) or division(s) participating.

iv. Subjects covered.

v. Name of personnel attending (or attach copy of sign-in sheet).

vi. Name of person or persons conducting the safety meeting.

vii. Supervisor's signature. Additional comments may also be listed.

C. Minutes of safety meeting shall be distributed as follows:

i. Original - Personnel Department - Loss Control Specialist

ii. Supervisor's File

iii. Department Director

4. SAFETY TRAINING MATERIAL AND SOURCES

A. Materials used for safety meetings must relate to safety on or off the job.

B. Any of the following media or methods may be used in safety meetings: Films, flip charts, film strips, slides, slides/tape shows, lectures, or discussion.

C. The Personnel Department will develop and maintain a library of safety materials and will supply a list of available materials and sources of safety programs.

D. Some other sources of materials for use in safety meetings are: State Police, State Game and Fish Commission, State Department of Labor, equipment manufacturers/distributors and companies providing insurance coverage.

5. SAMPLE MEETING FORM

SAFETY MEETING REPORT FORM

LOCATION

DATE

DEPARTMENT(S) WITH PERSONNEL ATTENDING

_____

_____

SUBJECTS COVERED

_____

_____

_____

_____

PERSONNEL ATTENDING

_____

_____

_____

_____

NAME OF SUPERVISOR CONDUCTING THE SAFETY MEETING

Print _____

Signature _____

Date _____

SECTION 5 - FIRST AID KITS

1. OVERVIEW

   A. This section describes unit type first aid kits and the recommended assortment of supplies for first aid kits used by City of Little Rock employees. Each supervisor shall have a copy of an approved First Aid and Personal Safety Handbook for use in connection with approved First Aid kits.

   B. Acceptable unit type first aid kits shall be required as standard equipment in all vehicles or equipment operated by City employees.

   C. Unit first aid kits are made in five standard sizes: 6, 10, 16, 24, and 36 unit. No kit smaller than 16 unit shall be approved for use by City employees.

   D. Description of Unit Type First Aid Kits:

      i. Unit first aid material is packaged primarily in single disposable packages. This type packaging eliminates the problem of bottled antiseptic liquids or large tubes of cream which can break, leak, or evaporate and cause damage to other items in the kit.

      ii. Typical unit type first aid kits contain adequate emergency first aid instruction and a more functional assortment of individually sealed packages than those usually found in other type kits.

      iii. Unit first aid kit manufacturers seal individual units in see-through protective wrapping keeping the contents free from dust and other contamination during transportation and storage. The unit wrapping also facilitates kit inspection since unwrapped or damaged units are easy to locate and replace.

2. GENERAL

   A. First aid kits shall be conspicuously located where they will be readily accessible.

   B. First aid kits shall not be obstructed or obscured from view. An exception is allowed only for large rooms and certain locations where visible obstructions cannot be completely avoided, if some means is provided to indicate the location. If the first aid kit is mounted or stored in a vehicle or bin, it must be readily accessible and have a "First Aid Kit Inside" sign mounted on the outside bin door.

   C. First aid kits shall be properly and completely filled. For a list of approved first aid kit configurations, see page 5-3. Replacement first aid kits and specific supplies shall be the responsibility of each individual department.

D. Supervisors shall inspect first aid kits monthly or at more frequent intervals when circumstances require to ensure that they are in their designated places; to ensure that they are properly and completely filled; and to detect any damage to the kit or its contents. The inspection will normally be performed by the supervisor or a designated representative.

3. FIRST AID KIT SIZE REQUIREMENTS

A. First aid metal kit sizes for vehicles and equipment are as follows:

	MINIMUM SIZE
Passenger car	16 unit
Trucks and vans	16 unit
Crew cab trucks	24 unit
Trenching Equipment	16 unit

B. First aid kit sizes for buildings are as follows:

Minimum Size	16 unit

4. KIT CONFIGURATION

DESCRIPTION	16 UNIT	24 UNIT
Latex Gloves	2-4 pair	2-4 pair
Adhesive Bandages	2	3
Compress Dressing	1	1
Triangular Bandage	1	1
Oval Eye Pads	2	2
Adhesive Tape 1/2”	1	1
Gauze (Roll) 2”	1	1
Sterile Gauze (Pad) 3” x 3”	1 box	1
Antiseptic Towelette	1 box	1
Cold Pack	1	1
Eye Wash 4 oz.	1	1
Abdominal Pad 9”		
Tweezers	1	1
Scissors	1	1
First Aid Handbook	1	1
Antibiotic Ointment 1 oz.	1 tube	
Sting Swabs	-	1
Q Tips	-	1
Adhesive Bandages - Knuckle	-	1
Poison Ivy Ointment	-	1
Rescue Blanket	-	1
CPR Microshield Pocket Mask with Case	1	1

Items not specifically noted are optional and may be included at the Department Director's option.

SECTION 6 - FIRE EXTINGUISHERS

1. GENERAL

   A. This section describes portable fire extinguishing equipment which is approved for use at City of Little Rock facilities and work sites. It also describes the class of fires and hazard classification requirements, and use and maintenance of portable extinguishers.

   B. Portable extinguishers are intended as a first line of defense to cope with fires of limited size. The Fire Department shall be notified as soon as a fire is discovered. The alarm must not be delayed while attempting to extinguish the fire by use of portable fire extinguishers.

   C. Fire extinguishers shall be selected for the specific class or classes of hazard:

      i. "Class A" - Used for fires in ordinary combustible materials such as wood, cloth, paper, plastics, and rubber.

      ii. "Class B" - Used for fires in flammable liquids, gases, and grease.

      iii. "Class C" - Used for fires which involve energized electrical equipment.

2. GENERAL REQUIREMENTS

   A. Portable extinguishers shall be maintained in a fully charged and operable condition and kept in their designated places at all times when they are not being used.

   B. Extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. They shall be located along normal paths of travel, including exits.

   C. Extinguishers shall not be obstructed or obscured from view. In areas involving visual obstructions which cannot be completely avoided, alternate means shall be provided to indicate the location of extinguishers.

   D. Extinguishers shall be installed on hangers or in brackets, mounted in cabinets or set on shelves. Larger extinguishers shall be mounted on wheeled carriers.

   E. The operating instructions on the extinguisher name plate shall be legible and face outward.

   F. Extinguishers shall be visually inspected monthly to ensure that they are in their designated places, they have not been actuated or tampered with, and to detect any obvious physical damage. Inspections shall also check the pointer on the pressure gauge is in the operable area.

G. Extinguishers shall be inspected annually to ensure that their gross weight falls within required operating ranges. Extinguishers whose actual gross weight does not fall within the guidelines listed on the extinguisher maintenance plate shall be removed from service until recharged.

H. Monthly and annual inspections will be performed by the supervisor or his designated representative. Department Directors may request that annual inspections be conducted by Fire Department personnel.

I. Monthly and annual inspections will be recorded on appropriate extinguisher inspection tags. The inspection tag shall be attached to the extinguisher.

J. During inspections, dry chemical extinguishers shall be turned upside down for a short period of time to ensure that the chemical does not become packed.

K. Any extinguisher showing dents, cuts, or burns shall be removed from service until it has been hydrostatically tested.

L. Each department, agency or facility shall maintain spare extinguishers. Extinguishers out of service for maintenance or recharge shall be replaced by spare extinguishers having the same classification and at least equal rating.

M. All extinguishers 5 lbs. or larger in size shall be equipped with a discharge hose.

N. Extinguishers used by the City of Little Rock shall have Underwriters' Laboratory and Factory Mutual approval.

3. USE OF EXTINGUISHERS

A. On discovery of a fire CALL THE FIRE DEPARTMENT (Dial 9-1-1) and evacuate all personnel from the area.

B. Use common sense. If the fire cannot be controlled with fire extinguishers, DO NOT ATTEMPT TO FIGHT THE FIRE.

C. To activate the extinguisher remove the "pull pin" from the top lever of the valve assembly handle.

D. Plan a retreat in case the extinguisher does not succeed in putting out the fire.

E. The contents are discharged by pressure - DO NOT DISCHARGE AT A PERSON'S FACE.

F. Hold the extinguisher firmly in an upright position.

G. Stay low to avoid inhalation of smoke and aim discharge just under the flames using a side to side motion sweeping the entire width of the fire. For wall fires, start at the bottom, sweep from side to side and progress upward. For floor fires, sweep from side to side and move forward as fire diminishes to reach far edge of the fire.

H. NEVER USE EXTINGUISHERS AT DISTANCES OF LESS THAN 6 FEET.

I. Never move into an area where a fire was burning even though it appears to have been extinguished.

4. EXTINGUISHER REQUIREMENTS FOR BUILDINGS

A. Extinguishers for use in the computer center shall be of an approved extinguishing agent.

B. Extinguishers for all other applications shall be multipurpose dry chemical A:B:C.

C. Extinguishers shall be mounted to ensure a maximum travel distance of 75 feet.

D. Extinguisher shall be mounted as directed in Paragraphs 2.A through 2.F of this section.

E. The location of fire extinguishers must be marked conspicuously.

5. EXTINGUISHER REQUIREMENTS FOR VEHICLES

NOTE: Any City vehicle used to transport flammable materials or explosives will be equipped with two 10 lb. fire extinguishers with A:B:C: rating.

A. Extinguisher requirements for vehicles are as follows:

Vehicle Type	**Quantity**	**Minimum Requirements**
Passenger car	1	5 lb. with A:B:C or B:C rating
Half or 3/4 ton pickup trucks and vans (w/o hydraulic equipment)	1	5 lb. with A:B:C or B:C rating
1 ton or larger trucks (w/o hydraulic equipment)	1	10 lb. with A:B:C rating
Trucks or vans with hydraulic equipment	1	10 lb. with A:B:C rating

B. Extinguishers shall be securely mounted and conspicuously located where they are readily accessible and immediately available in the event of fire.

C. Extinguishers that are mounted in a compartment or bin shall be readily accessible with a "Fire Extinguisher" sign mounted on the outside bin door.

SECTION 7 - LIFTING AND CARRYING

1 GENERAL

A. Lifting incorrectly is a major cause of both office and industrial injuries. This section covers how to lift objects without injury.

B. The back is one of the most injury prone structures in the human body and most back injuries are caused by improper lifting.

C. Physical differences make it impractical to set up safe lifting limits for all employees.

2. LIFTING

A. The correct application of six basic lifting factors is essential. The six factors are:

i. Correct Position of Feet - Feet shall be comfortably spread (giving greater stability) with one foot alongside the object being lifted and one foot behind the object being lifted. The foot alongside the object shall be pointing in the direction of travel. The foot positioned behind the object assists with both balance and thrust.

ii. Straight Back - A straight back is not necessarily a vertical back. When lifting weights from the ground, the inclination of the back shall be from the hips so that the normal curvatures are maintained. With "straight back lifting," the spine is straight and the pressure on the lumbar intervertical discs is evenly distributed. When lifting with the back bent, the spine forms an arc with the result that the lower muscles are subject to strain and there is uneven pressure on the discs.

iii. Arms Close to the Body - When lifting and carrying weights, the arms shall be close to the body and remain straight whenever possible. Carrying involves a static posture of the arms, and particularly in the case of long distances, any assistance given to the body in supporting the weight will lessen tension in the muscles. Carrying with the arms straight enables the weight to rest against the thighs.

iv. Correct Hold - The palm grip is one of the most important elements of correct lifting. The fingers and the hand are extended around the object to be lifted. An insecure grip may be due to taking the load on the fingertips, thus creating undue pressure at the ends of fingers and strain to muscles and tendons of the arm. Greasy surfaces often prevent a secure hold. Whenever possible, such surfaces shall be wiped clean before lifting.

v. Correct Position of Head - Raising the head up, and tucking the chin in straightens the whole spine not merely the neck. This automatically raises the chest and conditions the shoulders for more efficient arm action.

vi. Use of Body Weight - Position the body so that its weight is centered over the feet. This provides a more powerful line of thrust and ensures better balance. Start the lift with a thrust of the rear foot combined with the extension of the knee joints. This will move the body forward and upward and for a brief period it will be off balance. This is immediately countered by bringing the back leg forward as in walking.

3. TIPS ON LIFTING

A. If the object is too large or too heavy to be handled by one person, get help.

B. Before lifting the load to be carried, the employee shall consider the distance to be traveled and the length of time he will have to maintain the grip. He shall recognize the fact that his gripping power may lessen if he has to carry the load a long distance, especially if the movement involves climbing stairs or ramps.

C. To place an object on a bench or table, first set it on edge and push it far enough onto the support to be sure it will not fall. Release it gradually as it is set down. Move it in place by pushing with the hands and body from in front of the object. This method prevents fingers from getting pinched.

D. It is especially important that an object placed on a bench or support be securely set so that it will not fall, tip over, or roll off. Supports shall be correctly placed and strong enough to support the load.

E. To raise an object above shoulder height, first lift it to waist height, rest the edge of the object on a ledge, stand, or hip, next shift hand position so the object can be boosted after knees are bent. Straighten knees as the object is lifted or shifted to the shoulders.

F. To change direction, lift the object to carrying position and turn the entire body, including the feet. Do not twist the body. In repetitive work, the person lifting and the material being lifted shall both be positioned so that the person will not twist his body when moving.

G. To place an object manually in a tight space it's safer to slide it into place with the hands in the clear rather than to lift it.

4. TEAM LIFTING AND CARRYING

A. When two or more persons carry a single object, they shall adjust the load so that it rides level and so that each carries an equal part of the load. Test lifts shall be made before proceeding.

B. When two persons carry long sections of pipe or lumber, they shall carry them on the same shoulder and walk in step.

C. When a crew of several people carry a heavy object, the foreman shall direct the work and special tools such as tongs shall be used when necessary.

SECTION 8 - BUILDING AND OFFICE SAFETY

1. GENERAL

   A. This section covers safety precautions for all buildings. An injury to an office worker creates the same costs and lost productivity as injury to an employee working in a high hazard area.

2. EXITS, AISLES, STAIRS, AND FLOORS

   A. All building doors shall open outward.

   B. All exit doors shall be marked and lighted.

   C. Glass doors shall have some conspicuous painted or decaled design or other clearly visible indicator approximately 4-1/2 feet above the floor and centered on the door.

   D. Safety glass complying with ANSI Standard Z97.1 shall be installed in glass doors.

   E. Doorways and exits shall not be obstructed. If any doorway must be obstructed for maintenance, blocked doors shall be marked on the opposite side with a sign indicating "Door Blocked," and with an alternate exit noted

   F. Offices located in basements shall have at least two exits.

   G. Exit doors and aisles shall be continually unobstructed and unlocked in the direction of exit.

   H. Aisle ways shall be a minimum of 36" in width for light traffic areas and 48" in width for moderate traffic areas.

   I. Stairs and aisles shall be kept clean and free of obstacles or slippery surfaces and shall be well lighted.

   J. Posters, bulletin boards, and other distracting objects are prohibited on stairways, landings, and stairwells.

   K. Slippery or worn treads on stairs shall be repaired or made safe by coating them with nonskid surfacing material.

   L. Handrails shall be installed on stairs having more than four risers.

   M. Handrails and stair rails shall have smooth surfaces and must be located 34 inches above the stairway treads.

   N. Employees shall not congregate on stairs, landings, or outside doors at the end or foot of stairways.

O. Inside stairway lights shall be equipped with three-way switches at the top and bottom landings. This requirement shall be effective for all buildings built or remodeled after July 1, 1993.

P. Stairs and risers shall be of uniform size.

Q. Floors shall be kept clean and in good condition.

R. Nonskid floor finishes shall be used for floor protection.

S. Tripping hazards such as defective floors, rugs, floor mats, etc., shall be repaired or replaced immediately.

3. ELECTRICAL SYSTEMS

A. Electrical equipment not used for long periods of time shall be disconnected from power sources.

B. All circuit breakers and fuses shall be of proper size for the electrical circuits.

C. All circuit breaker and fuse panels circuit shall be labeled.

D. Breaker and fuse panels, motor controls, and electrical enclosures shall have a minimum forward clear working space of three feet. The minimum width of a work area shall be 2-1/2 feet.

E. Fuse boxes and circuit breaker boxes shall be equipped with lockout/tagout capabilities.

F. Flexible cords and cables shall be used only for:

(i) Pendants
(ii) Wiring of fixtures
(iii) Connection of portable lamps or appliances
(iv) Elevator
(v) Wiring cranes and hoists
(vi) Connection of equipment to facilitate frequent interchange

G. Flexible cords and cables shall not be:

i. Used as substitute for fixed wiring
ii. Run through holes in walls, ceilings, and floors
iii. Run through doorways, windows, etc.
iv. Attached to building surface
v. Concealed behind building walls, ceilings, or floors

H. Unused openings of electrical enclosures shall be effectively closed.

I. All light switches and receptacles shall have a protective cover.

J. All electrical receptacles shall be the three wire grounding type.

K. Electrical receptacles near lavatories or other sources of water shall have a ground+ fault circuit interrupter.

L. Drinking fountains, vending machines, and other equipment shall be properly grounded.

M. Extension cords shall be used in accordance with Section 9 of this manual.

4. FIRE SAFETY

A. Fire evacuation plan shall be posted throughout all buildings.

B. Fire extinguishers shall be placed in buildings and checked as specified in Section 6 of this manual.

C. All personnel shall be familiar with the operation of fire extinguishers.

D. All buildings shall have a sufficient number of trash cans.

E. All trash containers shall be made of nonflammable materials and emptied daily.

F. Smoking is prohibited in all areas where flammable materials are stored or used.

5. FALLS

A. Falls are the most common accident and account for the most disabling injuries.

B. Common causes of falls are:

i. Leaning back or tilting a chair;
ii. Tripping over or catching a heel on stairs or a doorsill;
iii. Defective floor surfaces;
iv. Tripping over loose telephone wire or electric cord; and
v. Tripping over open drawers.

C. Some tips for avoiding falls are:

i. Never lean or tilt chairs back.
ii. Never stand on chairs or furniture.
iii. Always use a ladder or step stool to reach high places (use of step ladders is covered in Section 29 of this manual.)
iv. Wipe up spilled liquids immediately.
v. Pick up paper, paper clips, rubber bands, pencils, and other loose objects.
vi. Always use handrail when ascending or descending stairs.
vii. Never carry objects in a position that impedes vision.
viii. Close drawers when not in use.
ix. Keep aisles clear of obstructions.

6. DESKS, STORAGE AND FILING CABINETS

A. Filing cabinets are responsible for many injuries in the office.

B. The following precautions are necessary to prevent desks, storage, and filing cabinet accidents:

i. Never bump file drawers closed with any part of the body.
ii. Drawers shall be closed immediately after use and not left open.
iii. Only one drawer shall be open at a time to prevent the cabinet from tipping over.
iv. File cabinets shall be bolted together or otherwise secured whenever possible.
v. Climbing on drawers or cabinets is forbidden.
vi. Step stools used in filing areas are tripping hazards. Store them in a safe location.
vii. Razor blades, thumb tacks, and other sharp objects shall not be thrown loosely into drawers.
viii. Card index files, dictionaries, and other heavy objects shall be kept off the top of office cabinets, and other high furniture.
ix. Do not leave breakable objects on the edge of desks, file cabinets, storage cabinets, or tables where they can easily be pushed off.

7. MISCELLANEOUS

A. Illumination levels shall be adequate for the job being performed.

B. A first aid kit shall be available in all buildings. Section 5 of this manual describes first aid kits.

C. All buildings designated as primary work areas must have rest rooms or wash rooms. (A primary work area is a building where one or more employees spend eight or more hours per day.

D. Each rest room or wash room shall be equipped with the following as a minimum requirement:

i. Lavatory with hot and cold water
ii Soap or similar cleansing agent
iii. Paper towels or hot air hand dryers
iv. Toilet facility

E. Running in buildings is prohibited.

F. Fans shall be placed where they cannot fall on anyone.

G. Fans shall not be handled until the power is turned off and the blades stop turning.

H. Never hand knives or scissors to someone with the point toward them.

I. Paper cutters shall be stored with the blade secured and shall be equipped with a guard that affords maximum protection.

SECTION 9 - EXTENSION CORDS

1. GENERAL

A. This section covers the selection, care, and use of low voltage electric extension cords.

B. An extension cord is an electrical cord equipped with an attachment plug at one end and cord connector body at the other end. The cord connector may have one or multiple outlets.

C. Extension cords may be used to provide a temporary power source for power tools, machines, equipment, etc.

D. Permanent receptacle outlets shall be installed at convenient locations to eliminate the necessity of using extension cords for other than limited periods of time.

E. The permanent use of extension cords utilizing a surge protector for microcomputers is acceptable.

F. Where different voltages, frequencies, or types of current (A.C. or D.C.) are to be supplied by portable cords, receptacles shall be of such design that attachment plugs used on circuits are not interchangeable.

G. Extension cords used with portable electric tools and appliances shall be three-wire type.

2. CARE AND USE

A. Extension cords shall be used only in continuous lengths. Spliced cords shall not be used.

B. Worn, frayed, or damaged extension cords shall be removed from service and replaced.

C. Extension cords shall be protected against accidental damage. Damage may be caused by traffic, sharp corners, pulling or dragging over sharp objects and pinching in doors.

D. Extension cords shall not be permanently attached to building surfaces; they shall not be run through holes in walls, ceilings, on walls, through doorways or windows, or concealed behind building walls, ceilings, or floors.

E. Extension cords, plugs, and connectors shall be inspected frequently. Inspection shall include visual wear check, ground continuity, and object polarity.

F. Extension cords shall be disconnected before making inspection, adjustment, or repair. Repair of extension cord or fittings shall be done only by qualified personnel.

G. To disconnect an extension cord, grasp the plug and pull. Do not pull the cord.

H. Always disconnect an extension cord to clean. Clean extension cord with a dry cloth. If this method does not clean satisfactorily, use a mild detergent and water. Do not use solvents to clean extension cords.

I. Extension cords used outdoors or in wet areas shall have the attachment plug and cord connector molded to the cord.

J. Never use multiple cords joined together to extend the distance from an electrical connection.

3. SELECTION

A. The wire size required varies depending on cord length and ampere load.

B. For most applications, the following sizes of extension cords are recommended:

LENGTH:	25 Feet	50 Feet	100 Feet
WIRE SIZE:	16 Gauge	14 Gauge	12 Gauge

MINIMUM GAUGE (WIRE SIZE FOR EXTENSION CORD)

AMP RATING RANGE AT 120 VOLTS	25 FEET	50 FEET	100 FEET	150 FEET
0-2	18	18	18	16
2-3	18	18	16	14
3-4	18	18	16	14
4-5	18	18	14	12
5-6	18	16	14	12
6-8	18	16	12	10
8-10	18	14	12	10
10-12	16	14	10	8
12-14	16	12	10	8
14-16	16	12	10	8
16-18	14	12	8	8
18-20	14	12	8	6

SECTION 10 - MATERIAL STORAGE

1. GENERAL

   A. This section covers material storage.

   B. Lifting is covered in Section 7 of this manual.

   C. Flammable liquids and combustibles are covered in Section 20.

2. MATERIAL STORAGE

   A. Stored materials shall be neatly stacked and easily accessible.

   B. Materials shall have a minimum of 18" air space between the top of the stack and the ceiling.

   C. Cardboard boxes, cartons, bags, etc., shall be stacked on pallets or platforms.

   D. Stacked or stored materials shall not project into aisles.

   E. Stacked materials shall be cross stacked by placing one layer of material at right angles to the layer below.

   F. When stacking bagged materials, the mouths of the bags shall be toward the inside of the pile. Bags shall be cross stacked to a maximum height of 5 feet.

3. HAND TRUCKS, DOLLIES, AND WHEELBARROWS

   A. Types of hand trucks, dollies, and wheelbarrows include: two wheeled, flat, platform, refrigerator and appliance.

   B. To decrease hazards to toes and feet, wheels shall be as far under the load being moved as practical.

   C. Equipment shall be inspected before each use and kept in good repair. Axles shall be kept greased according to manufacturer's recommendations.

   D. The type of truck most suitable for the work at hand shall be used.

   E. Two wheel truck safe procedures that shall be followed:

      i. Tip the load to be lifted forward slightly so that the tongue of the truck goes under the load.

      ii. Push the truck all the way under the load to be moved.

iii. Keep the center of gravity of the load as low as possible. Place heavy objects below lighter objects. When loading trucks, loaders shall keep their feet clear of the wheels.

iv. Place the load well forward so the weight will be carried by the axle not by the handles.

v. Place the load so it will not slip, shift, or fall. Load only to a height that will allow a clear view ahead.

vi. When a two wheel truck or wheelbarrow is loaded in a horizontal position, raise it to traveling position by lifting with the leg muscles and keeping the back straight. Observe the same principle in setting a loaded truck or wheelbarrow down. (See Lifting Section 7.)

vii. Walk upstairs by facing the load and walking up backwards - get assistance for heavy loads.

viii. Walk downstairs by facing the load and walking forward - get assistance for heavy loads.

ix. Other than climbing upstairs, never walk backwards with a hand truck.

x. For extremely bulky items or pressurized items such as gas cylinders, strap or chain the item to the truck.

xi. When going down an incline, keep truck ahead, when going up an incline keep truck behind. (This applies to four-wheel as well as two-wheeled trucks.

xii. Move trucks at a safe speed. Do not run. Keep truck constantly under control.

F. Four wheel truck operation follows rules similar to those for two wheel trucks. Extra emphasis must be placed on proper loading. Four wheel trucks shall be evenly loaded to prevent tipping. Four wheel trucks must be pushed rather than pulled except for a truck that has a fifth wheel and a handle for pulling.

G. Trucks shall never be loaded so high that operators cannot see where they are going. If there are high backs on the truck, two employees shall move the vehicle, one guiding the front end, the other guiding the back end. Handles shall be placed at protected places on the racks or truck body so that passing traffic, walls, and other objects will not crush or scrape the operator's hands.

H. Truck contents shall be arranged so that they will not fall if the truck or the load is bumped.

SECTION 11 - HEARING CONSERVATION

1. GENERAL

   A. This section covers noise exposure and the use of hearing protectors.

   B. Because noise problems are extremely complex, there is no one standard program applicable to all situations. The City will consider and evaluate noise problems and take steps toward the establishment of effective hearing conservation procedures.

   C. Objectives of the Hearing Conservation Program are:

      i. Evaluation of noise exposures and classification of operations as to level of exposure and degree of hazard.

      ii. Control hazardous noise exposures by engineering measures where feasible.

      iii. Consideration of elimination or reduction of noise exposure in the planning of new operations and the purchase of new equipment or machinery.

      iv. Use of personal hearing protective devices such as earplugs or muffs wherever the noise cannot be adequately controlled by administrative or engineering measures.

2. MONITORING

   A. The Benefits Manager and Executive Safety Committee will assist Department Directors and supervisors in determining if any employee's exposure equals or exceeds an eight hour time weighted average of 85 decibels (dBA) measured on the A scale (as established by the Federal Occupational Safety and Health Administration). This determination shall be based on all information, observations, or calculations which indicate that employee noise exposure may be at or above that level.

   B. When information provided by the supervisor or through other information or observation indicates that an employee's exposure may equal or exceed an eight hour time weighted average of 85 decibels, the Benefits Manager shall assist in obtaining noise abatement measures as described in 1.C above.

3. EXPOSURE LIMITS

   A. Protection against the effects of noise exposure is required when the sound level exceeds those shown in the chart below measured on the A scale of a standard sound level meter at slow response.

PERMISSIVE NOISE EXPOSURES

DURATION PER DAY, IN HOURS	SOUND LEVEL dBA SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
.5	110
.25 or less	115

B. Protection against the effects of noise exposure is optional when the sound level is less than 90 dBA on the A scale at slow response.

C. When employees are subjected to sound exceeding 90 dBA, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound level below 90 dBA, personal protective equipment shall be provided and used to reduce the effects of sound levels to within the permissible levels.

4. HEARING PROTECTORS

A. The City will provide hearing protectors to employees exposed to a time weighted average of 85 decibels or greater. Hearing protectors will be replaced as necessary.

B. Supervisors shall ensure that hearing protectors are worn by all employees who are exposed to a time weighted average of 85 decibels or greater or who have experienced a significant threshold shift.

SECTION 12 - EXPOSURE TO HEAT AND COLD

1. COLD ENVIRONMENTS

A. OVERVIEW

i. This section describes hazards of working in cold environments, measures to prevent over exposure and first aid for frostbite and hypothermia.

ii. Under certain conditions, frostbite and hypothermia can occur at any time. Both of these injuries are a result of over exposure to cold. The effects and symptoms are not obvious until a danger point has been reached.

iii. Although most cases of hypothermia develop outdoors in air temperatures between 30° and 55° F. Hypothermia also can overwhelm an elderly person in room temperatures up to 65° F.

B. PREVENTING HYPOTHERMIA

- Get the victim to medical help immediately. If medical help is not available, first get the victim out of the wind, snow, or rain; keep energy use to a minimum, keep the person awake.

- Remove all wet clothing. Warm the victim enough to cause them to adjust to the warmer environment. Put the person into dry clothes and a blanket. If possible, increase the room temperature.

- It is important for all victims of hypothermia to be checked by a physician as soon as possible, the effects of the cold may cause other injuries.

- Give the victim a warm, <u>non-alcoholic</u> drink. Alcohol dilates the blood vessels near the skin surface which increases heat loss and lowers body temperature.

- Avoid prolonged exposure to cold without protection.

- Wear adequate clothing protecting critical body areas such as the head, neck, sides of the chest, and groin. Several layers of clothing give an insulating effect. Clothing made of wool, sheepskin or fluffy wool down increases insulation.

C. PREVENTING FROSTBITE

- Wear several layers of loose fitting clothing.

- If the outdoor temperature is freezing, protect the feet with two pairs of wool stockings or one pair of wool and one pair of cotton.

- Wear mittens instead of gloves.

- Replace wet garments immediately.

- Do not use alcohol as an internal antifreeze. Alcohol hastens the loss of body heat.

- Cigarette smoking constricts the blood vessels and limits the blood supply to arms and legs, increasing susceptibility to frostbite.

D. TREATING FROSTBITE

- Protect the affected area from further injury, warm it quickly, and maintain respiration.

- Bring the victim indoors as soon as possible and cover with blankets or extra clothing.

- Give the victim a warm nonalcoholic drink. Alcohol dilates the blood vessels near the skin surface which increases heat loss and lowers body temperature.

- Place the frostbitten area in warm (never hot) water. Water shall be slightly above normal body temperature (100° to 105° F.) If warm water is not available or practical to use, warm the affected area gently in a sheet or warm blanket. Never apply a heat lamp or hot water bottle.

- Never rub the affected areas. Rubbing further damages the injured tissues.

- Once the affected area is warm again, stop the warming process and have the victim exercise the area. If the feet are involved, do not allow the victim to walk after the affected part thaws.

- If fingers or toes are involved, place dry sterile gauze between them to keep them apart.

- Elevate the frostbitten parts. (This helps blood circulation.)

- Give fluids. Add one level teaspoon of salt and one-half teaspoon of baking soda to each quart of lukewarm water or mix two pinches of salt and one pinch of soda in a glass of water.

- Obtain medical assistance as soon as possible.

2. HOT ENVIRONMENTS

A. OVERVIEW

i. This section describes the hazards faced when working in hot environments, measures to take to prevent over exposure and first aid for heat related problems.

ii. Heat loss from increased skin blood circulation is the usual method of maintaining a constant body temperature. As environmental temperatures approach normal skin temperature, the job of cooling the body becomes more difficult. However, if this is not adequate, the brain continues to sense overheating and signals the sweat glands in the skin to shred large quantities of fluid in the form of perspiration.

iii. An employee's ability to perform is affected by working in hot environments, strength declines and the onset of fatigue comes sooner than it would otherwise. Employees who must perform delicate or detailed work may find their accuracy suffering and those who must absorb information may find their comprehension and retention lowered.

B. TYPES OF HEAT PROBLEMS

i. Heat Stroke

- Heat stroke is the most serious health problem caused by working in hot environments. It occurs when the human heat regulation system simply breaks down under the stress and sweating stops. There may be little warning to the victim that a crisis stage has been reached.

- A heat stroke victim's skin is hot, dry, and usually red or spotted. Body temperature is 105º F. or higher and rising. The victim is mentally confused, sometimes delirious, and may experience convulsions, or become unconscious. Unless the victim receives quick and adequate treatment, death can occur.

- An ambulance and medical assistance shall be summoned IMMEDIATELY. Remove the victim to a cool area, thoroughly soak clothes with water, and fan the body vigorously to increase cooling. Early recognition and treatment of heatstroke is the only means of preventing permanent brain damage or death.

ii. Heat Exhaustion

- Heat exhaustion includes several clinical disorders all of which have similar symptoms. The worker with heat exhaustion still sweats but experiences extreme weakness or fatigue, giddiness, nausea, or headache. In most serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, complexion is pale or flushed, body temperature is normal or slightly higher than normal.

- In most cases, treatment is simple. Have the victim rest in a cool place and give plenty of lightly salted liquids. Mild cases may result in spontaneous recovery with this treatment. Severe cases may require care for several days. There are no known permanent effects. CAUTION -- PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM DIET" -- CONSULT A PHYSICIAN ON TREATMENT UNDER THESE CONDITIONS.

iii. Heat Cramps

Heat cramps are painful spasms of working muscles. Loss of fluids and salts may produce these painful muscle cramps. The affected muscles could be part of the arm, leg, or abdomen; but tired muscles are usually the ones most susceptible to cramps. This condition can be prevented by adequate intake of fluids and salts in the diet. CAUTION -- PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM DIET" SHOULD CONSULT A PHYSICIAN ON WHAT TO DO UNDER THESE CONDITIONS.

iv. Heat Rash

Heat rash, also known as prickly heat, is likely to occur in hot and humid environments where sweat is not easily removed from the surface of the skin by evaporation. The sweat ducts become plugged, the sweat glands become inflamed and a rash appears. This condition can be prevented by occasionally resting in a cool place and by regular bathing.

C. PREPARING FOR THE HEAT

i. Generally, humans are capable of adjusting to the heat. This adjustment to heat under normal circumstances will take about a week. During this time, the body will undergo a series of changes that make further heat exposure more endurable.

ii. Gradual exposure gives the body time to adjust to higher environmental temperatures. On the first day of work in a hot environment, body temperature, pulse rate, and general discomfort will be higher. With each succeeding daily exposure, these will gradually decrease to normal levels.

iii. Employees shall take care and be aware of the causes, symptoms, and treatment for heat related disorders. The affects of heat exposure depend on how well the individual is conditioned for hot environments.

D. DRINKING WATER

i. In the course of a day's work in the heat, a worker may sweat away as much as three gallons of fluid. Because so many heat disorders are caused by dehydration, it is essential that water intake during the workday be about equal to the amount of sweat produced. Most workers drink less fluid than they should because thirst is an inadequate drive to stimulate the proper intake. Employees shall not depend on thirst to signal when and how much to drink, instead the employees shall drink fluids every 15 to 20 minutes (more often if necessary to satisfy thirst). There is no ideal temperature for drinking water, but most people tend not to drink warm fluids as readily as they will cool ones. Whatever the temperature of the water it must be palatable and convenient to the work area.

ii. All employees lose salt in their sweat. In extreme cases, loss of salt can cause additional health problems for employees exposed to hot environments for long periods of time. A number of measures can be taken to replace the salt content of the body. These include increasing salt intake with meals, and using a 0.1% salt solution as drinking water (a level tablespoon of table salt dissolved in 15 quarts of water will make such a solution). Employees using salt tablets and increasing the salt intake must also take an ample supply of water to prevent gastric irritation. CAUTION -- PERSONS WITH HEART PROBLEMS OR THOSE ON A "LOW SODIUM DIET" SHOULD CONSULT A PHYSICIAN ON WHAT TO DO UNDER THESE CONDITIONS.

E. AWARENESS AND SPECIAL CONSIDERATIONS DURING PROLONGED HEAT SPELLS

i. As with any safety or health hazard, the key to preventing excessive heat stress is the employer's and the employee's awareness that the hazard exists and that the implementation of proper safety measures can serve to prevent injuries and illnesses on the job. City departments shall give employees the opportunity to allow their bodies to adjust to the heat and to drink sufficient water to cope with the stress.

ii. The most stressful tasks shall be performed during the cooler parts of the day (early morning or at night). Rest periods shall be extended in accordance with the increase of heat.

SECTION 13 - WORK GLOVES

1. GENERAL

   A. This section covers the description and use of work gloves provided for protection of hands.

   B. Work gloves will be issued by supervision on an as needed basis.

2. DESCRIPTION

   A. Work gloves described in this section will have protective cuffs.

   B. These gloves will be constructed of canvas and leather, all leather or canvas and nitrille (nitrille buna rubber).

3. SAFETY PRECAUTIONS

   A. Work gloves shall be worn for all tasks requiring protection to hands, wrists, and lower forearms.

   B. Caution shall be exercised when wearing work gloves and working on near machines with moving parts.

   C. Work gloves will not be worn when working on or near electrically energized wires or equipment. (Insulating gloves with leather protectors shall be used in situations requiring such protection.)

   D. When working with corrosive materials, corrosive resistant gloves will be used.

SECTION 14 - EYE PROTECTION

1. GENERAL

   A. This section covers the description of nonprescription industrial eye protection used in the performance of any work operation involving hazards to the eyes.

   B. All eye protective devices must be certified as meeting requirements of the American National Standards Institute (ANSI) Z87.1-1968. INDUSTRIAL OR OCCUPATIONAL EYE PROTECTION MUST BE MADE RESISTANT FOR IMPACT UP TO 0.61 FOOT POUNDS.)

   C. Protective eyeglasses will be issued by supervision on an as needed basis.

   D. Each employee will be responsible for the care of the safety eye protection assigned to him. The glasses will be stored in a suitable container when not in use.

2. EYE PROTECTION - DEFINED

   A. "General" protection consists of frontal eye protection against flying or moving objects.

   B. "Special" protection consists of side as well as frontal eye protection against flying or moving objects. This classification does not include protection against irritating solutions.

   C. "Splashproof" protection consists of indirect ventilated goggles providing frontal and side protection against flying objects and irritating solutions.

3. TYPES OF EYE PROTECTION

   A. General eye protection consists of American Optical Series 9800 or 9900, Norton panel lenses 180 or Titmus Optical Series SP80 70F 70R or 10F, spectacle type eyeglasses with spatula type temples.

   B. Spectacle type eyeglasses are considered "special" protection when fitted with quick clip perforated plastic side shields or quick clip wire mesh side shields.

   C. Flexible goggles with perforated plastic frame provide maximum frontal and side protection from flying objects while providing direct ventilation. These can be worn over glasses.

   D. "Splashproof" protection provides frontal and side protection from splash or spray as well as flying objects. These goggles are indirectly vented and may be worn over glasses.

4. USE OF EYE PROTECTION

A. Eye protection must be worn by all personnel when they are performing, observing, or supervising a work operation, and there is any possibility of injury to the eyes that could be prevented by such protection.

B. Eye protection is required when performing or observing at close range the following work operations:

i. Drilling or chipping stone, brick, or masonry, breaking concrete or pavement, etc., by heavy hand tools (sledgehammer, etc.) or power tools such as pneumatic drills or hammers.

ii. Working on or around grinding wheels.

iii. Cutting or chipping ducts, tiles, or galvanized bolts.

iv. Working on or under motor vehicles.

v. Cleaning operations using compressed air, steam, or sandblast.

vi. Acetylene welding or similar operations where sparks are thrown off. (WELDERS MUST WEAR WELDER'S GOGGLES AND FACE SHIELD WHEN WELDING.)

vii. Using powder activated stud drivers.

viii. Any operation involving cutting wires, bolts, or other small metal objects.

ix. Tree pruning or cutting underbrush, including hauling and burning of tree limbs or brush.

x. Using circular saws, chain saws, lawnmowers, and weed eaters.

xi. Using glass crushers, balers, shredders, and tub grinders.

xii. Working among tree branches or underbrush.

xiii. When drilling in stone, brick, concrete, etc., with hand or power tools.

xiv. Working or observing near workmen who are driving nails, lags screws, or other hardware.

xv. Inspecting or repairing faulty electrical circuits.

xvi. Chipping metal with small tools.

xvii. Working on ceiling or overhead beams.

xviii. When observing or performing operations involving termination and/or handling wire.

xix. When splicing wire or observing splicing operations.

xx. Placing or removing wire or cable.

xxi. Using tools at or above eye level.

xxii. When handling scrap wire or materials.

xxiii. When performing any operation deemed to require eye protection by supervisor.

C. Splashproof eye protection is required when performing or observing the following work operations:

i. Handling batteries.

ii. Handling battery cell solutions and dry chemicals.

iii. Handling any caustic chemical.

5. CARE AND REPLACEMENT

A. Safety eye protection shall be stored in the appropriate casings.

B. Dirty lenses shall be cleaned by washing with soap and water.

C. Replacement glasses shall be obtained from supervisors.

SECTION 15 - EYEWASH FACILITIES AND EMERGENCY SHOWERS

1. GENERAL

   A. This section describes City policy for eye wash stations and emergency showers for use in areas where the eyes or body may be exposed to injurious materials.

   B. Placement of eye wash stations and emergency showers is critical. They must be easily accessible and near the area where exposure is likely

   C. Chemical burns to the eye must be treated promptly. Repeated flooding of the eye with water within seconds after contact with a chemical is the most effective way of preventing permanent damage. If the victim can reach an eye wash station within 10 to 15 seconds, chances of recovery with no permanent damage to the eyes are excellent.

   D. It is impossible to use too much water. Generally, the recommended MINIMUM irrigation time for the eyes is 15 to 30 minutes. If the presence of a chemical is uncertain, it is better to irrigate longer than might be necessary rather than irrigate inadequately and risk permanent damage.

   E. After the injured area has received adequate irrigation as outlined above, transport the injured employee to the nearest doctor or medical facility.

2. EYE WASH FOUNTAINS

   A. Eye wash fountains shall be installed and functional in all facilities where caustic materials are stored or used.

   B. Eye wash fountains shall:

      i. Have nozzles located 33 to 45 inches above the floor.

      ii. Have a manual "stay open" push bar or foot operated control.

      iii. Have an incoming water line that is at least 3/4 inch IPS and carry at least 30 psi but no more than 90 psi during operation.

      iv. Be connected to a drain by code approved method to facilitate easy testing.

      v. Be easily accessible from the potential hazard area.

      vi. Provide equivalent water pressure and water volume from each nozzle.

      vii. Be identified with a highly visible sign.

viii. Have a dust cover to protect the nozzles from contamination.

C. Eye wash fountains shall be inspected by a supervisor or designated representative monthly or at more frequent intervals when circumstances require to ensure that they are working properly and to detect any physical damage corrosion or other impairments. Check to see that:

i. There are no defective or leaking valves or clogged orifices or other defects.

ii. The flushing streams rise to approximately equal heights and that the water will wash the eyes and face at a velocity low enough not to be injurious to the user.

iii. Control valve shall easily open and remain open without requiring the operator to hold it open.

iv. The drain works properly.

D. Date and results of inspections shall be recorded.

3. EMERGENCY SHOWERS

A. Overhead deluge or multiple emergency showers may be installed in conjunction with permanent eye wash fountains.

B. The installation of emergency showers does not eliminate the need for eye wash fountains.

C. Emergency showers shall:

i. Have the highest head located 82 to 96 inches above the floor.

ii. Have a manual stay open valve with easily locatable pull rod triangular handle.

iii. Have incoming water line that is at least 1-1/4 inch IPS and carry at least 30 gallons per minute at 30 psi during operation.

iv. Be connected to a drain by code approved method.

v. Be easily accessible from the potential hazard area.

vi. Be identified with a highly visible sign.

D. Emergency showers shall be inspected by a supervisor or designated representative monthly, or at more frequent intervals when circumstances require to ensure they are working properly and to detect any obvious physical damage, corrosion or other impairment. Check to see that:

i. There are no defective or leaking valves or clogged orifices or other defects.

ii. The shower stream shall form a 20 inch diameter pattern 60 inches above the floor.

iii. The control valve shall easily open and remain open without requiring the operator to hold it open.

iv. The drain works properly.

E. Date and results of inspection shall be recorded.

4. EYE WASH BOTTLE

A. When a normal potable water source is not available, portable eye wash bottles containing one of the following agents may be used:

i. Sealed water rinse.

ii. Sealed neutralizing rinse.

iii. Distilled water.

B. Eye wash bottles shall be easily accessible from the potential hazard area.

C. Eye wash bottles shall be inspected by a supervisor or designated representative monthly, to ensure:

i. The bottle is full.

ii. The bottle and contents are free of defects.

iii. The bottle is not due for refill or replacement.

D. Unsealed eye wash bottles shall be emptied, cleaned, refilled, and inspected every six months or at more frequent intervals when circumstances require.

E. Sealed eye wash bottles shall be replaced in accordance with manufacturer's recommendations.

5. PORTABLE EYE WASH FOUNTAINS

A. Portable eye wash fountains are approved only for use in facilities that do not have normal potable water sources.

B. The approved portable eye wash fountain is a 16 gallon polyethylene gravity fed type.

C. Portable eye wash fountains shall:

i. Have nozzles located 33 to 45 inches above the floor.

ii. Be connected to a drain by code approved method or connected to a noncorrosive container having a capacity of at least 16 gallons.

iii. Be easily accessible from the potential hazard area.

iv. Provide equivalent water pressure and water volume from each nozzle.

v. Be identified by a highly visible sign.

vi. Have a dust cover to protect the nozzle heads from contamination.

vii. Shall be filled with water mixed with nontoxic methylparabin additive to prevent the formation of bacteria in the water.

D. Portable eye wash fountains shall be emptied, cleaned, and refilled, annually, or at more frequent intervals when circumstances require to ensure that they are working properly and to detect any obvious physical damage, corrosion or other impairments.

E. Portable eye wash fountains shall be inspected by a supervisor or designated representative monthly for obvious defects or damage and to ensure the unit is full. Check to see that:

i. There are no defective or leaking valves or clogged orifices or other defects.

ii. The flushing streams rise to approximately equal heights and that the water will wash the eyes and face at a velocity low enough not be to be injurious to the user.

iii. The retainer strap easily removes to activate the unit.

iv. The drain works properly.

F. Date and results of inspection shall be recorded.

SECTION 16 - SAFETY BELTS AND STRAPS

1. GENERAL

   A. This section describes standard safety straps and covers inspections and precautions pertaining to their use and care.

2. DESCRIPTION - SAFETY STRAP

   A. The safety strap is 1-3/4 inch wide, 6-ply neoprene impregnated nylon fabric. The center plies are of a contrasting color (red) from that of the outer plies.

   B. Exposure of the center plies by wear indicates that the strap must be removed from service and destroyed.

3. PRECAUTIONS

   A. When in use, the safety strap shall be as short as practical to minimize the potential falling distance.

   B. Before climbing to an unprotected area, check that the tongue of the buckle is properly seated in the desired hole of the safety strap.

   C. Never attach two or more safety straps together for additional length. If one safety strap cannot be lengthened sufficiently, the method of doing the work shall be changed. If tree pruning operations are involved, only a rope sling shall be used.

   D. Never use any electric appliance or energized circuit attachment as supports for the safety strap.

   E. Visually inspect to see that the snap hook and the "D" ring are properly engaged. Do not rely on feel or the click of the keeper as an indication that the fastening is secure. The employee must look and know that the snap hook is properly engaged before placing weight on the strap. Always have keeper of the snap hook on the safety strap facing away from the body when engaged in the "D" ring.

   F. Never place or carry tools or materials in the "D" rings of the safety strap. These items shall be carried in holsters or other approved carriers.

4. INSPECTION AND MAINTENANCE

   A. Upon receiving a safety strap and before each use thereafter, each employee shall inspect the strap so that any fault that may have developed is detected.

   B. Each employee shall at all times assume the responsibility for determining that the safety strap is in good condition.

C. The strap shall be examined visually to determine its condition. If a condition exists that raises any doubt as to its safety, it shall be exchanged for one in good condition. A safety strap shall not be subjected to "proof load" tests.

D. Visual inspection of safety strap - The important conditions to look for are:

i. Worn fabric as indicated by the colored ply. When two outer layers of fabric are worn through the red ply can be seen. The strap shall be removed from service as soon as a red ply becomes visible.

ii. Broken, cut, or torn outer fibers or nicks, punctures, etc., that will affect the strength of the strap. The edges of the strap shall be inspected carefully.

iii. Rivets missing, loose, broken, or excessive wear.

iv. Broken or badly worn steel guards on ends of the safety strap.

v. Defective buckle or snap hook or poor action of the keeper on the snap hook. The keeper shall work freely without excessive side play and shall close securely under the spring tension.

vi. Charred spots in the surface of the fabric caused by flames, contact with hot objects or any source of heat or flame. If burns are on the flat surface, remove strap from service. If the outer layers are burned through or if the colored ply is visible, remove strap from service. If these burns are on the edges of the strap and are more than 1/8 inch deep, remove the strap from service.

vii. Excessive enlarged holes in the tongue of the buckle.

viii. Inner fibers broken. Breakage of inner fibers is indicated by limpness and flexibility of the strap. The strap shall be examined in short sections, and if a short flexible section is found the strap shall be removed from service.

SECTION 17 - SAFETY HEADGEAR

1. GENERAL

   A. This section covers the description, use, and care of safety headgear.

   B. Headgear will be issued by supervision on an as needed basis.

   C. Safety headgear is designed to act as both a shield and a shock absorber to protect against head injuries. Headgear is also designed to provide protection against electrically energized objects.

   D. The use of safety headgear in no way reduces the need for good job planning or the requirements for observing the precautions outlined in other sections of this safety manual.

   E. Never alter or modify the shell or suspension of safety headgear.

   F. Safety headgear is designed to give dependable service provided it is properly cared for. Regardless of how often the hat is used, the employee shall check for cuts, cracks, frayed straps, and other signs of deterioration. If wear is detected, it shall be reported to supervisor. The suspension or shell shall be replaced immediately and the defective part removed from service.

2. DESCRIPTION

   A. Head protection must be certified as meeting the requirements of ANSI Z89.2-1971 Safety Requirements for Industrial Protective Helmets for Electrical Workers Class B. This headgear consists of a molded high impact plastic shell equipped with detachable suspensions which are adjustable to different head sizes.

   B. The following decals are authorized for use on safety headgear:

      i. City of Little Rock logo centered on the front of the cap.

      ii. Name tag, employee name may be placed below the City logo.

      iii. Special purpose decals approved by the City for special recognition or identification purposes.

   C. The suspension for the safety hat consists of a detachable sweat band and strap cradle assembly. The strap cradle assembly is a double strap arrangement that allows adjustment and ensures proper clearance between the top of the head and the inside of the cap crown.

   D. Winter liners for the safety headgear are available as an accessory item. The winter liner shall be worn only with the suspension over or above the liner.

3. USE

A. Safety headgear shall be worn by all personnel engaged or observing construction, outside maintenance, or repair work where head injuries could result.

B. The following are common work operations and conditions under which safety headgear shall be worn:

i. Performing installation or repair work from aerial lifts or truck mounted ladders.

ii. Working in the vicinity of construction apparatus and equipment such as derricks, booms, earth boring machines, tractors, and trenchers.

iii. When working in any area or enclosure where head room is insufficient such as crawl space, cellars, and excavations.

iv. When standing below work that is being done aloft or when performing overhead work from the ground such as pruning trees.

v. Entering, leaving, and working in manholes or catch basins.

vi. Working in trenches, pits, or other excavations of three foot or more in depth.

vii. When in or near buildings under construction or demolition.

viii. When on any premises where the wearing of head protection is mandatory.

ix. Working on glass crushing, balers, shredders, and tub grinders.

x. Any other work situation deemed suitable by the supervisor.

4. CARE

A. Safety headgear shall be stored where it will not be damaged by other tools.

CAUTION: DO NOT STORE HEADGEAR OR ANYTHING ELSE ON THE REAR SHELF OF A VEHICLE IN CASE OF A COLLISION OR A SUDDEN STOP.

B. Safety headgear shall be cleaned by washing with soap or mild detergent and water. To clean, remove the suspension and dip the crown in clear warm water and wipe dry. The suspension shall be washed with regular soap and water.

C. Safety headgear shall be replaced when:

i. Cap receives a severe blow.

ii. Becomes cracked, punctured, or otherwise damaged.

iii. When deemed unsuitable to use by the supervisor.

D. Do not use paints, solvents, chemicals, adhesives, gasoline, or similar substances on safety headgear. If such substances are applied or come in contact with the helmet, the impact resistance and other safety properties of the helmet may be destroyed. Report any such use to the supervisor.

E. No holes or accessories shall be added to the headgear.

F. When chin straps or liners are used, the straps shall not be drawn over the brim or peaks as this will reduce the electrical protection provided by the headgear.

SECTION 18 - HAZARDOUS CHEMICALS

1. POLICY STATEMENT

The City adheres to a policy of providing a safe environment for all employees. This includes providing appropriate training in proper maintenance and operation of equipment; providing accurate information to enable employees to avoid potential health and safety hazards; and maintaining up-to-date lists and information regarding hazardous chemicals to which employees may be exposed.

The General Assembly of the State of Arkansas, by Act 1172 of 1991, established the public employees "right to know" regarding hazardous chemicals in the workplace.

This Hazard Communication Program, "Public Employees Chemical Right to Know Act," does not change existing policy and all current safety procedures remain in effect. However, this program will increase awareness of the potential health and safety risks associated with certain chemicals.

The Loss Prevention/Safety Specialist, under the guidance of the Personnel Director, has been charged with the responsibility and authority to carry out this program. Managers and supervisors are responsible for ensuring that their work areas and the employees under their direction are in compliance with the program.

It is the responsibility of all employees to follow safe work practices and procedures and to use personal protective equipment provided.

This policy applies to all departments and separate agencies of the City.

Copies of the written Hazard Communication Standard's Program will be kept in the Personnel Department and at accessible locations in each City department and agency.

2. HAZARD COMMUNICATION PROGRAM

A. A full copy of the City of Little Rock Hazardous Communication Program is attached as Appendix II to this manual.

3. RESPONSIBILITIES

A. PERSONNEL DEPARTMENT

The Personnel Department is responsible for:

i. developing and implementing the overall safety and hazard communication programs;

ii. providing technical assistance to department and agency directors, as needed;

iii. providing training to all employees who may come in contact with hazardous chemicals during normal operations or in foreseeable emergencies. This training shall be provided:

At the time of initial employment
Annually thereafter

iv. maintaining an up-to-date consolidated list of all hazardous substances used by City employees;

v. obtaining or preparing and maintaining an up-to-date master Material Safety Data Sheet (MSDS) file. The file will contain an MSDS for every hazardous substance used or stored by City employees in any one location in excess of 55 gallons or 500 pounds; and

vi. periodically and on request conducting safety audits to ensure compliance with the provisions of the program.

B. MANAGEMENT AND SUPERVISORS

Department and Agency Directors, managers, and supervisors are responsible for developing and implementing site specific Hazard Communication Programs. These activities shall include the following:

i. consulting with the City's Loss Prevention/Safety Specialist, and current MSDS's to ascertain the specific nature and extent of the risks involved in exposure to each hazardous substance;

ii. determining the proper safety precautions to be used in each case;

iii. reviewing and updating all operating procedures to ensure they reflect safe practices;

iv. ensuring all safety equipment is in place, and all incoming and outgoing hazardous substances are properly labeled;

v. compiling, maintaining, and making available an up-to-date list of all hazardous substances in the workplace;

vi. obtaining or preparing and maintaining an up-to-date Material Safety Data Sheet (MSDS) for every hazardous substance used by employees or stored in each separate geographic work area in excess of 55 gallons or 500 pounds. A copy will be kept in a location accessible to employees and available for employees to utilize. Duplicate copies will be forwarded to the Loss Prevention/Safety Specialist, Department of Personnel;

vii. informing outside contractors of the hazards to which their employees may be exposed while working at a City owned or operated facility;

viii. providing specific training to employees who will come in contact with known hazardous chemicals during normal operations or in any foreseeable emergency. This training will be provided at the time of initial assignment or employment and when the employee may be exposed to a different hazardous substance or when a new hazard is introduced in the work area. Duplicate copies of training lists will be forwarded to the Loss Prevention/Safety Specialist, Department of Personnel;

ix. ensuring that all employees are following proper operating procedures and taking appropriate safety precautions;

x. ensuring that all containers of hazardous substances and any hazard areas are properly labeled and marked;

xi. ensuring that appropriate safety equipment is available and that personal protective equipment is worn in accordance with established policy and approved safety procedures;

xii. ensuring that appropriate monitoring and emergency equipment is in place and functioning properly;

xiii. ensuring that hazardous materials are properly labeled and stored; and

xiv. ensuring that all passageways, doors, and emergency exits are clear and free of trash and debris.

C. EMPLOYEE

All employees are responsible for workplace safety. Requirements for job safety when hazardous materials are used include:

i. following all established work practices and operating procedures for handling and storage of hazardous materials;

ii. using personal protective equipment as required by City safety procedures;

iii. using approved labels - LABELS SHALL NOT BE REMOVED FROM CONTAINERS;

iv. using approved containers for hazardous materials;

v. knowing the location and proper utilization of MSDS's and of emergency equipment, including first aid supplies, emergency eye wash and shower equipment, and:

vi. informing supervisors of:

- any accident,
- any symptoms that may be related to exposure to hazardous substances,
- missing or illegible labels on containers of suspected hazardous substances,
- malfunctioning safety equipment,
- improperly stored containers,
- unsafe work conditions or practices and
- damaged or broken personal protective equipment.

4. TRAINING

Employee training is a vital part of the Hazard Communication Program, and is detailed in Appendix II-3 of this manual.

The objectives of the training program are to provide City employees with practical, understandable information about hazardous chemicals in the workplace and procedures to protect themselves from exposure to those hazardous chemicals.

Annual training shall consist of:

- Review of Hazard Plan
- Material Safety Data Sheets (MSDS)
- Correct Labeling Procedure

SECTION 19 - ADHESIVES, SOLVENTS, PESTICIDES, AND OTHER CHEMICALS

1. OVERVIEW

   A. This section outlines procedures to follow when purchasing and using adhesives, solvents, degreasers, herbicides, pesticides, and other chemicals. All of these materials shall be treated as hazardous materials.

2. GENERAL

   A. Product containers for adhesives, solvents, degreasers, herbicides, pesticides, and other chemicals, do not always provide adequate warning labels. These materials shall not be used without referring to the Material Safety Data Sheet. Always read manufacturers product label fully. If it appears incomplete, contact a supervisor and request a Material Safety Data Sheet (MSDS).

   B. Prior to purchasing or using any product which is described in Paragraph 1.A, the foreman, supervisor, or manager shall take the following precautions:

      i. Request from the distributor or manufacturer two copies of the Material Safety Data Sheet. Keep one copy for the department MSDS file and forward one copy to the Safety/Loss Control Specialist.

      ii. Carefully review all sections of the MSDS Form.

      iii. Brief employees on hazards and ensure all required protective equipment is available and used.

   C. All tanks and sprayers must be marked with product name and warning statements.

   D. For assistance in interpreting the Material Safety Data Sheet, contact a supervisor.

3. USE OF PESTICIDES

   A. Employees applying pesticides for the control of tree, turf, structural pests, and weeds shall be under the direct supervision of a supervisor and be restricted to applying pesticides only on property owned, or under the control of the City. The supervisor shall be in possession of a non-commercial applicator certificate.

   B. Manufacturers' instructions for the use and control of pesticides must be followed in ALL applications.

SECTION 20 - FLAMMABLE AND COMBUSTIBLE LIQUIDS

1. GENERAL

   A. This section covers the storage and transportation of flammable and combustible liquids.

   B. Flammable and combustible liquids shall not be stored in:

      i. Office areas

      ii. Utility rooms

      iii. Hallways

      iv. Rest rooms

      v. Near heat sources

      vi. In rooms with open flames

   C. Flammable and combustible liquids shall not be dispensed in portable containers unless the container has Factory Mutual or U.L. approval.

   D. Flammable liquids shall never be dispensed into open containers.

   E. Fire extinguishers shall be readily available during all fuel dispensing operations.

2. FUEL STORAGE TANKS (FIXED)

   A. All permanent Class I, II, and III (gasoline/diesel or alternative fuels) storage tanks shall be installed as follows:

      i. Any part of the tank shall be a minimum of one foot from the nearest basement wall or foundation and three feet away from any property line.

      ii. Steel or nonmetallic tanks shall be buried in accordance with manufacturer's instruction and must comply with all NFPA regulations. If traffic will not drive over the tank, it shall be covered with at least one inch of earth and four inches of reinforced concrete. If traffic will drive over the tank, it shall be covered with three feet of earth or 18 inches of well tamped earth plus six-inch reinforced concrete or eight inches of asphaltic concrete.

      iii. Vent pipes shall not be less than 1-1/4 inches inside diameter.

iv. Vent pipes from Class I storage tanks shall be located so that the discharge point is outside of buildings and not less than 12 feet above the adjacent ground level. Class II diesel tank vents shall extend higher than the fill pipe opening.

v. Vent outlets shall be equipped with a device to minimize the possibility of blockage from weather, dirt, insect nests, etc.

vi. Piping valves and fittings shall be installed as directed by American National Standard Series B31 "American National Standard Code for Pressure Piping" and National Fire Protection Association Code 30 "Flammable and Combustible Liquids."

vii. Electrical equipment shall meet all quality and installation standards set forth in the National Fire Protection Code 30 "Flammable and Combustible Liquids" and Code 70 "National Electric Code."

viii. A clearly marked emergency shutoff shall be easily accessible and at least 20 feet but not more than 100 feet from the dispenser.

ix. A fire extinguisher shall be mounted within 30 feet of the dispenser.

x. The dispensing unit shall be mounted on a concrete island or protected against collision damage by suitable means.

xi. An NFPA listed automatic closing type hose nozzle valve with latch open device shall be used if the design of the system is such that the hose nozzle valve will close automatically in the event the valve is released from a fill opening or upon impact with a driveway.

xii. All fuel product signs shall be color coded.

B. The following information shall be posted on or near the dispenser:

i. Dispenser operating instructions

ii. Sign - "Shut Off Engine Before Fueling"

iii. Sign - "No Smoking within 50 Feet"

iv. Product label with correct material safety information.

3. PORTABLE FUEL TANKS

A. A portable fuel tank is a tank with a fuel capacity of not less than 60 U.S. gallons and not more than 66 U.S. gallons. Portable tanks are designed to move from job site to job site.

B. Portable tanks shall meet all specifications outlined in National Fire Protection Association Code 30 "Flammable and Combustible Liquids Code."

C. The following information shall be posted on portable tanks:

i. Dispenser operation instructions

ii. Sign - "Shut Off Engine Before Fueling"

iii. Sign - "No Smoking within 50 Feet"

iv. Product label with correct material safety information

D. Overhead portable tanks shall have a dispensing hose nozzle that is of the automatic closing type without a latch open device.

E. A fire extinguisher shall be located within 30 feet of the portable tank.

4. CONTAINERS

A. Containers, drums, or safety cans shall be used to transport or store quantities of less than 60 gallons of flammable or combustible liquid.

B. Containers shall meet the following requirements:

i. Constructed of steel or other materials as outlined in the National Fire Protection Code 30 "Flammable and Combustible Liquids."

ii. Have a maximum capacity of 60 gallons.

iii. One or more venting devices to limit internal pressure under fire exposure conditions to 10 psi or 30% of the bursting pressure of the tank whichever is the lesser.

iv. Equipped with transfer pump approved by Factory Mutual or U.L.

v. The tank shall have the following signs on all four sides: "NO SMOKING WITHIN 50 FEET," "SHUT OFF ENGINE BEFORE FUELING," TYPE FUEL ("GASOLINE" OR "DIESEL.")

vi. Product label with correct material safety information.

C. All containers shall be secured to the vehicle during transportation.

D. Drums containing flammable or combustible liquids may be used in a vertical or horizontal position. The following precautions shall be taken:

i. Drums used in the horizontal position shall be placed on a drum cradle. The drum shall be equipped with a Factory Mutual or U.L. approved self-closing faucet, drum vent, and antistatic (bonding) wire. A safety drip can shall be placed on the floor under the faucet.

ii. Drums used in the vertical position shall have Factory Mutual or U.L. approved transfer pump, drum vent, and antistatic (bonding) wire.

iii. The contents of the drum shall be clearly marked in a visible location on the drum, and contain all hazardous warning statements.

E. A safety can shall be used to store and transport small quantities of flammable or combustible liquids. A safety can shall:

i. Not exceed five gallon capacity.

ii. Have a spring closing lid and spout cover that acts as a safety relief vent.

iii. Have product label with correct material safety information.

F. Only Type I and II safety cans are approved for use by the City.

SECTION 21 - SAFEGUARDS FOR DRIVING MOTOR VEHICLES

1. GENERAL

A. This section outlines safeguards for driving motor vehicles.

B. Defensive driving. Defensive driving practices are those that are legally correct and consistent with fairness, courtesy, and safety to all users of the streets and highway.

C. Employees shall not permit unauthorized persons to drive, operate, or ride in or on City vehicles.

D. Employees are NOT permitted to:

i. Dismount or mount a moving vehicle.

ii. Ride with arms or legs outside any vehicle note exceptions in v. below.

iii. Ride in a trailer or in the bed of pickup trucks.

iv. Ride in any manner other than seated in the vehicle's seat with the exception of firefighters and refuse collectors.

v. Firefighters and refuse collectors ride only in areas specifically designed for that use. These employees shall also use provided handrails and other safety equipment.

E. Do not overload vehicles with passengers or cargo. Under no circumstances shall more than three persons be carried in the front seat of any vehicle.

F. Warning flashers, strobe lights, safety cones, warning signs, etc., shall be used as necessary when stopped along roadways.

G. Loads that project 4 feet over the vehicle's body shall be equipped with a red flag by day and a red light by night.

H. All trailers shall be coupled with safety chains.

I. When backing or turning a vehicle where the view is obstructed, a flag person or spotter shall assist the driver. Drivers must rely on their spotter, defensive driving shall remain the responsibility of the driver.

J. All employees operating City vehicles must be properly licensed.

K. All employees shall wear seat belts when driving or riding in any City owned vehicle if equipped with such.

2. OVERTAKING AND PASSING

A. Before overtaking check:

i. Is the car ahead slowing down or speeding up.

ii. Is the vehicle ahead about to overtake.

iii. Never pass a vehicle that has turn indicators flashing.

3. OPEN SPACE AHEAD

A. This open space is an invitation to conflicts from both sides. Watch parked cars for drivers at the wheel who may open a car door.

B. Watch for pedestrians "hidden" by parked cars. Watch ahead for pedestrians.

C. With open space ahead, pay particular attention when approaching driveways and intersections. If the vehicle on the side street or in the driveway is halted, be ready to apply the brakes and sound the horn if the driver fails to yield.

D. Pay attention to oncoming vehicles that are hidden behind other oncoming vehicles. Many drivers have the dangerous habit of riding close behind large vehicles ahead of them and "popping out" for a glance ahead to see if it is safe to pass.

E. Minimize driving alongside and slightly back of other vehicles. This area is difficult for the other driver to see in the driving mirrors.

4. FOLLOWING VEHICLE AHEAD

A. Always remain a safe distance behind the vehicle in front.

B. The most common answer to the question, "what's the safe following distance?" is at least one car length for every 10 miles an hour, or at least a two second interval. To use it, simply select an object along the roadside ahead. When the rear bumper of the vehicle in front passes that object start counting "1001, 1002..." Reaching the object before finishing "1002," indicates not enough space is being allowed.

5. SIGNALING

A. The proper turn signal shall be given in accordance with state law. However, a good rule of thumb is to give the proper signal continuously for at least 150 feet in advance of the turn. If hand signals are used, discontinue the signal before turning and return both hands to the steering wheel.

6. PEDESTRIANS, BICYCLES AND ANIMALS

A. Pay particular attention when approaching pedestrians, small children, people stranded in the middle roadway, people riding bicycles, or animals in or near the road. In this situation, adjust speed, steer as far away from them as possible and be ready to come to a stop if necessary.

7. APPROACHING TRAFFIC LIGHTS

A. Be prepared for a sudden stop by a driver ahead approaching a green light. Many drivers jam on the brakes if the amber light flashes just as they reach the signal. Also, many drivers brake on the green light because of a last minute decision to turn at the corner.

B. The amber light indicates the intersection shall be cleared of traffic. It does not mean hurry through and beat the red.

8. SIDE STREETS

A. Be aware of "unmarked" or "uncontrolled" intersections, the street corner that has no traffic control signals on either roadway. This is the most deadly of all intersections in terms of accidents in relation to traffic volume. Many drivers never slow down unless they see a stop sign or a red traffic light. One-third of all accidents happen at intersections.

9. BACKING ACCIDENTS

A. Avoid backing whenever possible. If backing cannot be avoided, back before parking not after.

B. Remember the following backing tips:

i. Use a spotter.

ii. If no spotter is available, get out and size up the situation prior to backing.

iii. Back slowly.

iv. On equipment fitted with visual and audible backing signals, be sure they are both working.

10. SAFEGUARDS FOR PARKING

A. Whenever possible, park in a manner that will eliminate having to back.

B. Street Parking - When a service vehicle has been parked, two safety cones shall be placed around the vehicle, one placed near the left front bumper, the other near the left rear bumper.

C. Parking on Premises Away from City Hall - Due to the dangers involved in backing, every effort is to be made to avoid parking in a driveway. If parking in a

driveway cannot be avoided, two safety cones shall be used. One shall be placed near the center of the front bumper, the other near the center of the rear bumper.

D. Before a City vehicle is moved from any location the "circle of safety" shall be made beginning at the driver's door and proceeding all the way around the vehicle. Check for any obvious safety hazards.

E. When the "circle of safety" is completed, the safety cones shall be removed and placed in the vehicle and the operator shall look all around the vehicle for any other obstacles which may have presented themselves.

11. TRAFFIC REGULATIONS

All persons operating any City vehicle shall obey all federal, state, and local traffic control laws, regulations and ordinances. Any failure to obey these regulations shall be subject to disciplinary action.

12. SAFETY BELTS

All persons operating or riding in any City vehicle shall use seat belts. No vehicle shall be operated until all occupants have secured their seat belts. Any person operating or riding in any City vehicle who fails to use seat belts shall be subject to disciplinary action.

SECTION 22 - TRAFFIC SAFETY CONES

1. GENERAL

   A. This section describes traffic safety used to guide vehicular and pedestrian traffic around work areas and to establish a "circle of safety" around parked vehicles.

2. USE

   A. Placement of safety cones is described in Section 23. (Guarding Work Areas, 23 - Safeguards for Driving Motor Vehicles).

3. APPROVED SAFETY CONES

   A. The following types of safety cones are approved for use by City employees:

      i. 12-inch fluorescent cone (for passenger cars and station wagons only)

      ii. 18-inch fluorescent cone

      iii. 28-inch fluorescent cone

SECTION 23 - GUARDING WORK AREAS

1. GENERAL

   A. This practice covers the use of warning devices for guarding work areas. Warning devices shall be used for the purpose of providing maximum protection for employees, equipment, and the public, as well as providing the minimum interference with vehicular and pedestrian traffic.

   B. All warning devices shall be placed at the beginning of a construction or maintenance operation and shall remain in place until the work operation has been completed.

   C. State and local laws and ordinances pertaining to traffic control shall be complied with. For work involving minor traffic dislocation, the Office of Emergency Services shall be notified. In addition, when major traffic dislocation such as blocking a traffic lane or highway or a main traffic artery occurs, the Police Department shall also be specifically notified before the work is begun.

   D. It will be impossible to include a group of illustrations to cover every situation which will require work area protection. It is emphasized that there are minimum desirable standards for normal situations, and the additional protection shall be provided when special hazards exist.

   E. Protection described for each situation is based on the speed and volume of traffic and duration of the operation and exposure to hazards.

   F. Weeds, shrubbery, construction materials or equipment, etc., shall not be allowed to obscure any traffic control device.

   G. Signs shall be placed in positions where they shall convey their messages most effectively, and placement shall, therefore, be according to highway design and alignment. Signs shall be placed so that drivers have adequate time for response.

2. LOCATION OF MOTOR VEHICLES TO GUARD WORK AREAS

   A. A motor vehicle equipped with a strobe light and flashers is an effective barrier for vehicular traffic. These lights shall be used day and night while the vehicle is used as a barrier.

      The vehicle shall be placed between the work area and the oncoming traffic and shall have the park brake set and the transmission engaged in gear on manual transmissions and in park on automatic transmissions.

   B. When using a motor vehicle to guard a work area, it shall be considered supplemental to all other warning devices.

C. The following factors shall be considered in determining which direction the vehicle shall face:

i. Requirements of local laws and regulations.

ii. Location of the work area to be protected with respect to traffic flow.

iii. When the work requires materials which must be unloaded from the bed and side boxes of the truck.

iv. Safety considerations and difficulty in turning the truck around to face oncoming traffic.

v. Trailers shall be placed where they will not interfere with traffic and shall provide a safe place to work.

D. Be alert to changing traffic flow.

i. Inbound traffic during morning hours.

ii. Outbound traffic during evening hours.

3. LOCATION OF SIGNS, CONES, AND BARRICADES

A. The following table gives recommended distances for placing initial warning signs ahead of work operations for various speed limits (Size and color of cones are specified in Section 13 of this manual.)

Normal Traffic Speed (Mph)	**Initial Sign Distance (Feet)**	**Cone Spacing (Feet)**
15 or below	50 - 90	10
25	90 - 150	20 - 25
35	150 - 240	30 - 40
45	240 - 360	40 - 50
55	360 - 550	50 - 60

4. SIGNS AND SIGNALS

A. The shape, size, and coloring of signs shall conform to the specifications set forth in the American National Standards Institute D6.1-1978 Manual on Uniform Traffic Control Devices.

B. Signs and painted displays intended for night use shall be of the reflecting type and be illuminated.

C. Signs shall be removed or covered during lunch periods and at the end of the work day only if the work site is free from hazards at that time. All signs shall be removed as soon as the work is finished and no hazards remain.

D. On extended one-way traffic blocks, there shall be one employee with a sign paddle in front of the work area. On extended two-way traffic blocks, there shall be one employee with a sign paddle at each end of the working area.

E. Employees using sign paddles shall be trained in the proper method of giving nonconflicting signals.

F. All employees used to direct traffic flow shall be equipped with a fluorescent vest, white hard hat, and sign paddle.

G. Sign paddles shall have a minimum width of 24 inches and be mounted on a rigid handle. On one side the word STOP shall be painted in white letters on a red background with a white border. The reverse side shall have the word SLOW painted in black on a yellow background with a black border. Letters shall be Series C, (six inch).

H. Employees directing traffic flow are responsible for human safety. They also make a great number of public contacts. It is important that only conscientious qualified personnel be selected for this task.

I. Traffic control employees are provided at work sites to protect both work crew members and the public. To perform these functions, they must be visible to approaching traffic sufficiently in advance of the work site to permit the proper response to be made. In positioning such employees, consideration shall be given to maintaining color contrasts between the protective garments and the background of the worker. The correct position to be taken is on the shoulder or in the barricaded lanes adjacent to the lane being controlled and facing the traffic. The employees shall <u>never</u> stand in the traffic lane.

J. During night operations, employees controlling traffic shall be equipped with red lanterns or flashlights, they shall wear orange, yellow, or light colored clothing with reflectorized surfaces and white or orange Sam Brown type belts with red reflector buttons.

K. With a lantern or flashlight, only one signal is used and that may mean either stop or slow. It is given by waving the red lantern or flashlight across the lane of traffic. "Proceed" signals are to be given only by hand, never with the lantern or flashlight.

L. Traffic control workers and operators of construction machinery shall understand that every reasonable effort shall be made to allow the driving public the right-of-way and prevent excessive delays.

5. PRECAUTIONS

A. To ensure maximum safety, continued alertness is required.

B. Carefully observe all moving traffic and exercise extreme caution when placing warning devices.

C. Place warning devices <u>before</u> positioning the work vehicle or starting work. Warning devices are employed to direct the motorist around the work area.

D. Make every effort to minimize the exposure time of the employees to traffic hazards and other possible danger. All discussions and planning shall take place off the street or highway not in traffic lanes.

E. Inspect all displayed warning devices at frequent intervals to be sure they remain clearly visible.

6. JOB PRE-SURVEY

A. A suitable plan for guarding the work area shall be developed before work in the area is begun. The supervisor shall pre-survey the work location and then discuss the protection plan with the employees before the work is begun.

B. After planning for the setup of warning devices for a particular location, analyze the plan from the point of view of the motorist.

C. The following checklist shall be used for guarding work areas before starting work:

i. Speed of traffic.

ii. Width of lane.

iii. Light or heavy traffic.

iv. Nature of the traffic change while work is being done.

v. Are barricades required?

vi. Will a traffic control employee be required when setting up and removing warning devices? During the work operation?

vii. Will the established plan comply with state and local laws or regulations?

viii. Is a permit required?

ix. Have the police or Office of Emergency Services been contacted?

x. On routes to or near special events such as ball games, etc., can the job be scheduled on days or hours with the least traffic?

xi. Where will required tools, materials, and equipment be kept during work operations? After working hours?

7. LOCAL ROAD OR STREET PLANS

A. On a two lane road or street where the work is located near the edge of the pavement, the following items shall be considered:

i. Speed

Check Section 23 3. A. for sign and cone spacing.

ii. Do not park equipment in the way of signs and cones where it may obstruct vision.

iii. Does the sign terminology agree with the work being performed. For example: "FLAGMAN AHEAD" when one is used or "UTILITY WORK 2000 FEET."

iv. Does flashing strobe on truck used as part of the protection work properly?

v. If several vehicles are involved and some are not currently being used, are they parked away from the work area?

vi. If a lane is partially or completely blocked, is traffic control provided? If so, is the proper protective gear and sign(s) used?

vii. Are signs mounted in such a manner to prevent being blown over.

8. SIGN TERMINOLOGY

A. Sign or barricade terminology shall comply with state or local regulations.

B. All signs shall conform to the standards established by the "MANUAL ON TRAFFIC CONTROL DEVICES" as published by the Department of Transportation.

SECTION 24 - ELECTRICAL HAZARDS

1. GENERAL

   A. This practice covers the hazards of electrical shock.

   B. Before performing maintenance or repairs on circuits carrying 50 volts or greater, de-energize and lock out the circuit.

   C, High on the list of shock fatality causes are: digging into buried cable, using portable electric tools and extension cords.

   D. The victim of electrical shock shall be given first aid as soon as possible.

   E. Resistance may be increased by materials such as rubber gloves, rubber or leather shoe soles, or standing on dry concrete.

2. POWER CLEARANCE

   A. This section covers clearances to be maintained between communication or traffic control circuits and electrical power circuits with associated line conductors.

   B. Clearances prescribed by the National Electric Code (NEC) shall be maintained between communications/traffic control circuits and electrical circuits.

   C. Construction standards for installation of City equipment are to be equal or greater than the National Electric Code.

   D. Although sufficient clearance may exist, the worker shall determine through inspection if any conditions pose a hazard.

   E. When insufficient clearances exist, the worker shall inform the supervisor so that arrangements may be made with the electric company to either rearrange the power circuits or to de-energize the circuit before work begins.

   F. Energized power circuits are <u>not to be handled</u> by employees even though sufficient clearances exist.

3. TREE TRIMMING - ELECTRICAL HAZARDS

   A. This section covers tree trimming in close proximity to electric power conductors.

   B. Employees engaged in pruning, trimming, removing, or clearing trees from large areas involving overhead power lines shall be required to consider all power conductors (overhead and underground) to be energized with potentially fatal voltage never to be touched either directly or indirectly. Before any work is performed in proximity to energized conductors, the power company shall be contacted.

C. No City employee or contractor involved with line clearance shall be permitted to perform the work if it is found that an electrical hazard exists. Branches contacting an energized conductor shall only be removed by Power Company employees. Ladders, platforms, and aerial devices including insulated aerial devices shall not be brought in contact with an electrical conductor.

SECTION 25 - HAND TOOLS - PORTABLE

1. OVERVIEW

   A. This section covers portable hand tools and their use.

   B. Hand tools shall be inspected before use.

   C. Incorrectly used, hand tools can do serious damage.

2. GENERAL

   A. Some general guidelines for avoiding injury while using hand tools (manual or power driven) are:

      i. Use the right tool for the job.

      ii. Only use tools in good condition - worn, dirty, or broken tools shall be repaired, cleaned, or discarded.

      iii. Use tools properly -- cut away from the body when using knives or other sharp cutting instruments.

      iv. Wear the proper personal protective equipment.

      v. Store and carry tools safely - falling tools or tools carried in pockets or tool boxes with sharp edges exposed, cause serious injury.

   B. Unsafe use of manual hand tools, includes using tools that are worn or broken.

      i. Supervisors shall not issue or permit the use of unsafe hand tools.

      ii. Wrenches including adjustable, pipe end or socket wrenches shall not be used when jaws are sprung to the point that slippage occurs.

      iii. Impacts such as drift pins, wedges, and chisels shall be kept free of splayed ends.

      iv. Wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tool.

   C. The most commonly used manual tools can be divided into categories: striking and struck tools such as hammers and chisels; torsion tools such as wrenches and locking pliers; sharp tools such as knives, picks, awls, saws, and screwdrivers.

3. STRIKING TOOLS

   A. Commonly used striking tools are hammers, sledges, mauls, axes, and hatchets.

B. Hammers are the most used manual tool. It is also the most abused tool.

C. The guideline, "use the right tool for the job" shall be strictly enforced when a job or job site involves use of hammers of different types.

D. GENERAL RULES FOR HAMMERS OF ALL TYPES:

i. Never strike one hammer with another hammer.

ii. Never use a hammer for a purpose for which it was not designed or manufactured.

iii. Never use a hammer that has a loose or damaged handle, cracks, chips, or excessive wear.

iv. Always wear safety goggles when hammering, striking, or chipping.

v. Always check in the rear before swinging a striking tool.

vi. Keep eyes on the tool or surface to be struck.

vii. Strike blow squarely -- glancing blows increase the chance of striking a finger or shearing a chip off the hammerhead.

E. Nail hammers - These devices are used to drive unhardened, common and finishing nails, and nail sets using the hammer face. The claws are designed to pull unhardened nails and to rip woodwork. Neither heads nor claws shall be struck against hardened metal.

F. Ballpeen hammers - These hammers are designed for riveting; shaping and straightening soft metal; striking chisels and punches of the proper size.

When striking chisels and punches with a Ballpeen hammer, the hammer face shall be a minimum 3/8" greater than the head of the struck tool to minimize the chance of a glancing blow.

G. Riveting and setting hammers - Such hammers come in several varieties and are used by machinists, tinners, and glaziers for riveting, shaping, and sheet metal work, and for inserting glazier points.

H. Scaling and chipping hammers - These tools are designed for chipping welds and scales.

I. Bricklayer's hammer - Bricklayer's hammers are a specialized tool. They are designed for setting and splitting bricks, masonry, tile, and concrete blocks. They may also be used to chip mortar from bricks. Bricklayer's hammers shall never be used to strike metal. Use Ballpeen hammers which have rounded striking faces for striking brick sets and chisels.

J. Soft face and non-ferrous hammers and mallets - Soft face hammers and mallets shall be used where a harder hammer would mar the struck surface.

Use wooden mallets for striking wood and plastic handled chisels, gouges, wood pins and small stakes, and to work with sheet metal. Use rubber and plastic hammers for setting stone. Use non-ferrous materials in hazardous atmospheres where sparks would be dangerous.

Soft face tools shall never be used to strike nails, screws or sharp metal objects.

K. Magnetic hammers - These tools are for light duty and used only to drive common tacks and upholstery nails.

One end of these hammers is magnetized. The magnetized end is used to start the tack or upholstery nail.

L. Body and fender hammers - These tools are used on sheet metal in the repair of automotive bodies and fenders. They shall not be used for any other purpose.

M. Blacksmith's/engineer's hammers and sledges - This type is a double faced, they are used to strike wood, metal, concrete, stone, spikes, cold chisels, rock drills, and hard nails and to drift heavy timbers.

N. Blacksmith's striking tools - Blacksmiths use a variety of hand hammers and sledges with straight or cross beams for shaping and bending unhardened metal.

O. Stone sledges/spalling hammers - Stone sledges are designed to break up stone and concrete and spalling hammers to cut and shape stone and concrete.

Never use these sledges hammers to strike metal or other striking tools.

P. Hand drilling or mash hammers - These heavy short handled hammers shall be used for striking punches, star drills, and hardened nails.

Never use these tools on stone work.

Q. Woodchopper's mauls - These tools have a splitting edge and a striking face and are used to split wood.

The splitting edge is used to cut a notch in a log, then a wedge is placed in a notch and driven with the striking face of the maul.

Never use these tools to strike concrete or another striking tool.

R. Axes and hatchets - Such tools are used in many industries and come in many configurations.

The double bit ax is used to fell, trim, or prune trees and to split or cut wood. The single bit ax has a striking face on the opposite end which is used to drive stakes of wood, plastic, or soft material.

Hatchets are used for cutting, splitting, trimming, and hewing wood. The striking face of a hatchet is designed for striking unhardened nails.

Never use the cutting edge of axes and hatchets to strike metal, stone, or concrete. The striking faces of hatchets shall never be used to strike chisels, punches, rock drills, or other struck tools of hardened metal.

Never use an ax as a wedge or a maul.

4. STRUCK TOOLS

A. Struck tools such as chisels, punches, etc., are designed to direct the force of the blow toward the center of the tool.

* B. Off center blows are not directed toward the center of the tool but down the side. Instead of a cushioning action, a shearing force is achieved.

C. This shearing effect is what causes small chips to fly - a hazardous condition.

D. Cutting edges have precisely determined angles and thicknesses. The angle and thickness allow maximum cutting ability and durability. A dull cutting edge results in less cutting ability and drastically reduces durability.

E. General guidelines for the safe use of struck tools include:

i. Wear safety goggles.

ii. Use a hammer or mallet with a striking face sufficiently larger than the struck tool. The hammer shall be a minimum 3/8" larger than the struck face.

iii. Use only struck tools that are in good condition - redress, repair, or discard damaged tools.

iv. Do not use struck tools that have loose or damaged handles.

v. Strike blows squarely.

vi. Strike away from yourself.

vii. Never strike steel chisels with a nail hammer.

viii. Do not use a grinder to redress heat treated tools.

ix. Redress struck tools that have chipped or slighted points with a whetstone or file.

x. Redress mushroomed heads with a whetstone or file.

F. Cold chisels - Cold chisels have a cutting edge at one end that is used for working with metals softer than the chisel such as cast iron, wrought iron, steel, bronze, copper, etc. The opposite end is usually a struck face. Some tools such as blacksmith's cold chisel have a handle.

Never use a cold chisel to work with stone or concrete. Never use one that is damaged, has a dull cutting edge, a mushroomed striking face, or a broken or loose handle.

Redress the edge or replace the handle. Discard any chisel that is bent or shows dents, cracks, chips, or excessive mushrooming or wear.

G. Hot chisels - These chisels are used for cutting hot steel. Safety precautions are the same as for cold chisels.

H. All steel wood chisels - These struck tools are wood cutting chisels designed for rough work. They are made of one piece of steel.

For use on wood only, never on metal or stone.

I. Punches - Hand punches are made in various patterns and used to mark metal and other materials that are softer than the point end, to drive and remove pins and rivets and to align holes in different sections of materials.

Use punches only for the purpose for which they are designed.

J. Blacksmith's punches - These punches are equipped with a handle and are made of a single piece of steel with a strike face and a point end. Blacksmith's round punches are used for drifting holes and aligning and driving pins. Blacksmith's backing out punches are used to back out bolts, rivets, and pins.

K. Drift pins - These tools are designed for aligning holes in metal and shall never be used as a punch. Never strike a drift pin if either end is chipped or mushroomed.

L. Star drills - These drills resemble four chisels joined at the cutting edges to form a cross and are designed to drill holes in masonry.

M. Brick chisels, sets - These tools are formed from a single piece of steel and are used to score, cut, adjust, and strip bricks and blocks.

Never strike brick chisels or sets with a bricklayer's hammer.

N. Wood splitting wedges - These wedges are made from a solid piece of steel and are designed to split logs, firewood, staves, and other wood products.

They shall be struck only with sledges or woodchopper's mauls with a striking face larger than the struck face of the wedge.

O. Nail puller bars - This type of bar is used to extract deeply embedded nails.

Never use a nail hammer to strike the bar. Discard any nail puller that is bent or has a chip or broken claw or rounded or dull bevel.

P. Nail sets - Nail sets are used to counter seat nails in wood. Do not use as punches or drift pins or to drive pins or rivets.

Do not redress. Discard sets that are bent, dented, cracked, chipped, mushroomed, or excessively worn.

5. TORSION TOOLS

A. The most commonly used types of torsion tools are wrenches and pliers.

B. Wrenches shall be used to hold and turn bolts, nuts, cap screws, etc.

C. Guidelines for the safe use of wrenches include:

i. Always use the tool designed for the job at hand.

ii. Never strike a wrench with a hammer.

iii. Never use a hollow pipe or "cheater" to increase leverage.

iv. Use a wrench with an opening that fits the nut exactly. -- Use wrenches with inch designations for nuts with inch designations, and metric wrenches for metric nuts.

v. Pull on the wrench handle. DO NOT PUSH.

vi. Use box or socket wrenches where possible.

vii. Use a wrench with a straight rather than offset handle whenever possible.

viii. To free a "frozen" nut, apply penetrating oil and use a box or socket wrench.

ix. Never expose a wrench to excessive heat.

x. Inspect periodically, repair, or discard damaged wrenches.

xi. Do not change the shape of wrenches by grinding.

xii. Discard any wrench with damaged or spread jaws.

D. Socket wrenches - Hand socket wrenches are available in a wide range of sizes.

They are used to loosen and tighten nuts and other fasteners with the aid of a ratchet apparatus.

Safety guidelines for their use include:

i. Never use hand sockets on power or impact wrenches.

ii. Always stay within safe torque limits when using an adapter.

iii. Sockets with cracked walls, breaks, or battered points shall be discarded.

E. Combination wrenches - These wrenches are available with a box opening at one end and an open end at the other. Use the box opening where possible.

F. Box wrenches - This type tool has box openings at both ends each a difference size.

G. Open end wrenches - These tools are made with different size openings at either end.

Safe use guidelines include:

i. Never use an extension or "cheater" on the handle.

ii. Discard when jaws are nicked, spread or battered, or when the handle is bent.

H. Adjustable wrenches - Adjustable wrenches have a wide range of capabilities and are convenient for service repair and electrical line work. They shall not replace fixed opening wrenches in production or general service work. Safety guidelines include:

i. For electrical work use dielectric tools -- plastic dipped handles are for comfort not insulation.

ii. Adjust the jaws tightly to the nut.

iii. Work so that the force or torque is applied to the fixed jaw.

iv. Do not use an adjustable wrench on a "frozen" nut.

v. Repair according to manufacturer's instructions.

I. Torque wrenches - These devices measure torque and allow the operator to apply the correct amount for the job.

Safety guidelines include:

i. Make sure the proper torque is being applied.

ii. Check the torque calibration periodically to avoid dangerous slips.

iii. Check manufacturer for repair or replacement standards.

J. Locking wrench/clamps -- These wrenches are combination tools that function as pliers, wrenches, or clamps.

Safe use rules include:

i. Do not expose to heat from welding torches or to contact with welding electrodes.

ii. Lubricate frequently.

iii. Discard, do not repair a damaged tool.

K. Pliers -- Pliers are another very common tool in many industries. There are many varieties. Care shall be taken to use the right pliers for the job.

The following basic safety rules apply to all types of pliers:

i. Do not use pliers for cutting hardened wire unless they are specifically made for that purpose.

ii. Do not expose to excessive heat.

iii. Always cut wire at right angles -- never rock tool from side to side or bend the wire back and forth against the blades.

iv. Don't bend stiff wire with light pliers -- use a sturdier tool.

v. Use correctly -- never use pliers as a striking or struck tool.

vi. Wear safety eye wear when cutting wire.

vii. When working with electricity, shut off the power and use dielectric pliers.

6. SCREWDRIVERS

A. Although there are many types, a screwdriver has one function - driving and withdrawing threaded fasteners.

B. Tips for the safe use of screwdrivers include:

i. Use the right screwdriver for the job -- a bit that is the wrong size or shape for a screw slot can slip and cause injury.

ii. Check the tool before use for a broken handle, bent blade, or damaged tip and repair or replace as necessary. Do not use screwdrivers as pliers, punches, wedges, or pinch bars.

iii. Use cross slot fasteners and drivers when possible.

iv. Place the work piece on a flat surface or in a vise.

v. Disconnect power and use only insulated tools when doing electrical work.

vi. Do not expose blades to excessive heat.

vii. Do not use pliers or a wrench on the screwdriver for more leverage.

viii. Keep handles free of grease.

7. SAWS

A. Guidelines for the safe use of saws include:

i. Hand saws and hacksaws shall be kept sharp.

ii. Always wear safety goggles.

iii. Install hacksaw blades with the teeth pointed away from the handle.

iv. Hot saw blades can break -- prevent heat buildup with light machine oil.

8. SHARP TOOLS

A. Knives, picks, and awls are a constant source of puncture and cut wounds.

B. Safety guidelines for using pointed tools include:

i. Wear the proper protective equipment.

ii. Use tools with a shaft to prevent hands from slipping down onto the blade.

iii. Cutting strokes shall be made away from the body.

iv. The work material shall be in a vise or similar holder.

v. Knives shall be carried in a sheath.

vi. Store pointed tools safely so that the points or cutting edges or covered.

vii. Lay ice on a flat surface when chipping with an ice pick.

viii. Use the right tool for the job.

ix. Handles shall have at least one flat surface to prevent tools from rolling off the work surface.

x. Awls shall be held at right angles to work piece to prevent slipping.

SECTION 26 - ELECTRICAL TOOLS - PORTABLE

1. OVERVIEW

   A. This section covers use and care of portable electric tools.

   B. Portable electric tools shall be inspected before use.

   C. Report all defects immediately to a supervisor.

2. GENERAL RULES

   A. Besides cuts and bruises, there is a danger of electrical shock. Shock can come from a tool with faulty insulation or from an improperly grounded tool. Always disconnect tool before adjusting, servicing, or cleaning.

   B. Flying debris from electric tools can cause injury. The magnitude of the power involved can make broken bits, teeth, blades, etc., lethal missiles.

   C. Avoid using electric motors in areas with combustible fumes.

   D. Power tools shall be properly stored.

   E. General guidelines for using any electrically powered tool safely include:

      i. Avoid dangerous environments -- such as wet, damp, or gaseous workplaces.

      ii. Know the tools so that its work action can be anticipated.

      iii. Use the right tool for the job.

      iv. Do not force the tool -- the job shall be done safer at the rate for which the tool was designed.

      v. Wear personal protective equipment -- always use safety eye wear; dust masks, hearing protection, and other protective equipment when appropriate.

      vi. Dress safely -- Do not wear loose clothing or jewelry. Long hair shall be tied back. Nonconductive clothing shall be worn in wet locations.

      vii. Disconnect the tool before changing bits, blades, etc.

      viii. Protect the cord, disconnect by pulling the plug, not the wire. Never carry the tool by the chord or otherwise abuse the cord.

      ix. Remove chuck keys, wrenches, etc., before connecting the tool to the power source.

      x. Use only outdoor extension cords when working outdoors.

xi. Make sure switch is in the off position when plugging in the tool. Keep the finger off the ON switch when carrying the tool.

xii. Keep tools sharp, clean, and lubricated per instructions. Only trained personnel shall do repairs.

xiii. When using unfamiliar tools, read the instructions. Talk to a supervisor familiar with it and practice before starting the job.

xiv. Use the guards on the tool - do not try to bypass or circumvent them.

xv. All electrical tools shall be grounded.

xvi. Planning ahead includes getting all the necessary tools and materials, anticipating hazards, and avoiding possible distractions.

xvii. The work piece shall be secured whenever possible.

xviii. The work area shall be clean, well lighted, and have appropriate fire extinguishers.

xix. Tools shall be stored in clean, safe, dry areas.

3. DRILLS

A. General guidelines for safe drilling include:

i. Use only bits that are sharp and true.

ii. Bits shall be the right size for the job.

iii. Keep the drill perpendicular to the drill hole to avoid kickback rotation of the drill.

iv. Clean the bit frequently.

v. Allow the bit to cool before changing or adjusting.

vi. Disconnect power before changing bit.

vii. Secure the work piece.

viii. Operators shall have sufficient space with balanced footing.

ix. Never use fingers to check the alignment of holes in the work material.

x. Prevent whip action by using a firm grip on the handles.

xi. Allow the drill to do the cutting, do not apply excessive force.

xii. Wear appropriate personal protective equipment.

xiii. Never touch any moving parts of the drill when in use.

xiv. As with all electrical tools, disconnect before cleaning, making changes or adjustments.

xv. Keep the cord clear of the bit.

xvi. Tools shall be connected to properly rated power sources.

B. Cordless drills -- These drills are used outdoors far from an electrical outlet and to reach overhead or other hard to reach drilling sites. They are battery powered. Such tools are always "plugged in." The trigger shall always be locked in the OFF position when not in use.

In addition:

i. The tools shall never be charged where temperatures are less than 40^{o} F. or more than 104^{o} F. or in damp locations.

ii. Never place batteries near flame or heat.

iii. Discontinue use and report to supervisor any batteries leaking liquid. This liquid is caustic and will cause burns.

4. SAWS

A. Safety guidelines specific to saws include:

i. Saws shall not be jammed or forced into the work piece.

ii. Saws shall have "dead man's" trigger switch.

iii. Operators shall stay out of the line of cut.

iv. Start and stop saws outside of the work piece.

v. Never clean electric saws (or any electrically powered tool) with toxic or flammable solvent.

vi. As with all electrical tools, saws shall be disconnected before cleaning or making changes or adjustments.

vii. Store saws that are not being used as recommended by the manufacturer.

viii. Saws shall never be laid directly on damp ground.

ix. Respirators shall be worn if the work area is enclosed.

x. Never stop saw in mid cut to allow momentum to finish the job.

xi. The work piece shall be well secured to prevent movement caused by blade action.

B. Circular saws - This type saw has a circular blade that rotates and is used extensively for heavy ripping jobs, etc.

Some specific safety guidelines include:

i. As with all electrical tools, disconnect from power source before making adjustments.

ii. Disconnect the power source, if the lower guard must be retracted manually.

iii. Move the lower guard with the retracting handle or safety guard lift lever only.

iv. Never clamp or tie the lower guard in the open position.

v. Check the lower guard to make sure it is not bent or touching the blade -- do not operate the saw if the guard is not working properly.

vi. Keep the finger off the operating button and do not run the saw while carrying it.

vii. When guiding the saw with two hands, place the second hand on the housing auxiliary handle. Keep one hand on the handle.

viii. Tighten depth and bevel and adjusting nuts before sawing.

ix. Make sure the cord is not in the line of cut both above and below the work piece.

x. If it is necessary to stop the saw in the middle of a long rip, the operator shall have a firm grip on the handle -- and shall not resume the cut until the blade is rotating at normal speed.

xi. Do not invert a circular saw for cutoffs or ripping.

C. Reciprocating Saws - Reciprocating saws have a long blade that moves rapidly back and forth. It is used to shape and strip many materials particularly in close places.

Specific safety rules include:

i. Never operate the saw unless the insulating boot is in its proper place.

ii. As with all saws, keep hands away from the blade when operating this tool and wear safety goggles.

D. Jigsaws -- These saws are used for fine and intricate cuts on various types of materials.

Safety guidelines include:

i. Secure bevel adjusting screw before operating the saw.

ii. The blade shall be moving at full speed before it touches the work piece.

iii. Be particularly careful to secure the work piece, keep hands away from the blade, and wear safety goggles.

5. MAINTENANCE

A. Proper and regular maintenance of electrically powered hand tools is vital to the Tool Safety Program.

Guidelines include:

i. Examine cords for damage.

ii. Checks plugs for damage and missing ground terminals -- if the terminal is missing from a three-prong plug, replace the plug.

iii. Check switches with the tool unplugged -- switches shall be free of excessive drag, binding, loose mounting, and obvious defects.

iv. Check chucks, collets, etc., for proper operating condition and see that the right keys and wrenches are available.

v. Visually check housing for defects and damage.

vi. Guards shall be installed properly, function smoothly, and always be used.

vii. Replace missing hardware and tighten all loose bolts.

viii. Make adjustments according to the manufacturer's recommendation.

ix. Resharpen blades, bits, etc., and reinstall according to manufacturer's instructions.

x. A supervisor or his designated representative shall make periodic inspections of all equipment.

B. Employees shall be instructed on how to recognize defects in tools. This activity shall be the supervisor's responsibility.

SECTION 27 - AIR POWERED AND HYDRAULICALLY OPERATED TOOLS - PORTABLE

1. OVERVIEW

   A. This section covers the use of portable tools powered by air, powder, hydraulics, and gasoline.

   B. Air, powder, and gasoline are used to power a variety of industrial tools. Many of them do the same jobs as similar electrically or hand powered tools.

2. AIR POWERED

   A. Air powered tools can be classified as fasteners, abrasives, percussion, wrenches, twists, saws, routers, and shearers.

   B. Although hazards may vary with functions of the tool, there are general safety guidelines for use with air powered tools.

      i. Use the right tool for the job and within designated capacity.

      ii. Operators shall be thoroughly trained in power operation, inspection, and maintenance of the tool.

      iii. Safety requirements of the particular tools shall be followed.

      iv. Hands and clothing shall be kept from the operating end of the tool.

      v. Operators shall be familiar with the job to be done and the action of the tool on the material being worked.

      vi. Employees shall be required to inspect and test the tool, air hose, and coupling before use and be trained to readily detect defects and malfunctions.

      vii. Defective tools shall not be used until repaired by qualified personnel.

      viii. Guards and safety devices shall be in place and used according to the manufacturer's recommendations.

      ix. Air hoses and lines must be bled of compressed air before being separated.

      x. Warning signs shall be used when chips, dust, or excessive noise would affect other persons.

      xi. When work is to be done in a combustible atmosphere, purging or ventilation shall be provided and spark resistant bits shall be used.

xii. Personal protective equipment including safety goggles, hearing protection, and respirators shall be used.

xiii. Safety clips shall be used for all connections involving compressed air hoses.

3. PERCUSSION TOOLS

A. Air driven and hydraulic percussion tools include jackhammers and tampers.

B. General safety rules for such tools include:

i. The tool shall not be operated unless bit, chisel, rivet set, scaling, or other accessory is in position on the tool and in contact with the work piece.

ii. Bits and other accessories shall be removed when not in use.

C. A hand held self-rotating hammer drill is also known as a sinker or block hole drill.

Guidelines for its safe use include:

i. Handles shall be gripped firmly.

ii. Manufacturer's instructions for tempering steel shall be closely followed.

iii. Holes shall be collared at low speed to prevent drills jumping.

iv. The operator shall spread legs for a firm stance and keep clear of the hole.

v. Do not guide the drill with feet or throw a leg over the handle.

vi. Use special adaptations (drifter, stopper, jack leg drill) for drilling horizontal or overhead holes to avoid fatigue.

vii. A wet drilling dust collecting system shall be used when silica dust is present.

D. Tampers -- These tools are used to compact earth or paving materials. Single butt tampers are used for average work. Double or triple butt tampers combine two or three single tampers for heavy work. Enough people shall be on hand to lift and lower the heavier double or triple butt tampers. Operators of single butt tampers shall keep a firm but light grip and maintain a widespread but firm stance.

4. TWIST TOOLS AND SAWS

A. Twist tools include air driven drills, screwdrivers, nut setters, etc.

General safety rules for twist tools include:

i. Use variable speed tools whenever practical so that it is possible to start on a work piece with controlled speed and power.

ii. Use attachments that are sharp to prevent breakage.

iii. When holes are drilled beyond the flutes of the drill, the bits shall be removed from the hole, the drill stopped, and the flutes cleared to prevent jamming or breaking.

iv. Select the right tool or attachment for the job.

v. Personal protective equipment shall be used including safety goggles in all cases and hearing protectors and respirators as appropriate.

B. Air powered saws include circular saws and reciprocating saws.

Safety precautions for air powered saws are the same as for electrically powered saws. When changing blades or making adjustments, the saw must be disconnected from the air line or the air line must be shut off and drained.

5. POWDER ACTUATED TOOLS

A. Powder actuated tools are used to fasten hard materials together (such as wood to steel, steel to concrete, etc.).

B. The tool uses an explosive charge to drive a fastener through the materials involved.

C. Some basic rules for operators of powder actuated tools are:

i. Read and follow the manufacturer's instruction manual.

ii. Use the tool for its intended purpose only.

iii. Know the material being fastened and the base material being fastened to.

iv. Operators and coworkers shall <u>always</u> wear safety goggles and hearing protection.

v. Bystanders or spectators shall never be allowed to gather around powder actuated tools while in use.

vi. Maintain good balance, and brace yourself properly at all times.

vii. Never load a tool until ready to make a fastening.

viii. Always keep the tool pointed in a safe direction.

ix. Never carry a loaded tool from job site to job site.

x. All tools shall be cleaned and maintained in accordance with the tool manufacturer's specific instruction.

xi. Always check the tools at the beginning of the shift to see that they are in the proper working condition.

xii. Remove defective tools from service until they are repaired or replaced.

xiii. Have tools inspected and serviced at regular intervals by the manufacturer's authorized service personnel.

E. Additional operating precautions for powder actuated tools.

i. Only qualified licensed operators shall use these tools.

ii. Tools shall be unloaded and stored in a locked container when not in use.

iii. Always use a standard or special shield or fixture for the job at hand.

iv. Use only the off center positions of adjustable shields when fastening near obstructions such as walls when the obstruction is being used as a shield.

v. Always operate a tool perpendicular to the work surface.

vi. Always check the carriage chamber and barrel for foreign objects before loading.

vii. Never use a tool in an explosive or flammable atmosphere.

viii. Always check the color of each charge before inserting it into the tool chamber.

ix. Never attempt to force a powder load into a chamber.

x. In the event of misfire, follow the manufacturer's instructions.

xi. Unfired powder loads shall not be thrown into trash containers. Return unfired powder loads to the supervisor.

xii. Never carry metal objects in the same container with powder loads. Powder loads shall not be carried in the pockets of the worker.

xiii. Before fastening into any unidentified material, check it by using the center punch test.

xiv. Always follow the manufacturer's rules for edge distance, fastener spacing and material thickness.

xv. Do not attempt to install a fastener through an existing hole in steel or any other material unless a positive guide is used to assure accurate location.

xvi. Never attempt to fasten in a small or cracked area in masonry.

xvii. Do not attempt to fasten to any area where a previous fastener has failed.

xviii. Never override the fastener.

xix. Do not use the fastener to draw down a steel member.

xx. Never over tighten a nut on a threaded stud; this could cause the fastener to back out.

xxi. Do not attempt to install fasteners in very brittle or hard substances such as tool steel, spring steel, glazed tile, hollow tile, or glass block.

xxii. Never fasten into wood fiberboard, or other soft material unless it has base material that will prevent the fastener from passing completely through.

xxiii. Always know the material to be fastened into especially where the base material may be concealed.

xxiv. Check continually to avoid fastening into unsuitable materials by using the center punch test.

6. HYDRAULIC TOOLS

A. Hydraulic tools utilize oil under pressure. Hoses and connections shall be inspected before each use to determine that the equipment is safe to use. All defective equipment shall be removed from service. Defective hydraulic fuel lines shall be replaced, never patched.

B. Items to be checked for are:

i. Cracked surfaces on hoses.

ii. Evidence of oil seeping through hose or at couplings.

iii. Dirty oil in the system (dirt particles can abrade the hose and cause failure).

iv. Hydraulic systems which utilize filters shall incorporate a routine system for changing filters as required following manufacturer's recommendations.

SECTION 28 - CHAIN SAWS

1. GENERAL

A. This section covers information and instructions for use of chain saws.

B. All chain saws shall be equipped with a working chain break.

C. When transporting a chain saw, set the saw level with the gas cap up. Never carry a saw in the passenger compartment or cab of a vehicle. Secure the saw so it cannot tip over and spill gas during the transportation.

D. Chain saws shall be kept out of reach of all unauthorized personnel.

E. Care and maintenance of chain saws is very important. Supervisors shall ensure that:

i. Chain saws are in good condition and easy to start.

ii. Chain saws are clean and free of oil, gasoline, and sawdust (operators shall not use engine fuel as a cleaning solvent).

iii. Operators shall inspect a saw before use to assure that all handles and guards are in place and tight, that all controls function properly, and that the muffler is operative.

iv. The chain is sharp and tight.

v. Chain saws are maintained, operated, and adjusted as outlined in the owner's manual.

F. The main hazards of using a chain saw are:

i. Cuts from the chain (while in motion or not in motion, either on or off the saw).

ii. Kick back - an upward jump or jerk of the saw. Kick back commonly is caused by striking a limb with the tip of the moving chain, running engine too slowly at start and during cut, dull or loose chain, cutting above shoulder height, inattention, and loose grip.

iii. Felling trees, rolling logs, and falling limbs.

iv. Strains and sprains and falls while carrying the saw or "escaping" a felled tree.

v. Burns from a hot muffler or cylinder head.

vi. Sawdust in the eyes.

vii. With an electric saw, shock from defective wiring or improper grounding or from cutting through the power cord.

G. Chain saw operators shall hold the saw with both hands during operation.

H. Chain saw operators shall not use the saw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.

I. Never use a chain saw while standing on a ladder or in a tree.

J. Chain saw operators shall have two feet firmly on the ground at all times while the saw is in operation.

K. Chain bumpers shall be against tree or limb before starting to cut.

L. Fire is a hazard when fueling a chain saw. Items to remember are:

i. Fire extinguishers shall be readily available.

ii. Use the oil and gasoline mixture recommended by the manufacturer.

iii. Saw shall be kept clean and free of gasoline, oil, and sawdust.

iv. Carry fuel only in safety cans (with a spout or funnel).

v. Let the saw cool before refueling.

vi. Fill the fuel tank in an area of bare ground with engine shut off.

vii. Wipe the spilled fuel off the saw and keep the muffler clean.

viii. Start the motor at least ten feet away from the area where the saw was fueled.

2. PREPARATION

A. Avoid loose clothing, jewelry, or dangling items that might catch in the saw. No loose sleeves cuffs or scarves, tie long hair back.

B. Required safety equipment: eye protection (safety goggles), hard hats, ear protection.

C. Recommended equipment: safety shoes, safety gloves, thigh pads.

D. When carrying a chain saw, the motor shall be turned off. The chain saw blade shall point to the rear and the muffler shall be away from the body. Chain saw operators shall be instructed to shut off the saw when carrying it for any distance or in hazardous conditions such as slippery surfaces or heavy underbrush. The saw shall be at idle speed when not being used to cut.

E. When preparing to cut down a tree:

i. Check the tree and surrounding area for possible danger.

ii. Check the size and shape of the tree.

iii. Check the direction of the wind.

iv. Determine which way the tree is leaning.

v. Prepare a bed for the tree to fall in.

F. Clear the work area of brush, check escape route. Check for tripping obstacles. <u>WARNING: DO NOT CUT BRUSH WITH A CHAIN SAW -- BRUSH WILL WHIP CAUSING INJURIES</u>.

3. PROCEDURES FOR FELLING TREES AND CLEARING LIMBS WHILE USING CHAIN SAW

A. Start the saw by:

i. Placing the saw on level ground.

ii. Never drop, start, or brace a saw against any part of the body to start.

iii. Get on good footing.

iv. Make sure the chain is not touching anything during starting procedures.

v. Hold the saw firmly with one hand, pull the starting cord away from the body. (Never wind the cord around hand.)

B. Make the undercut first by:

i. Lining up the first undercut carefully facing the direction the tree will fall;

ii. Undercutting one-third of the diameter of the tree. That assures full control of the tree when it falls; and

iii. The height or opening of the undercut shall be 45^{o} in relation to the first cut.

C. Clear the danger area twice the height of the tree being felled before starting the back cut. Be certain no one is in the danger zone. Make the back cut (or felled cut) 2" above the level of the undercut notch so the tree will not kick back when falling. The cut shall be straight and horizontal. Wedge the cut if the tree is likely to settle on the saw. Use plastic hardwood or soft metal wedges.

D. Use two cuts if the saw bar is too short or if the tree has a heavy lean in the direction it is to be felled. This prevents splitting up from the stump.

E. Keep the saw in the cut, until the cut opens. Then quickly remove the saw and stop the motor. Do not set a hot saw in dry leaves or grass.

F. Retreat at least 25 feet at a 45º angle from the line of fall following the escape route previously checked for tripping hazards or other obstacles. Watch for flying or falling limbs.

G. Removing limbs from a felled tree: For small logs stand on the opposite side of the trunk from the limb being cut. On a hillside, work on the uphill side.

H. When cutting the trunk of a felled tree into sections, the following safety points shall be followed:

   i. Clear the work area of brush.

   ii. Block the tree so it will not roll.

   iii. On a hillside, work on the upgrade side.

   iv. Slant the cut so the log will open the cut and prevent the saw from binding.

   v. Slow the motor and hold it away from the body just before the cut is completed.

I. Do not remove supporting limbs flush with the trunk until the log is cut to desired length. Use stubs to keep the log off the ground.

J. If the log rests on the ground, cut from the top. Make sure the chain does not strike the ground.

K. With a log supported at one end, undercut one-third diameter. Complete the cut by cutting from top to prevent binding the saw.

L. With the log supported at both ends, cut about one-third of the log's diameter. Finish with an under cut to meet the first cut.

M. When pruning limbs from trees, under cut about one-third the diameter of the limb. Finish with an over cut to meet the first cut.

SECTION 29 - LADDERS

1. STEPLADDERS, TRACK SUPPORTED AND PORTABLE ROLLING LADDERS

A. GENERAL

i. This section covers the precautionary measures necessary for the safe usage of track supported and portable rolling ladders, stepladders, and ladder seats.

ii. This section includes the description of the ladder block and its use as a safety measure with track supported rolling ladders.

B. LADDER PRECAUTIONS - GENERAL

i. Do not use defective ladders or ladders supported by defective track.

ii. Before moving a ladder, make certain that no employee or equipment is on or below the ladder.

iii. Do not leave tools, materials, or apparatus on unattended ladders. When these items are no longer required, they shall be cleared from the work site.

iv. Do not throw tools and materials from the floor to an employee on the ladder or drop them from the ladder to an employee on the floor.

v. Do not at any time use nearby equipment, frames, racks, or other structures to assist in ascending, descending, or changing positions on ladders.

vi. Do not climb frames or stand on motors, equipment, or other objects that are not designed for that purpose. Use a ladder, bench, or stool, whichever is appropriate.

vii. Do not stand with one foot on the ladder and the other foot resting on equipment, frames, racks, or other structures.

viii. Do not step from one ladder to another.

ix. Do not use wax on ladder steps or handrails.

x. Painted ladders shall not be used. Paint may hide possible defects. (Ladders may be covered with a clear sealer.)

xi. Do not overreach or lean to the side so far that loss of footing or balance may occur.

xii. Place ladders so as to gain safe and easy access to the work at hand.

xiii. Always face the ladder when ascending or descending. Use the handrail or side rail to ascend or descend one step at a time.

xiv. Rubber soled shoes shall be worn in preference to shoes with leather soles.

xv. Never lift the weight of your body from the ladder by grasping any overhead structure.

xvi. Do not jump or swing on or off a ladder.

xvii. When descending, make certain that the last step has been reached before stepping to the floor.

xviii. Anytime the ladder is used when applying lubricants or other materials of similar nature, inspect the ladder during and after use to make certain that no substance has been spilled on the steps.

xix. Perform periodic tests and inspections per manufacturer's instructions.

C. PORTABLE LADDERS AND STEPLADDERS

i. Do not use any type of portable rolling ladder or stepladder as a straight ladder.

ii. Before mounting portable rolling ladder (folding type) or stepladders, check that the spreaders are fully extended and locked.

iii. Do not mount or climb from the rear on any portable rolling ladder (nonfolding) or any stepladder that is designed to be mounted from one side only.

iv. The third step from the top of the ladder is the highest ascent that can be safely maintained (with the exception of the platform type stepladder).

v. Do not place boxes or similar objects on a ladder or ladders on boxes or similar objects in order to gain additional height.

vi. Do not attempt to shift the position of a ladder while on it.

vii. When folding the ladder, care shall be exercised to avoid pinching the fingers in spreader braces.

viii. When it is necessary to place a ladder in a doorway, the door shall be fastened in an open position, barricaded or guarded by another person.

ix. When carrying a ladder from one place to another, guard against striking it against the ceiling, light fixtures, equipment, or other objects. When passing through doorways, make certain that no one is coming from the opposite direction. When necessary have another person open doors and assist in going around corners.

x. When ladders are not in use, return them to the correct storage area.

xi. On portable rolling ladders, which are equipped with ropes to assist in folding the ladder, face the ladder, grasp the rope just above the spreader and pull toward the body.

D. TRACK SUPPORTED LADDERS

i. When moving a ladder, make certain that no employee is on or below the ladder.

ii. Move ladder slowly and evenly to avoid ramming the ladder stops on the track.

iii. Do not ascend or descend a moving ladder.

iv. When ascending a ladder, guard against striking head against ladder track or other overhead metal framework.

v. Do not use the brake rope to ensure stability except when it is necessary to hold the brake rope while moving the ladder.

vi. Do not mount a platform type rolling ladder from the rear.

vii. A track supported ladder may be moved by the employee while aloft unless:

a. It is necessary to move it across the aisle.

b. The path is obstructed in any way.

c. It must be moved a distance of more than five feet.

d. For any other reason that the ladder cannot be moved safely.

NOTE: PORTABLE ROLLING LADDERS SHALL NOT BE MOVED BY THE EMPLOYEE WHILE ALOFT.

viii. To move a track supported ladder (not equipped with a brake) while aloft, grasp the handrail with one hand and using the other hand on the superstructure push or pull the ladder slowly and evenly in the desired direction. If the ladder is equipped with a brake, grasp the brake rope instead of the handrail, pull down on the brake rope, hold it so that the brake is released, and then move the ladder as outlined above. While holding the brake rope, the arm shall be braced against the side rail or step of the ladder to ensure stability.

ix. When working on a rolling ladder not equipped with a seat, the employee shall work in a well balanced position with both feet securely placed on the same step. If a temporary condition exists which makes it necessary to work in a position other than the one described above, one leg shall be placed over a ladder step to ensure stability.

x. Do not leave unattended ladders in cross aisles.

xi. Do not climb from a rolling ladder to the superstructure or other elevated points unless the ladder is held securely by another employee.

xii. When working on a ladder which extends partly into an aisle, suitable measures such as blocking off the area shall be used to warn passersby that there is someone aloft.

xiii. Before descending a rolling ladder, make certain that there is no other person or object on the steps below.

xiv. When stepping from a ladder to the floor, proper footing with both feet on the floor shall be assured before letting go of the handrail. Do not push the ladder while stepping to the floor.

xv. When it is necessary to move a ladder across an aisle intersection, exercise extreme care to prevent striking any passersby.

xvi. To prevent bending or breaking hanger rods, do not mount or climb a ladder which has been sideways from its normal position more than 12 inches at the wheel.

xvii. Always use the wood ladder block for track supported rolling ladders not equipped with a brake.

E. LADDER BLOCK

i. The ladder block is a wood block approximately 10 inches long, 3-1/4 inches wide, and 1-5/8 inches high. A "V" shaped depression in the top accepts the wheel of a track supported rolling ladder.

ii. The block is equipped with a screw eye so that it may be hung from a hook attached to the bottom center rear of the second step of a rolling ladder whenever the block is not in use.

iii. This ladder block shall be used when using ladder seats working in one location for extended periods of time or performing heavy work.

iv. When operations are performed from a track supported ladder not equipped with brakes, a ladder block shall be placed under one wheel.

v. Maximum braking effect is secured by placing it under the wheel nearest the equipment on which the work is being done.

F. LADDER SEATS

i. Use ladder seats only on track supported ladders.

ii. Do not use a defective ladder seat. Inspect wooden seats frequently for loose nuts and screws, cracks and splits.

iii. Avoid contact with wiring or equipment while transporting and placing ladder seats.

iv. When ascending or descending a ladder and carrying a ladder seat in one hand, place the other hand on the handrail and ascend or descend the ladder one step at a time.

v. Do not stand on ladder seats.

vi. Tools, equipment, and materials shall not be left on unattended ladder seats.

vii. Remove all tools and equipment from ladder seats and ladder before removing seat.

viii. When ladder seats are not in use, they shall be placed in their assigned locations.

ix. When placing or removing a wooden ladder seat on the ladder, follow manufacturer's instructions.

2. EXTENSION LADDERS

A. GENERAL

i. This section describes laminated wood and fiberglass extension ladders to be used by City employees and specifies methods of using the ladder safely.

ii. Aluminum extension ladders shall not be used by City employees.

B. FEATURES AND SPECIFICATIONS FOR WOOD AND FIBERGLASS LADDERS

i. Wood Ladders

a. Rails: shall be laminated for structural strength and reliability and made of ladder grade wood materials.

b. Rungs: Full 1-5/32" diameter (minimum).

c. Rope: 5/16" safety yellow polypropylene with 1-1/4" aluminum pulley; rope clamp attaches rope to bottom rung permanently.

d. Lock: Automatic spring type with 1/4" flat steel hook.

e. Ladder Stop: Steel 3/16" size double riveted to side rail.

f. Rung Braces: Heavy-duty 16 gauge steel plated to prevent rust.

g. Anti-Split Rivets: Inserted at tops and bottoms of side rails to minimize side rail end damage.

h. Wood Preservative Treatment: Wood preservative and water repellent especially formulated for treatment of wood intended for outdoor use.

i. Swivel Safety Shoes: The safety shoe in the #1 position provides additional protection against slippage. In the #2 position, the shoe becomes a self-sharpening spike. (NOTE: ALL EXTENSION LADDERS MUST BE EQUIPPED WITH SWIVEL SHOES.)

j. All sizes given are minimum requirements.

ii. Fiberglass Ladders

a. Top Caps and Bottom Plug: Durable aluminum castings that protect the top and bottom of both the base and fly sections. The bottom plug on the base of the fly section shall be serrated to reduce slippage of the sections when used separately.

b.. Outside Slide Guides: Four heavy-duty plated steel outside slide guides that allow sections to be easily taken apart.

c. Rope and Pulley: 1-1/4" laminized steel pulley shall be installed on the top rung of the base with the clevis brackets. All weather polypropylene rope shall be standard on all fiberglass ladders.

d. Rung to Rail Connection: The rung plate and rung assembly shall be riveted in four places to handrail for maximum strength and durability.

e. Wear Sleeve: Stainless steel wear sleeves shall be placed intermittently on the rungs of the base section near the side rail to reduce friction as the fiberglass side rails of the fly section pass over them when the ladder is raised and lowered.

f. Rung Locks: Case aluminum spring loaded gravity type shall be attached to side rails with plated steel brackets installed so the ladder has full complement of rungs.

g. Rung Braces: Plated steel run brackets shall be used at stress points to furnish additional strength and help minimize side sway.

h. Swivel Safety Shoes: Large case aluminum swivel shoes with thick corded rubber bottom and spiked ends. (NOTE: ALL EXTENSION LADDERS MUST BE EQUIPPED WITH SWIVEL SHOES.)

i. Dimensions given are minimum requirements.

C. SAFETY PRECAUTIONS

i. When working in areas exposed to vehicle traffic, place ladders on the side of the work away from the traffic whenever possible. The ladder shall be placed against the work in the position which provides the most stable footing.

ii. If the ladder must be placed in a work location where it may be struck by vehicles or pedestrians, arrangements shall be made for an employee to guard the ladder. In addition, display warning flags or signs to direct traffic around the work site.

iii. Defective, unsafe, or damaged ladders shall be removed from service and tagged as UNSAFE. The ladder shall be repaired or replaced before being used. Ladders that cannot be repaired shall be destroyed.

iv. Do not place ladders on boxes, barrels, or other objects to obtain additional height; use a ladder of sufficient length for the job at hand.

v. Keep hands and feet off the rungs when raising or lowering the upper section of an extension ladder. Stand clear when the top section is being lowered.

vi. Avoid spilling or splattering paraffin, paint, or other materials on a ladder.

vii. Make certain that ladder locks are engaged properly and the ladder rope is tied securely to one of the rungs on the bottom section before climbing an extension ladder.

viii. Ladders shall be placed so that at least two rungs extend above the top support when the employee is in position on the ladder.

ix. Only one employee at a time shall be on a ladder.

x. When a ladder is securely placed, held by an one employee, lashed or otherwise secured so it cannot fall, the employee on it may improve his security by passing one leg between the rungs.

xi. When on ladders do not allow wire, hand lines, or ladder ropes to dangle to the ground. The hand line when not in use, will be tied to the lower portion of the ladder or pulled aloft.

xii. Do not slide down an extension ladder.

xiii. Never carry an extension ladder from one location to another while it is extended. First lower the ladder and secure the ladder rope, then extend it again at the new location.

xiv. Point the ladder feet forward and downward when carrying a ladder on the shoulder.

xv. Avoid swinging the ladder into the path of passing vehicles or pedestrians when carrying a ladder or removing it from a motor vehicle.

xvi. Do not place ladders where they may come in contact with power lines.

xvii. Do not use a ladder in a horizontal position as a platform, runway, or scaffold.

D. SELECTING FOOTING

i. Use care in positioning ladders before climbing them. Place the foot of the ladder on the ground or other firm support so that the distance from the ladder to the base of the surface against which the ladder is leaned is approximately 1/4 of the length of the ladder from top support to bottom support. The ladder shall be braced, fastened, or securely held.

ii. Set a ladder only on secure footing. Set both feet of the ladder at the same level. If a ladder leans to either the right or left, it is not properly placed. Always place an extension ladder to be climbed with the top section to the front.

E. REFINISHING WOOD AND FIBERGLASS LADDERS

i. After using wood or fiberglass extension ladders for several years, the ladder finish will wear off.

ii. When this occurs in fiberglass, the small fibers protrude from the ladder surface. Refinish a fiberglass ladder as follows:

a. Wash the ladder thoroughly with a mild detergent (such as a dishwashing liquid). Make sure all dirt, grease, etc., is removed from the ladder. The ladder surface shall be completely clean.

b. Any small fibers protruding from the ladder surface must be removed by sanding with sandpaper or steel wool. When the surface is smooth, wash the powder or dust traces from the ladder surface and allow time for the ladder to dry.

c. Inspect the ladder surface making sure the surface is dry, smooth, and clean. Cover the fiberglass surface with clear acrylic lacquer. (DO NOT COVER THE RUNGS.) The lacquer shall be applied by brush or spraying. Lacquer shall not be used in a closed area. If the refinishing is done indoors, the room shall be well ventilated.

iii. Refinish a wood ladder as follows:

a. Wash the ladder thoroughly with a mild detergent (a dishwashing liquid). Make sure all dirt, grease, etc., is removed from the ladder. The ladder surface shall be completely clean.

b. Any splinters protruding from the ladder surface must be removed by sanding the surface with sandpaper.

c. Inspect the ladder surface making sure the surface is dry, smooth, and clean. Cover all ladder surfaces (including rungs) with approved wood preservative.

SECTION 30 - POWERED INDUSTRIAL LIFT TRUCKS

1. OVERVIEW

   A. This section covers the care, use, and operation of powered industrial lift trucks.

   B. Lift trucks require safeguarding for the operator's protection and for the safety of other trucks.

   C. Safe operation of lift trucks reduces injuries, property damage and excessive maintenance.

   D. Forklift trucks are compact and highly maneuverable and are designed for handling packaged, boxed, or bagged material or palletized parts that can be stacked. Many specific designs are developed for particular jobs to be done.

   E. Rated truck load capacity shall be enough to exceed any expected load to be handled and displayed at all times on the vehicle in such a manner that is readily visible to the operator Attempting to lift more than the forklift is designed to handle may damage the truck, and cause tipping of the unit.

   F. Forklift trucks for use on uneven surfaces and on dirt or gravel surfaces shall be equipped with pneumatic tires.

   G. Overhead protection is required to protect the operator from falling objects.

   H. Lift trucks shall have a means to prevent over travel of hoists and tilt motions. If lifting systems are hydraulically driven, an overload valve shall be installed in the system and suitable stops provided to prevent over travel.

2. GENERAL

   A. Check the vehicle is in safe operating condition. Check oil and water. Look for any leaks or puddles under the vehicle. Check tires, brakes, and the general condition of the vehicle before starting the engine. Never start the engine or operate the vehicle in any position other than from the operator's seat.

   B. After starting the engine, check steering, recheck brakes, make sure the transmission and gear box operate properly and check the lights and horn. Make sure all other controls operate smoothly and properly before driving.

   C. Seat belts shall be worn by the operator.

   D. ALLOW NO RIDERS.

   E. Face the direction of travel at all times. Do not exceed the speed limits. Sound the horn at blind corners. Travel with the forks carried as low as possible.

F. All vehicles which operate in an area that is not well illuminated (less than two lumens per square foot) shall be equipped with lights.

G. All forklift trucks shall be equipped with horns or other audible warning.

H. Forklift trucks shall not be altered or modified in any way without written approval from the manufacturer of the equipment.

I. Keep arms, legs, and other body parts within the dimensions of the operator's compartment. Do not reach between mast arms to turn off the key or to move the forks.

J. Never stand or pass or permit anyone else to stand or pass under elevated forks.

K. Park the vehicle with forks as close to the ground as possible. Before leaving the vehicle, shut off the power, set the parking brake, and put controls in neutral and remove the key. When parking on an incline chock the wheels.

L. Never leave the vehicle unattended when the engine is running.

3. HAZARDS

A. There are two primary hazards inherent in the operation of lift trucks:

i. collision or overturning of the truck; and

ii. movement or collapse of bridge plates, dock boards, or truck beds into which the vehicle has been driven.

Additional danger exists during the handling of materials, including bags, cartons, boxes, or other articles that may fall during material handling.

B. Lift trucks shall be equipped with overhead protection.

C. Do not operate gasoline, diesel, or liquefied petroleum gas powered trucks in confined areas.

4. ELECTRIC TRUCKS

A. Handling and charging storage batteries for electric lift trucks involve several hazards. Employees shall wear chemical goggles, rubber gloves, aprons, and rubber boots during filling and handling operations.

B. Battery changing and charging operations shall be performed by trained, authorized personnel.

C. Battery changing and charging operations shall be located in areas designated for that purpose. Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting the changing apparatus against damage by trucks, and for adequate ventilation to disperse gases and fumes from the batteries.

D. When racks are used to support batteries, they shall be made of nonconductive material or be coated or covered by insulating material.

E. When filling batteries with electrolyte, acid shall be poured into water. NEVER pour water into acid. Wash spilled electrolyte off skin or clothing immediately. Clean up all spills.

F. Trucks shall be properly positioned and the brake applied before attempting to change or charge batteries. Reinstalled batteries shall be properly positioned and secured in the truck.

G. When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning, the battery cover shall be open to dissipate heat.

H. Smoking shall be prohibited in the charging area. Sulfuric acid used for refilling shall be containerized and disposed of according to current regulations.

I. Precaution shall be taken to prevent open flames, spark, or electric arcs in battery charging areas.

J. Battery terminals shall be clean, connections tight, and the battery securely locked in placed in the truck. Tools or metal parts shall never be laid on a battery.

5. GASOLINE OPERATED TRUCKS

A. Gasoline for trucks shall be handled and stored in accordance with provisions of NFPA 30 Flammable and Combustible Liquids Codes. (See Section 18 of this manual.)

B. Fuel tanks on gasoline operated trucks and tractors shall be filled at designated locations with filling hose and equipment properly grounded and bonded.

C. Safety cans used for fuel handling shall be tested and approved by Factory Mutual or Underwriters' Laboratory.

D. Engines shall be stopped and operators shall be off trucks before trucks are refueled. Smoking is not permitted during refueling.

E. Employees shall avoid spilling gasoline or overflowing the gasoline tank during refueling.

F. Gasoline tanks shall be drained into bonded, self-closing cans.

6. LIQUEFIED PETROLEUM GAS OPERATED TRUCKS

A. Only listed fuel containers designed in accordance with "NFPA Standards" shall be used. Permanently mounted fuel containers shall be charged outdoors, and storage facilities and charging equipment shall meet the requirements of NFPA 58.

B. For fuel containers used on industrial trucks, a device, such as an excess flow check valve shall be provided in the fuel system to reduce the escape of fuel in the event that a pressure fuel line or fitting breaks. Exchange of removable fuel containers shall be in accordance with NFPA standards.

C. A special building or outside storage area is required for the storage of fuel containers.

D. The person filling the containers shall be trained in the safe handling of LP-gas.

E. The filling area must conform to NFPA 59 and applicable state or local regulations. Trucks themselves must comply with NFPA 505.

F. LP-gas fuel trucks shall be stored in a well ventilated building or fire resistant enclosure. Ventilation shall be provided at floor level. A lift truck shall not be garaged in the same room with stored gas cylinders.

G. A thorough inspection and maintenance procedure for LP-gas fuel trucks shall be followed. No repair work on LP-gas fueled industrial trucks shall be permitted indoors without first removing the fuel container.

H. If the fuel container is permanently mounted, major repairs shall be made outdoors. NFPA standards prevent no more than two LP-gas containers on each industrial truck.

I. When converting a gasoline fuel truck to an LP-gas fuel truck, use only the Underwriters Laboratory or Factory Mutual approved fittings. These fittings and units shall include all safety features that are incorporated in LP-gas fuel truck requirements by the testing agency.

The units and fittings shall be installed in strict conformity with the requirements specified in NFPA 58 "Storage and Handling of Liquefied Petroleum Gases" and UL 558.

J. The conversion shall be attempted only by qualified mechanics who are familiar with handling LP-gas equipment.

7. LIFT TRUCK OPERATION

A. Inspect hydraulic cylinders, masts, forks, and lifting chains for any cracks, damage, leaks, or other hazardous conditions.

B. Determine the job to be done and any special instructions concerning possible hazards including the handling of any hazardous or toxic substances.

C. Never exceed five miles per hour when operating a lift truck.

D. Loading the truck:

i. Know the capacity of the vehicle and keep the load within those limits.

ii. Do not move a questionable or unsafe load; inspect for overload, loose materials or poor balance.

iii. Avoid lifting loads with one fork of a forklift truck.

iv. Do not push heavy loads with one corner of the truck.

v. Avoid striking any object with the fork tips.

vi. Position loads evenly on forks for proper balance.

vii. When lifting, lowering, or carrying loads, keep the mast of the vehicle slightly tilted back, never forward. Lift loads slowly; avoid sudden jerks.

E. Traveling with the load:

i. Start and stop trucks gradually and slowly.

ii. Carry the load as close to the floor as possible.

iii. For better vision, drive backwards with a bulky load; always look in the direction of travel.

iv. Drive in reverse when carrying loads down a ramp or incline and look in the direction of travel.

v. Keep clear of the edge of loading docks and platforms.

vi. Keep the load on a lift against the carriage with the mast of the truck tilted backward to cradle the load.

vii. Do not raise or lower a load when traveling.

F. Depositing the load or stacking:

i. Tilt an elevated load forward only when it is directly over the unloading place and keep the load as low as possible.

ii. Use special care and check overhead room when stacking materials near heaters, electrical wiring, pipes, or other fragile or dangerous equipment.

SECTION 31 - AERIAL LIFT TRUCKS

1. GENERAL

   A. This section covers the safe operation of aerial lift trucks.

   B. Each aerial lift operator shall be thoroughly trained in the use of the equipment before it is operated at a job site. The operator shall not only know the particular equipment involved but also the type of work it will do in the field.

   C. In addition to precautions necessary in driving a standard truck, the driver shall be constantly aware that the vehicle has exposed equipment above the elevation of the truck cab and must check clearances before driving under overhead obstructions. An automatic warning device such as flag or lights shall be provided to notify the driver when the boom is up.

   D. The operator shall be certain that conditions are clear before moving the vehicle. Movement of an aerial basket truck with personnel in the basket except for certain operations under conditions specified in this section is prohibited.

   E. Employees shall know the road limits and design capabilities of the equipment.

   F. Prior to movement of the basket, the operator shall note the location of all obstructions and hazards and plan movements to avoid them. The operator shall always face the direction in which the aerial lift is to move.

   G. Maintaining clearance from energized equipment is equally important when working from a basket. 41 foot and above (working height) shall be insulated and certified to 69KV. - per ANSI.A92.2 requirements.

   H. Power shall be stopped when a leak is detected in the air or hydraulic lines.

2. TYPES OF EQUIPMENT

   A. Aerial baskets are designed to move personnel and equipment aloft and to provide a platform so work can be done on elevated structures. Present machines provide working heights of 30 feet or more.

   B. There are two types of booms:

      i. Articulated arms or "elbows" which operate in a manner similar to a person's arm. If the upper arm is capable of moving more than 180º with respect to the lower arm, it is considered fully articulated. If the capability is less than 180º, it is considered semi-articulated.

      ii. Telescoping booms in which upper sections telescope into and out of lower sections.

C. Booms are operated by hydraulic pistons, cables, and pulleys or a combination of both. The basket can be controlled from either of two control stations, one located on the basket and the other at ground level on the vehicle. Controls shall be the "dead man" type, which automatically stop the equipment when released. The lower controls will override the upper controls.

D. The manufacturer's recommendations on loading shall be adhered to at all times.

E. Light duty equipment refers to units which have the ability to lift one employee and a small amount of material and equipment in an insulated basket to a maximum working height of approximately 42 feet. The maximum capacity of a single basket limited by the basket design is usually 300 pounds.

F. Heavy-duty equipment includes units designed to lift two employees to working heights of more than 42 feet. Rated base capacity is usually 500 to 600 pounds. However, capacities of up to 2,000 pounds are available on some equipment. Check manufacturer's rating of equipment to be used prior to loading.

3. HAZARDS

A. Most frequent causes of accidents while using mobile aerial baskets are:

i. Failure to observe proper precautions against electrical hazards to personnel both aloft and on the ground.

ii. Improper positioning of vehicle or outriggers.

iii. Lack of sufficient blocking under outriggers or overloading the boom.

iv. Overreaching from basket or other improper working procedures.

v. Failure to use proper personal protective equipment.

vi. Improper moving of the truck while the boom is raised or moving it where there is inadequate clearance for the boom.

vii. Failures of structural or mechanical parts, or jamming of controls

viii. Swinging the boom or basket against overhead obstructions or energized equipment.

ix. Moving the boom into positions that interfere with traffic.

4. INSPECTIONS

A. Equipment shall be inspected prior to start of each shift. An effective daily inspection shall cover the following:

i. Visual inspection of all attachment welds between actuating cylinders and booms or pedestals.

ii. Visual inspection of all pivot pins for security of their locking devices.

iii. Visual inspection of all exposed cables, sheaths, and leveling devices for both wear and security of attachment.

iv. Visual inspection of hydraulic system for leaks and wear.

v. Check of lubrication and fuel levels.

vi. Visual inspection of boom and basket for cracks or abrasions.

vii. Operation of booms from ground controls through one complete cycle noting any unusual noises and deviations from normal operations.

Defects found shall be reported to a supervisor, and corrected before use of equipment.

B. Before leaving the yard or garage, the driver shall check the operating condition of the brakes, lights, and other automotive operating accessories such as the horn and windshield wipers. Before maneuvering the basket into any space that contains obstructions, the operator shall test basket controls to be sure they are in proper working order. Equipment shall not be used if tests indicate controls are not working properly.

5. BASKET SAFEGUARDS

A. Aerial baskets shall be equipped with a safety belt and lanyard to be worn by all personnel working from the baskets. The lanyard shall be attached to the equipment. Lanyards shall only be long enough to allow movement within the basket and prevent climbing onto the rim.

B. Employees shall only enter or leave the basket when it is resting on the ground or cradle in the traveling position. When the basket is being lowered, personnel on the ground shall stand clear of the path of the basket and boom.

When employees are in the basket, ground personnel shall stay away from the area directly below the basket. Tools and materials shall not be thrown to or from the elevated basket. Personnel working aloft shall secure all tools that are not in use.

C. No one shall operate the lowering controls to move the boom unless requested by the person in the basket or in case of emergency.

D. Neither truck boom or basket shall be considered electrically insulated.

6. SETTING UP

A. Barricades as outlined in Section 25 of this manual shall be set up as required. When establishing work areas, be sure to consider location of overhead conductors and other surrounding conditions and how extended boom movements may interfere with traffic. Movement of vehicles during the job shall be avoided by careful planning and selecting the original position so that all or the majority of work areas can be reached from one setting.

Use strobe warning lights on vehicles to alert oncoming traffic.

B. When the vehicle is set up, the brake locks shall be engaged and wheels shall be chocked in both directions front and rear.

C. When the vehicle is situated on a grade, at least two wheels shall be chocked on the downgrade side.

SECTION 32 - GAS WELDING

1. GAS WELDING AND CUTTING

A. GENERAL

i. This section covers gas welding and cutting processes performed with manual equipment.

ii. A gas welding process unites metals by heating them with the flame from the combustion of a fuel gas and includes the use of filler metal.

iii. An oxygen cutting process severs or removes metal by the chemical reaction of the metal with oxygen at an elevated temperature maintained with heat from the combustion of fuel gases.

iv. Oxygen cylinders and fittings shall be kept away from oil and grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

B. USE OF FUEL GAS

i. Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. (This action is generally termed "cracking" and is intended to clear the valve of dust or dirt that might otherwise enter the regulator.) The person cracking the valve shall stand to one side of the outlet not in front of it. The valve of a fuel gas cylinder shall not be cracked where the gas would reach welding work, sparks, flame, or other possible sources of ignition.

ii. The cylinder valve shall always be opened slowly to prevent damage to the regulator. For quick closing, valves on fuel gas cylinders shall not be opened more than 1-1/2 turns. When a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel gas flow may be shut off quickly in case of an emergency. Never place items on top of a fuel gas cylinder.

iii. Fuel gas shall not be used from cylinders through torches or other devices which are equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

iv. Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.

v. If, when the valve on the fuel gas cylinder is open, there is found to be a leak around the valve stem, the valve shall be closed and the gland nut tightened. If this action does not stop the leak, the use of the cylinder shall be discontinued. The cylinder shall be tagged and removed from the work area.

vi. If a leak develops at a fuel plug or other safety device, the cylinder shall be tagged and removed from the work area.

C. REGULATORS, GAUGES, AND HOSE

i. Regulators shall be used on both oxygen and fuel gas cylinders to maintain a uniform gas supply to the torches at the correct pressure. The oxygen regulator shall be equipped with a safety relief valve.

ii. Employees shall stand to one side and away from regulator gauge faces when opening cylinder valves.

iii. Oxygen and fuel gas pressure regulators, including their related gauges shall be free of leaks and in proper working order while in use.

iv. Oxygen regulators shall be equipped with right hand threads and acetylene regulators shall be equipped with left hand threads. Only regulators listed by Factory Mutual or Underwriters' Laboratories shall be used.

v. Fuel gas hose and oxygen hose shall be easily distinguishable from each other. Oxygen and fuel gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.

vi. Flashback arrestors (check valves) shall be connected between the regulators and the gas hose and oxygen hose.

vii. All connections shall be tested for leaks before beginning any welding or cutting operation.

viii. When parallel sections of oxygen and fuel gas hoses are taped together not more than four inches out of any 12 inch section shall be covered.

ix. Inspect all hoses carrying combustible gases before use. Defective hoses shall be tagged and removed from service.

x. Hose couplings shall be of the type which cannot be unlocked or disconnected by means of straight pull without rotary motion.

xi. Boxes for the storage of gas hoses shall be ventilated. Store hoses in a cool place.

xii. Hoses and other equipment shall be kept clear of passageways, ladders, and stairs. Hoses shall be protected from flying sparks, hot slag, and other hot objects as well as grease and oil.

D. TORCHES

i. Torches are constructed of metal castings, forgings, and tubing. Usually, they are made of brass or bronze. Use only those torches listed or approved by Underwriters Laboratory or Factory Mutual.

ii. Gases enter the torch by separate inlets, through valves to the mixing chamber and to the outlet orifice located in the torch tip. Several interchangeable tips are provided with each torch having orifices of various sizes according to the work to be done.

iii. The cutting torch unlike the welding torch uses a separate jet of oxygen in addition to the jets of mixed oxygen and fuel gas. The jets of mixed gas are for preheating the metal and the pure oxygen jet is for cutting. The flow of oxygen to the cutting jet is controlled by a separate valve.

iv. Observe the following precaution in the use of torches:

(a) Select a proper welding head or mixer tip or cutting nozzle (according to charts supplied by the manufacturer) and screw it firmly into the torch.

(b) Before changing torches, shut off the gas at the pressure reducing regulators.

(c) Never reduce pressure by crimping the hose.

(d) To discontinue welding or cutting, proceed as follows:

(1) Close oxygen and acetylene cylinder valves.

(2) Open torch valves to relief all gas pressure from hose and regulator.

(3) Close torch valves and release regulator pressure adjusting screws.

(e) Do not use matches or cigarette lighters to light torches. Use only a friction lighter or stationary pilot flame. When lighting, point the torch tip so no one will be burned when the gas ignites.

(f) Never put down a torch until the gases have been completely shut off. Do not hang torches from a regulator or other equipment.

(g) When extinguishing the flame, close the acetylene and oxygen valve in the order recommended by the torch manufacturer.

(h) Clogged torch tip openings shall be cleaned with suitable cleaning wires, drills, or other devices designed for that purpose.

v. Torches shall be inspected before use for leaking shutoff valves, hose couplings, and tip connections. Defective torches shall be tagged and removed from service.

E. COMPRESSED GAS CYLINDERS

i. All compressed gas cylinders shall be handled with care.

ii. Cylinders shall be stored in an upright position in racks or chained firmly against the wall, or other solid object.

iii. Cylinders containing different kinds of gases shall be separated (flammable or combustible gas cylinders must be separated from oxygen cylinders by a minimum of 20 feet or a 5 foot high noncombustible barrier).

iv. Cylinders shall not be stored near highly flammable materials or sources of heat. Cylinders are not designed to withstand temperatures in excess of 130º F.

v. Never use cylinders as rollers.

vi. When moving a cylinder, use a two wheel hand truck or a gas cylinder sling.

vii. When transporting a cylinder on a vehicle, the cylinder shall be secured to the vehicle. Regulators shall be removed or guarded before a cylinder is transported.

viii. Acetylene and liquefied fuel gas shall be stored and transported in the upright position (valve end up).

ix. When gauges are not attached, the protective cylinder cap shall be kept securely in place.

2. ARC WELDING AND CUTTING

A. GENERAL

i. This section covers arc welding and cutting.

ii. Arc welding is a process for joining metals by heating with an electric arc or arcs with or without the application of pressure and with or without the use of a filler metal. Arc welding is used to fabricate nearly all types of carbon or alloy steels, common, nonferrous metals, and is indispensable in the repair and reclamation of metallic machine parts.

iii. Arc cutting is used only for rough cuts or for scrapping because of the unevenness of the cut obtained.

iv. For arc welding or cutting, one lead is connected to the work and the other to an electrode holder. The work lead (cable) is the most satisfactory means of providing the return (ground) circuit to the welding machine. Operating conditions may require the use of a grounded steel structure.

B. WELDING CABLES, CONNECTORS, GROUND RETURNS, AND MACHINE GROUND

i. All arc welding and cutting cables shall be of the completely insulated and flexible type.

ii. Only cable free from repair or from need of repair shall be used. Repaired cables, or cables in need of repair, shall be reported to the supervisor for replacement.

iii. If connections are affected by means of cable lugs, they shall be securely fastened together to give good electrical contact and exposed metal parts of the lugs shall be completely insulated.

iv. Frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current. Grounding circuits shall be checked to ensure that the circuit between the ground and the grounded power conductor has resistance low enough to permit sufficient current to flow to cause the fuse or circuit breaker to interrupt the circuit.

v. All ground connections shall be inspected to ensure that they are mechanically strong and electrically adequate for the required current.

C. ELECTRODES AND HOLDERS

i. Arc welding is done with either a metallic or carbon electrode. The carbon electrode is usually a solid carbon or a graphite pencil 1/4 inch in diameter or larger depending on the amount of current used.

ii. Electrode holders used for shielded metal arc welding are used to connect the electrode to the welding cable supplying secondary current. Fully insulated holders shall be used.

iii. Always use an electrode holder of the correct size for the electrode used. Dipping hot electrode holders in water shall be prohibited.

D. PROTECTION AGAINST ELECTRIC SHOCK

i. The voltage between the electrode holder and the ground during the "off" arc or "no load" period is the open circuit voltage. The operator shall be properly instructed and shall use the equipment provided for personal protection.

ii. The employee shall keep his body insulated from both the work and the metal electrode and holder. Never permit the bare metal part of an electrode, the electrode insulation or any metal part of the electrode holder touch the body.

iii. Some specific precautions for prevention of electric shock are:

(a) In confined spaces, cover or arrange cables to prevent contact with falling sparks.

(b) Never change electrodes with bare hands or wet gloves or when standing on wet floor or grounded surfaces.

(c) Ground the frame of welding units (portable or stationary) in accordance with the National Electrical Code. With a small unit, a primary cable containing an extra conductor one end of which is attached to the frame of the welding unit shall be used. By means of the proper polarized plug, the ground connection shall be carried back to the permanently grounded connection in the receptacle of the power supply.

(d) If a cable (either work lead or electrode lead) becomes worn exposing bare conductors, it shall be removed from service.

(e) Keep welding cables dry and free of grease and oil to prevent premature breakdown of insulation.

(f) Protect cables that must be laid on the floor or ground so that they will not interfere with safe passage or become damaged or entangled.

(g) Welding cables shall be kept away from power supply cables or high tension wires.

3. ITEMS COMMON TO GAS AND ARC WELDING AND CUTTING

A. GENERAL

i. Welding, cutting, and heating operations shall have suitable mechanical ventilation or respiratory protective equipment.

ii. Personal protective equipment shall be worn at all times (see Item B page 32-7 of this section).

iii. Ventilation is required when welding, cutting, or heating in:

(a) confined spaces;

(b) zinc bearing base or filler metals or metal coated with zinc bearing materials;

(c) lead base metals; and

(d) chromium bearing metals or metals coated with chromium bearing materials.

iv. Ventilation and air line respirators are required when welding, cutting, or heating of the following metals:

(a) metals containing lead other than as an impurity or metals with lead bearing materials;

(a) cadmium bearing or cadmium coated base materials;

(c) metals coated with mercury bearing metals; and

(d) beryllium containing base or filler metals.

v. Objects to be welded, cut, or heated shall be moved to a designated safe location or if the objects to be welded, cut, or heated cannot be readily moved, all moveable fire hazards in the vicinity shall be taken to a safe place.

vi. If the object to be welded, cut, or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine heat sparks and slag and to protect the immovable fire hazards from them.

vii. No welding, cutting, or heating shall be done near the application of flammable paints, or the presence of other compounds or heavy dust concentrations.

viii. Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

ix. When welding, cutting, or heating is performed on walls, floors, or ceilings direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.

x. Empty containers, that have contained flammable equipment shall be removed to a safe area apart from hot work operations or open flames.

xi. Drums, containers, or hollow structures which have contained toxic or flammable substances shall be filled with water or thoroughly cleaned of such substances, ventilated and tested, prior to welding, cutting, or heating.

xii. Before heat is applied to a drum, container, or hollow structure, a vent or opening shall be provided for the release of any built up pressure during the application of heat.

B. PROTECTIVE EQUIPMENT

A. The following is a list of protective equipment that shall be used:

i. Goggles, helmets, and shields that give maximum eye protection for each welding and cutting process shall be worn by the operators, welders, and their helpers. (These items shall conform to ANSI Z87.1 Practice for Occupational and Educational Eye Protection and Z89.1 Safety Requirements for Industrial Head Protection.) The following table is a guide for selecting the correct filter lenses for various welding and cutting operations.

FILTER LENSES SHADE NUMBERS FOR VARIOUS WELDING AND CUTTING OPERATIONS (WELDERS AND HELPERS)

WELDING OPERATION	SHADE NO.
Torch Soldering	2
Torch Brazing	3 or 4
Light Cutting Up to 1"	3 or 4
Medium Cutting 1" to 6"	4 or 5
Heavy Cutting 1" to 6"	5 or 6
Gas Welding (Light) Up to 1/8"	4 or 5
Gas Welding (Medium) 1/8" to 1/2"	5 or 6
Gas Welding (Heavy) Over 1/2"	6 or 8
Shielded or Metal Arc Welding Up to 5/32" Electrodes	10
Shielded Metal Arc Welding 3/15" to 1/4" Electrodes	12
Shielded Metal Arc Welding Over 1/4" Electrodes	14
Gas Metal Arc Welding (Nonferrous)	11
Gas Metal Arc Welding (Ferrous)	12
Gas Tungsten Arc Welding	12
Atomic Hydrogen Welding	12
Carbon Arc Welding	14

(Note: In gas welding or oxygen cutting where the torch produces a high yellow light, a filter lenses that absorbs the yellow or sodium line in the visible light shall be used.)

ii. Flame resistant gauntlet gloves except on very light work.

iii. Apron of leather or other flame resistant material to withstand radiated heat and sparks.

iv. For heavy work, fire resistant leggings, high boots or similar protection.

v. Safety shoes where heavy objects are handled.

vi. High top boots are required during welding operations. Low cut shoes with unprotected tops shall not be worn.

vii. For overhead work, capes or shoulder covers of leather or other suitable material, skull caps of leather or flame resistant fabric shall be worn under helmets to prevent head burns. For overhead welding ear protection (wool or rubber plugs or wire screen protectors) shall be used.

viii. Safety head gear as specified in Section 25 of this manual shall also be required.

SECTION 33 - EXCAVATIONS AND TRENCHING OPERATIONS

1. OVERVIEW

   A. This section covers excavations and trenches.

   B. Proper sheeting and basing (shoring) shall be used to prevent both cave-in and possible soil movement.

   C. Excavations and trenches shall be guarded, barricaded, and/or covered.

   D. Guarding, barricading, and covering shall be performed in accordance with Section 23 - Guarding Work areas.

   E. Attended emergency rescue equipment such as breathing apparatus, safety harness and line, basket stretcher shall be readily available where adverse atmospheric conditions may exist or develop.

2. GENERAL

   A. Utility companies shall be contacted and advised of proposed work prior to the opening of any excavation. Determination must be made as to whether underground utilities will be encountered, and if so, the estimated location of each installation. When the excavation approaches the estimated location, the exact location shall be determined, and the utility uncovered. Proper support shall be provided for each utility installation.

   B. When employees are required to be in trenches deeper than four feet, an adequate means of exit, such as ladder or steps, shall be provided.

   C. All ladders used on excavation operations shall conform to the requirements of Section 29. Ladder tops will be extended at least three feet above ground level, and be placed to require no more than 25 feet of travel between ladders.

   D. Banks more than five feet high shall be shored, braced, laid back to a stable slope, or equivalent means of protection for employees exposed to the potential of moving ground or cave-ins.

   E. Trenches less than five feet shall be effectively protected.

   F. Excavated or other materials shall not be stored nearer than two feet from the edge of the excavation site.

   G. Excavation or other materials shall be stored and retained to prevent them from falling or sliding into the excavation site.

H. Materials used for shoring, bracing or underpinning, shall be in good serviceable condition, free from large or loose knots, and shall be designed and installed to be effective to the bottom of the excavation.

I. Additional precautions by way of shoring shall be taken to prevent slides or cave-ins when excavations or trenches are made in locations subjected to vibrations from railroad or highway traffic, the operation of machinery, or any other source.

J. Cross braces or trench jacks shall be placed in true horizontal position, be spaced vertically and be secured to prevent sliding, falling or kick out.

K. In locations where oxygen deficiency or gaseous conditions are possible, air in the excavation shall be tested and ventilated as specified in Section 34.

L. When flammable gases are present, adequate ventilation shall be provided and sources of ignition shall be eliminated.

M. Portable trench boxes or sliding trench shields may be used for the protection of personnel in lieu of a shoring system or sloping. When such trench boxes or shields are used, they shall be designed, constructed and maintained in a manner which will afford protection equal to, or greater than, the shoring required for the trench.

N. Backfilling and removal of trench supports shall progress together from the bottom of the trench, jacks or braces shall be released slowly. In unstable soil, ropes shall be used to pull out the jacks or braces from above AFTER all employees have cleared the trench.

SECTION 34 - CONFINED SPACE ENTRY

1. GENERAL

   A. This section describes methods of testing for the presence of gases in manholes, unattended buildings with underground utility service and other unventilated confined spaces. Included in this section are the requirements for power ventilation before entry and during occupancy. THE USE OF POWER VENTILATION DOES NOT PRECLUDE THE NECESSITY OF TESTING FOR THE PRESENCE OF GASES.

2. PERMIT

   A. A confined space is defined as a space that is entered through an opening other than a door, or requires the use of a ladder to reach the work level. When these criteria are met, the job site shall be declared "permit required."

   B. A trained supervisor designated by the department, shall complete a confined space pre-entry checklist, page 34-7 (these forms may be copied), prior to filling out a confined space entry permit, page 34-8 (these forms may be copied).

   C. This permit shall be completed, numbered, and posted at the job site prior to entry of the confined space by any employees, and shall remain posted until the work is complete. Copies of the pre-entry checklist and confined space entry permit shall be forwarded for record filing as per department policy.

3. AUTHORIZED ENTRANT

   A. NO employee may enter a confined space unless authorized.

   B. Authorized entrants shall be trained for confined space entry work and shall be aware of the hazards presented, recognize symptoms of exposure and their consequences, and know how to maintain contact with the outside attendant.

   C. Authorized entrants shall read the entry permit and follow all guidelines and procedures listed. Follow lock out procedures to protect against accidental startup of any equipment or power sources, wear personal protective clothing, including retrieval lines and harnesses as specified.

4. ATTENDANT

   A. All confined space job sites shall be monitored by an attendant. The attendant shall remain outside the confined space. The attendant shall be trained, and shall be responsible for the following:

      (i) Entry permit in place.

      (ii) Emergency reporting procedure and emergency contacts.

      (iii) Constant count and contact of every person in the confined space.

(iv) Recognizing, monitoring, and evaluating all hazards.

(v) Ordering site evacuation if hazard evaluation warrants.

B. In the event of an emergency, the attendant shall contact 911, evacuate the job site, close off the area and keep the area free of all non-essential personnel.

Remove victims with harness and other rescue equipment, and utilize CPR and first aid techniques ONLY if trained to do so.

5. PRECAUTIONS

A. Confined space guards and warning devices shall be set up in accordance with Section 23 of this manual.

B. NEVER ENTER A CONFINED SPACE EVEN MOMENTARILY UNTIL IT HAS BEEN TESTED FOR COMBUSTIBLE GAS AND THEN POWER VENTILATED (PURGED) WITH THE BLOWER OPERATING AT THE MAXIMUM RATED SPEED.

C. The blower shall remain in operation during the entire time anyone is in the confined space. Do not operate the blower in any type of enclosure such as a tent, vehicle, trailer, tool cart, etc. Locate the blower in an unconfined space with the blower intake away from traffic and the blower exhaust away from the manhole opening. The blower shall be located a minimum of five feet from the opening to avoid returning purged air into the manhole.

D. Care shall be taken when setting up the blower hose to prevent unnecessary vents or restrictions. Vents or restrictions shall be kept to a minimum to prevent reducing the air output at the end of the blower hose to below the certified rate. During purging (hose in dropped position), the hosing shall extend into the confined space a minimum of one foot below the ceiling and shall be at least two feet above the floor level.

E. UNDER NO CIRCUMSTANCES SHALL A CIGARETTE LIGHTER, MATCH, OR OTHER ITEM THAT PRODUCES A HOT SPARK BE OPERATED OR IGNITED IN A CONFINED SPACE.

F. Any tool producing an open flame or sparks shall be kept away from the blower air intake.

G. Only approved explosion proof lighting and heating equipment shall be used. Connections and disconnections of electric lighting, equipment, etc., shall be made outside the confined space.

H. Storage batteries shall not be brought into a confined space.

6. BLOWER CAPACITIES

A. Confined space ventilation with forced air is necessary to expel hazardous gases that may be present and to maintain an adequate supply of oxygen.

B. The effective blower capacity is defined as the actual blower output in cubic feet per minute (CFM) delivered at the end of the standard blower hose. The tests are made with one 90º bend (continuous ventilation position) in the blower hose and the results are certified by the testing laboratory.

7. BLOWER MAINTENANCE

A. All blower units shall to be cleaned and checked periodically to be sure they are operating at rated capacity. Improper blower operation can cause a reduction in blower motor speed and a reduction in air delivery.

B. Air delivery of electrically powered blowers generally shall not vary from the norm if line voltage and frequency are held at the value for which the motor is designed and there is no damage to the blower components. Air delivery of blowers powered by internal combustion engines will vary appreciably if the engine is not properly maintained and adjusted to operate at the governed engine speed for the manufacturer's specifications.

C. Blowers shall be in good condition. Hoses with leaks, tears, or other damage shall be repaired or replaced as required.

8. SETUPS FOR TESTING AND PURGING MANHOLES

A. Initially test for combustible gas with the end of the sampling tube at head height in the manhole. If this cannot be accomplished by lowering the tube directly into the manhole, a permanent installation of gas sampling tubing shall be provided. The tubing shall be installed with one end at or near the middle of one side wall and at head height away from the direct output of the blower. The other end shall terminate in the manhole entrance and be accessible from a position outside. The entrance shall be equipped with a capped end fitting for attaching the gas indicator and valve for connecting an air chuck to clear the tubing of any residual gas, dirt, or water.

B. Conventional manholes are rectangular in shape and accessed through the manhole roof and have the collar height short enough so that the standard blower hose is adequate in length for purging and for continuous ventilation. Manholes that are smaller than 1,000 cubic feet are purged by opening the manhole cover and dropping the end of the blower hose into the manhole (one 90º bend in the blower hose). Conventional manholes larger than 1,000 cubic feet are purged with two manhole covers removed at opposite ends of the manhole.

C. Irregular shaped manholes often result from enlarging an existing manhole. If the manhole has two floor levels or if it is configured so that air flow is restricted, purge time shall be based on the affected blower capacity with two 90º bends in the hose.

D. Deep neck manholes are defined as those manholes with entry through the roof and with a long collar height so that one 15-foot blower hose is not adequate in length for purging and continuous ventilation. Deep neck manholes shall be purged and ventilated by coupling two standard blower hoses or by utilizing a permanent ventilation duct installed either in the collar or adjacent to the manhole.

E. If the collar height is greater than five feet, the volume of the collar shall be added to the volume of the manhole for determining purge times, per manufacturer's instructions.

F. When purging with a coupled hose, purge time shall be based on the effective blower capacity with two 90º bends in the standard blower hose to compensate for pressure drop in the longer hose.

G. Where permanent ventilating duct is installed, the effective blower capacity with one 90º bend in the blower hose shall be used to determine purge time. Ventilating ducts shall be placed to avoid interference with lines or suction hoses, and to direct the air flow either diagonally across the manhole or along a long dimension of the manhole. A cap or cover shall be provided for the upper end of the ventilating duct when it is not in use. Ventilate by inserting blower hose into the ventilation duct

9. DETERMINING PURGE TIME

A. FOR LARGE MANHOLES, PURGE TIMES MAY BE REDUCED BY USING TWO BLOWERS IF THE MANHOLE HAS TWO ACCESS OPENINGS. WHEN USING TWO BLOWERS, THE SUM OF THE BLOWER CAPACITIES IS USED AS THE EFFECTIVE BLOWER CAPACITY ON THE MANUFACTURER'S ALIGNMENT CHART. ONLY ONE BLOWER HOSE MAY BE PLACED IN ANY MANHOLE ACCESS OPENING IF THE OPENING IS TO BE USED FOR ENTERING AND EXITING.

C. Each manhole shall have its volume in cubic feet recorded on a permanent plastic or metal tag that is secured in the manhole collar surrounded by a patch of high visibility paint. The tag shall be clearly visible without having to enter the manhole.

If a different size cutoff is adopted or blower capacity differ, purge times must be established from the alignment charts.

D. To determine purge times for a manhole that has not been tagged or has the tag missing, obtain the manhole volume from work prints or other records.

E. Continuous ventilation is required after purging to assure a safe working atmosphere.

10. TESTING FOR COMBUSTIBLE GASES AND VENTILATION OF MANHOLES

A. The person making the gas test shall test in a position that will cause a minimum interference with traffic. Plan the work so a minimum amount of time is spent in the traffic area. Complete the confined space pre-entry checklist 34-7 of this section.

B. Every manhole opened after having been closed for any period of time shall be tested for the presence of combustible gas and purged. The initial test shall be made immediately after the manhole cover is removed and before the manhole is purged.

C. An approved gas test kit shall be used to test the gas indicator. The gas indicator shall be tested for proper operation each day before the first manhole test is made, at each change of work shift, if dropped or if exposed to a high concentration of gas. Never test the operation of a gas indicator by sampling the fumes from a tank or can containing gasoline because the high concentration of gas could damage the meter.

D. The initial test for combustible gas using a gas or gas/oxygen detector shall be made as directed in the operation manual for the detector.

E. After completing the initial test, purge the manhole for the appropriate time specified in the alignment charts. NOTE: Removal of water from a manhole may permit gas to flow from the ducts into the manhole; therefore, after purging and before entering the manhole, an additional test shall be made after the manhole has been pumped or a minimum water level reached with continuous pumping.

i. IF THE INITIAL TEST INDICATES AN UNSATISFACTORY ATMOSPHERE in the manhole, make a second test after the blower has operated for the specified purge time. Make the test with the sampling hose away from the direct input of the blower. If this test indicates an unsatisfactory atmosphere, operate the blower for an additional ten minutes and repeat the test. IF ANY GAS IS DETECTED AT THIS TIME, DO NOT ENTER THE MANHOLE.

NOTE: BEFORE ENTERING A DEEP NECK MANHOLE OR AN OFFSET MANHOLE EQUIPPED WITH GAS SAMPLING TUBING, TEST THE ATMOSPHERE IN THE COLLAR AREA JUST BELOW THE MANHOLE COVER LOCATION. MAKE THIS TEST WITH THE BLOWER OPERATING. THIS IS REQUIRED IN ADDITION TO THE TEST OF THE MANHOLE ATMOSPHERE AND EVEN THOUGH THE MANHOLE ATMOSPHERE TESTS CLEAR. THE BLOWER MUST BE IN CONTINUOUS OPERATION WHILE ANYONE IS IN THE MANHOLE.

F. Enter the manhole with the gas indicator and where possible place the blower hose in a horizontal position along the side wall approximately mid way between the floor (or platform) and manhole roof. Direct the blower hose outlet toward an end wall preferably away from the work area. Next, make tests for gas by probing in the area of all duct entrances in corners, crevices, etc., and then generally throughout the manhole. To purge the gas indicator while in the manhole, detach the sampling hose and hold the gas indicator in the fresh air near the end of the blower hose or ventilating duct.

G. For offset access manholes upon entry into the entrance hole, test for gas in the passageway and finally test for gas at the duct entrances and in the corners.

H. If gas is detected, leave the manhole at once. Purge the manhole for an additional ten minutes. Retest the manhole atmosphere from street level. If gas is detected, do not enter. Notify the attendant. If the atmosphere is clear, reenter the manhole and repeat the test in the manhole. If gas is detected after reentering, leave the manhole at once and notify the attendant. If the atmosphere is clear, complete pre-entry testing and permit requirements.

I. After work in any manhole is begun, additional tests must be made as follows:

   i. If duct plugs are removed, immediately test for combustible gas at the ducts that were opened. If gas is detected, leave the manhole at once. Purge at least ten minutes and retest the manhole from street level. If gas is detected, notify attendant. If the atmosphere is clear, reenter the manhole and repeat test. If the gas is detected, leave manhole at once and notify attendant. If the atmosphere is clear, continue the work operation.

   ii. When each crew begins work, repeat test at ducts and throughout the manhole. If gas is detected, leave the manhole at once. Report the condition. At intervals of not more than two hours (every hour if gas was detected initially), repeat the test at ducts and through the manhole. Reduce these intervals by 50% if a tent or other cover is in operation over the manhole. If gas is detected, leave manhole at once and report the condition to the attendant.

J. Continuous gas monitors utilize a dual filament gas detector designed to continuously test the working atmosphere. This type of gas detector eliminates the need to make periodic tests when the manhole is occupied. It can provide an extra measure of security in a manhole that has a history of combustible gas occurrences. The monitor is factory set to trigger an audible and a visual alarm when the gas concentration exceeds 10% LEL. After work in the manhole has begun and the monitor is in use, leave the manhole at once if the alarm shall sound.

K. If the blower shall stop, leave the manhole at once. Remove the blower hose from the manhole. The blower hose shall be kept out of the manhole while the blower is not operating. When the blower is again operating, purge the hose. While purging hose, test the manhole atmosphere. If satisfactory, replace the blower hose and reenter the manhole. If the test is not satisfactory, purge the manhole for at least ten minutes and retest the manhole atmosphere from street level. If the atmosphere tests clear, reenter the manhole and repeat the test in the manhole. If the gas is detected, leave the manhole at once and notify the attendant. If the atmosphere tests clear, continue the work operation.

11. ENTRY INTO OTHER CONFINED SPACES

A. The same testing and atmosphere purging requirements shall apply for entry into other confined space situations such as storage tanks.

B. For entry into confined spaces involving hazardous chemicals, each agency shall establish procedures for notifying the appropriate supervisory and management personnel and obtaining permission from management before entering the confined space. The supervisor directing an activity involving entry into a confined space where hazardous chemicals may be located shall ensure that proper personal protective equipment is provided to all persons who will enter the confined space and for backup personnel located outside the confined space.

That supervisors shall also take steps to ensure that hazardous chemicals are not released into the atmosphere in concentrations greater than those allowed by federal regulations.

CONFINED SPACE PRE-ENTRY CHECKLIST

A confined space either is entered through an opening other than a door (such as manhole or side port) or requires the use of a ladder or rungs to reach the working level. This checklist must be filled out whenever the job site meets this criteria.

		Yes	No
1.	Did your survey of the surrounding area show it to be free of hazards such as drifting vapors from tanks, piping or sewers?	( )	( )
2.	Does your knowledge of industrial or other discharges indicate this area is likely to remain free of dangerous air contaminants while occupied?	( )	( )
3.	Are you certified in operation of the gas monitor to be used?	( )	( )
4.	Has a gas monitor functional test (Pump Test) been performed this shift on the gas monitor to be used?	( )	( )
5.	Did you test the atmosphere of the confined space prior to entry?	( )	( )
6.	Did the atmosphere check acceptable (no alarms given)?	( )	( )
7.	Will the atmosphere be continuously monitored while the space is occupied?	( )	( )

NOTICE: If any of the above questions are answered "No," do not enter the confined space. Contact your immediate supervisor.

JOB LOCATION _____

SUPERVISOR'S SIGNATURE _____ DATE _____

CITY OF LITTLE ROCK CONFINED SPACE PERMIT
THIS PERMIT MUST BE POSTED ON THE JOB SITE - - GOOD ONLY ON INDICATED DATE
PERMIT NO. _____

SPACE TO BE ENTERED _____
PURPOSE OF ENTRY _____
LOCATION OF BUILDING _____

Authorized Duration of Permit Date: _____ to _____ Time: _____ To _____

PERMIT SPACE HAZARD (includes specific hazards with initials)

_____ Oxygen (deficiency (less than 19.8%)
_____ Oxygen enrichment (greater than 23.5%)
_____ Flammable gases or vapors (greater than 10% of LFL
_____ Airborne combustible dust (meets or exceeds LFL)
_____ Toxic gases or vapors (greater than PEL)
_____ Mechanical hazard
_____ Electric shock
_____ Materials harmful to skin
_____ Engulfment
_____ Other _____

EQUIPMENT REQUIRED FOR ENTRY AND WORK (specify as required)

Personal Protective Equipment _____
Respiratory Protection _____
Atmosphere Testing/Monitoring _____
Communication _____
Rescue Equipment _____
Other _____

COMMUNICATION PROCEDURES (to be used by attendants and entrants: _____

AUTHORIZED ENTRANTS (list or attach roster): _____

AUTHORIZED ATTENDANTS (list by name): _____

PREPARATION FOR ENTRY (check after steps have been taken)

_____ Notification of affected departments of service interruption.

ISOLATION METHODS:

_____ Purge/clean
_____ Atmospheric test
_____ Lockout/Tagout
_____ Inert
_____ Barriers
_____ Blank/blind
_____ Ventilate
_____ Other _____

PERSONNEL AWARENESS:

_____ Pre-entry briefing on specific hazards and control methods.
_____ Notify contractors of permit and hazard conditions.
_____ Other _____

ADDITIONAL PERMIT (required and/or attached)

_____ Hotwork
_____ Line Breaking
_____ Other _____

EMERGENCY SERVICE

Name of Services _____ Phone #: _____ Method of Contact _____

TESTING RECORD

Time	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM
Oxygen-min						
Oxygen-max						
Flammability						
H2S						
Toxic (spec)						
C12						
C0						
SO2						
Heat						
Tester (Unit)						

AUTHORIZATION BY ENTRY SUPERVISOR (I certify that all required precautions have been taken and necessary equipment is provided for the safe entry in this confined space.)

PRINT NAME _____ Signature _____ Date _____ Time _____

LEAVE NO BLANKS - USE THE NOTATION N.A. (NOT APPLICABLE) WHERE APPROPRIATE

SECTION 35 - EMERGENCY DISASTER PLANNING

1 GENERAL

A. This section outlines emergency and disaster planning for City of Little Rock facilities. For more detailed information, refer to the City of Little Rock Emergency Operations Plan.

B. The goal of emergency disaster planning is to:

i. Provide for the safety of employees and visitors.

ii. Minimize damage or loss of City property and assets.

iii. Return to normal operations as soon as possible after an emergency.

C. An emergency is defined as a sudden or unexpected occurrence or combination of occurrences demanding prompt attention.

D. A disaster is defined as any great misfortune or calamity.

E. Buildings designated as primary work areas shall have an emergency action fact sheet and a written emergency and disaster plan. (A primary work area is a building which one or more employees spend eight or more hours per day.) The emergency action fact sheet shall contain the following:

i. The name of the building and the building address.
ii. Department of assigned work group.
iii. Names of work group members.
iv. Name of emergency planning coordinator and telephone.
v. Name of deputy emergency planning coordinator and telephone.
vi. Name of the work group supervisor and telephone number.
vii. Date of verification of the following emergency telephone numbers: Fire Department, Emergency Medical Service, Police, and available medical attention.
viii. If primary and alternate fire exit routes cannot be described in the space provided, attach fire exit plan.
ix. Date fire extinguisher volunteers were appointed, names of three fire extinguisher volunteers and the latest date each volunteer received fire extinguisher training.
x. Worker group rendezvous point and date this point was selected.
xi. Worker group alternate rendezvous point and date this point was selected.
xii. Location of tornado shelter within the building.
xiii. Name of head count appointee, alternate head count appointee and date appointed.
xiv. Date of latest annual worker group emergency action plan briefing and the initials of the supervisor conducting the group.

F. Emergency and disaster plans shall contain provisions to maintain essential operations during emergencies or disasters.

G. Supervisors shall review and update emergency action fact sheets and emergency disaster plan annually. This information shall be readily accessible to all employees.

H. Supervisors shall conduct a disaster briefing for all employees annually using the emergency action fact sheet and emergency plan. Attendance at these sessions shall be recorded.

I. Following a disaster or emergency, the supervisor shall account for personnel. An assembly area shall be designated for this purpose.

J. The supervisor shall ensure that first aid is available and administered to injured personnel and that medical assistance is secured as soon as possible.

K. During emergency or disaster situations the highest level supervisor shall coordinate action with fire, law enforcement, civil defense, or other emergency action agencies.

2. MEDICAL EMERGENCIES

A. The first line of defense when injuries or illnesses occur is to have employees trained in first aid.

B. First aid is defined as the immediate care given to a person who has been injured or has been suddenly taken ill.

C. When an injury or sudden illness occurs and a stricken employee needs assistance, contact a first aid trained employee and the Emergency Planning Coordinator or Deputy Coordinator.

<u>NOTE: IF ADVANCED FIRST AID IS NEEDED, CONTACT APPROPRIATE EMERGENCY SERVICE AGENCY.</u>

D. Injured or ill employees requiring more than basic first aid shall be taken to the emergency medical services system as soon as possible.

E. In the event of a disaster, the response time for emergency medical personnel shall increase. In all cases, first aid trained employees will provide first aid care until professional medical personnel arrive to take charge.

3. FIRE

A. Personnel are required to know how to operate the fire alarm system, the location and operation of fire extinguishers and procedures for handling an incident in their area.

B. Fire plans shall be posted on bulletin boards throughout the building.

C. The supervisor shall designate personnel to operate fire stand pipe hoses where available. These personnel shall receive initial fire fighting training and complete refresher training annually.

D. On discovery of a fire which is minor in nature (confined to a wastebasket or trash receptacle) and where no lives are endangered, extinguish the fire with the equipment at hand; keep in mind all fires are a threat and are dangerous and shall be reported immediately. NEVER enter a smoke filled room except when necessary to save a life. Never open doors or windows as this creates a draft that spreads and intensifies the fire.

E. Only one thing comes ahead of reporting a fire, if lives are endangered by being in the area of the fire, evacuate to a place of safety. Then report the fire by dialing 911. Evacuation is extremely important and must be done immediately by the person discovering the fire or who has reason to think there is a fire developing due to smoke, fumes, overheating, or unusual odor.

F. Any person discovering or suspecting a fire shall immediately transmit an alarm by tripping the nearest fire alarm box on the interior fire alarm system and call the Fire Department.

G. All fires regardless of size or scope shall be reported.

H. In case of fire or explosion, the supervisor shall meet the first fire unit arriving on the scene giving information on the location of the fire, type of fire, and scope of the fire.

I. When a fire alarm is sounded, all personnel shall immediately evacuate the building by closest stairwell or fire tower. Never in any fire situation shall anyone use an elevator as a means of evacuation. All personnel will proceed to a designated area or parking lot. An accurate count of employees in each department shall be made by the supervisor. If any person is not accounted for, the Fire Department shall be notified immediately.

J. All areas shall be checked when evacuating the buildings (closets, clothes rooms, rest rooms) to ensure no one has been left in the building. No one shall be allowed to reenter the building until a Fire Department official gives permission to reenter.

4. NATURAL DISASTER/WEATHER WARNINGS

A. It is critically important that City employees respond to natural disaster warnings and take appropriate precautions.

B. The City Office of Emergency Services is responsible for monitoring the National Weather Service forecast and weather warnings. The appropriate OES supervisor will determine when warning sirens are to be activated.

C. The National Weather Service is responsible for issuing weather warnings to the public. Fair weather warnings are issued using the following terms:

i. Severe thunderstorm - Indicates the possibility of frequent lighting, damaging winds of greater than 50 mph, hail 3/4 inch or more in diameter, and heavy rain.

ii. Severe thunderstorm watch - Indicates the possibilities of tornadoes, thunderstorms, frequent lighting, hail and winds of greater than 75 mph.

iii. Tornado watch - Means that tornadoes are expected to develop.

iv. Tornado warning - Means that a tornado has actually been sighted in the area or is indicated by radar monitoring.

v. Flash flood warning - Means that due to heavy rains, water flow may become immediately hazardous to the public.

D. Supervisors are responsible for being aware of weather conditions which may produce hazardous situations. When weather or other disaster warnings are issued, supervisors shall notify personnel of the hazardous situation and steps to be taken to protect employees.

5. TORNADOES

A. Upon receiving notification a tornado warning has been issued covering the location, the supervisor in charge shall:

i. Secure loose materials outside and in work areas.

ii. Direct employees performing duties outside to proceed to designated indoor work stations.

iii. Move all employees to designated shelter areas when circumstances dictate.

iv. Monitor the situation until danger has passed. Direct employees back to normal duties when the hazard is removed.

B. Tornadoes are violent local storms with whirling winds of tremendous speed that reach 200 to 400 mph. The individual tornado appears as a rotating funnel shaped cloud which extends toward the ground from the base of a thundercloud. It varies from gray to black in color. The tornado spins like a top and may sound like the roaring of an airplane or locomotive. These small short-lived storms are the most violent of all atmospheric phenomenon and over a small area are the most destructive.

C. The width of a tornado path ranges generally from 200 yards to one mile wide. They travel 5 to 200 miles along the ground at speeds of 30 to 75 mph. Tornadoes sometimes double back or move in circles, some may remain motionless before moving on. They have struck in every state, but the principal areas of frequency are in the middle plains and southeastern states.

D. When a tornado strike is imminent, take the following action:

i. In open country - Seek inside shelter if it is close by and time permits. If there is not time to escape, lie flat in the nearest depression such as a ditch or ravine. A parked car is unsafe as a shelter during a tornado or severe windstorm. However, as a last resort if no ravine or ditch is nearby, a car may provide some shelter from flying debris by crawling under it. Do not remain inside the car as the tornado approaches.

ii. In office buildings - The basement or an interior hallway on a lower floor of an office building is safest. Upper stories are unsafe. If there is not time to descend, a closet or small room with stout walls (such as bathrooms) or an inside hallway will give some protection against flying debris. Otherwise, getting under a heavy object must suffice. Select and mark shelter areas in office buildings, train building employees to direct the occupants to them.

iii. In factories, auditoriums, and other large buildings with wide free span roofs - Buildings of this type are particularly vulnerable to tornado wind damage due to the large roof expanse upon which the wind force may act and also the relatively large area between roof supporting walls. Basements of these buildings offer reasonably good protection as do smaller interior rooms at ground level or nearby sturdy buildings.

iv. In homes without basements - Take cover in the smallest room with stout walls or under heavy furniture or a tipped over upholstered couch or chair in the center part of the house.

v. STAY AWAY FROM WINDOWS, DOORS, AND OUTSIDE WALLS! AND PROTECT YOUR HEAD!

6. EARTHQUAKES

A. Earthquakes are unpredictable and strike without warning. They may range in intensity from slight tremors to great shocks; and may last from a few seconds to as much as five minutes. Earthquakes can occur in a series over a period of several days. The actual movement of the ground in the earthquake is seldom the direct cause of injury or death. Most casualties result from falling debris. Quakes can disrupt power and telephone lines as well as gas, sewer, or water mains. They may also trigger landslides and generate tidal waves.

B. If an earthquake occurs:

i. During the tremor, employees shall be warned to stay indoors if already there; take cover under sturdy furniture such as work tables or desks; stay near the center of the building; stay away from glass windows and doors; do not run through or near buildings where there is a danger of falling debris. If employees are outside, they shall stay in the open away from buildings and utility wires.

ii. After the tremor, employees shall stay out of damaged buildings; an aftershock can cause these to fall. The supervisors shall check utilities. If water pipes are damaged or electrical wires are shorted, they shall be turned off at the primary control point. If gas leakage is detected, the main valve shall be shut off, windows opened, and the building cleared until officials say it is safe.

7. FLOODS

A. Except in the case of flash flooding, the onset of most floods is a relatively slow process with adequate warning. The buildup usually takes several days. Progressive situation reports are available from National Oceanic and Atmospheric Administration (NOAA) through its weather service river forecast centers and river district offices.

B. Flash flood warnings are the most urgent type of flood warning issued. These are transmitted over the public radio and television systems. They are also transmitted to law enforcement and civil defense personnel.

C. When possible, try to protect buildings by erecting temporary sandbag levees.

D. Flash flood safety rules:

i. Keep alert for signs of heavy rain both where you are and upstream.

ii. Be especially cautious at night. It is hard to recognize the danger then.

iii. Know where high ground is and how to get there quickly.

iv. Evacuate when flooding is imminent.

v. Don't try to out race a flood on foot. If you see or hear it coming, move to higher ground as fast as you can.

vi. Never try to drive or walk across flooded areas.

8. TRANSPORTATION ACCIDENTS

A. Almost every organization is exposed daily to the possibility of air, automobile, railroad, or shipping accidents in or near facilities. Supervisors shall be prepared to handle the type of problems they have to face in the event of a major transportation accident.

B. Since not all locations have the same exposure nor the same resources to handle such emergency, each department shall develop its own specific plan of action.

C. Major transportation accidents often cause chemical spills, fires, explosions, and other dangerous results which call for special operations such as rescue and evacuation. Transportation accidents usually effect only relatively small areas and involve only a small number of people.

D. An airplane crash will create the need for fire fighting and other operations in the area of impact.

E. An automobile crash involving buses or carriers of hazardous cargoes can involve substantial rescue, fire fighting, and evacuation operations.

F. A railroad accident can produce hazardous situations particularly if the cargo is flammable or explosive. This can also involve substantial rescue, fire fighting and evacuation operations.

G. Regardless of the type of transportation accident, the first consideration shall be to save lives.

H. In the event of any transportation accident, the City's Office of Emergency Services, the Central Communications Center, shall be notified immediately by dialing 911.

9. BOMB THREATS

A. Compared with other emergencies, the covert and criminal nature of bombing incidents make bomb threats a highly complex problem for management and emergency service personnel.

B. Experience shows that over 95% of all written or telephone bomb threats are hoaxes. However, there is always a chance that a threat may be authentic. Appropriate action shall be taken in each case to provide for safety of employees, the public, and City property; and to locate the suspected explosive device so it can be neutralized.

C. If a bomb threat is received by phone, every effort shall be made to copy the exact words of the callers. Special attention shall be paid to background noises, any accent, or some clue as to the identity of the individual.

D. No argument is to be conducted on the telephone. The employee receiving the call shall take the exact message and give the information to the supervisor in charge. The supervisor shall follow procedures as outlined for decisions regarding the need for evacuation of any facility.

E. The City Manager will decide whether evacuation is necessary or expedient. For the safety of employees and the public, this decision shall be made promptly and quickly disseminated to all departments located in the affected buildings.

F. Police and Emergency Services personnel immediately shall be notified so that experienced personnel may be dispatched to search and determine the validity of the threat by dialing 911.

G. In-house personnel familiar with the building or office shall, upon request, assist the authorities with the investigation.

H. Law enforcement authorities shall arrange for disposal of objects located and found to be bombs or assumed to be bombs.

APPENDIX I
DEPARTMENTAL SAFETY PROCEDURES

Safety procedures and personal protective equipment specific to a single City department or section may be defined and enforced by that department. A copy of Standard Operating Procedures and/or Department Policy and Procedure Statements are to be forwarded to the Personnel Department for inclusion in the master file of this document.

Examples of this include but are not limited to:

Sharps Disposal - Fire Department
Minimum Standards for Turnout Gear - Fire Department
Pursuit Policies - Police Department

APPENDIX II
HAZARD COMMUNICATION PROGRAM

1. PURPOSE

To make training and information concerning hazardous chemicals available to City employees to enable them to minimize their exposure to such chemicals and to protect their health, safety, and welfare.

This program applies to all work operations where City employees may be exposed to hazardous substances under either normal conditions or during foreseeable emergency situations.

2. PERSONNEL DEPARTMENT RESPONSIBILITIES

The Personnel Department is responsible for:

- developing and implementing the overall safety and hazard communication programs;

- providing technical assistance to department and agency directors, as may be needed;

- providing training to all employees who may come in contact with hazardous chemicals during normal operations or in foreseeable emergencies. This training will be provided:

  at the time of initial employment
  at least annually thereafter

- maintaining an up-to-date consolidated list of all hazardous substances used by City employees;

- obtaining or preparing and maintaining an up-to-date master Material Safety Data Sheet (MSDS) file. The file shall contain an MSDS for every hazardous substance used or stored by City employees in any one location in excess of 55 gallons or 500 pounds; and

- periodically and on request conducting safety audits to ensure compliance with the provisions of the program.

3. MANAGEMENT AND SUPERVISORY RESPONSIBILITIES

Department and Agency Directors, managers, and supervisors are responsible for developing and implementing site specific Hazard Communication Programs to include the following:

- consulting with the City's Loss Prevention/Safety Specialist, and current MSDS's to ascertain the specific nature and extent of the risks involved in exposure to each hazardous substance;

- determining the proper safety precautions to be used in each case;

- reviewing and updating all operating procedures to ensure they reflect safe practices;

- ensuring all safety equipment is in place, and all incoming and outgoing hazardous substances are properly labeled;

- compiling, maintaining, and making available an up-to-date list of all hazardous substances in the workplace;

- obtaining or preparing and maintaining an up-to-date Material Safety Data Sheet (MSDS) for every hazardous substance used by employees or stored in each separate geographic work area in excess of 55 gallons or 500 pounds. A copy shall be kept in a location accessible to employees and available for employees to utilize. Duplicate copies shall be forwarded to the Loss Prevention/Safety Specialist, Department of Personnel;

- informing outside contractors of the hazards to which their employees may be exposed while working at a City owned/operated facility;

- providing specific training to employees who will come in contact with known hazardous chemicals during normal operations or in any foreseeable emergency. This training shall be provided at the time of initial assignment or employment and when the employee may be exposed to a different hazardous substance or when a new hazard is introduced in the work area. Duplicate copies of training lists shall be forwarded to the Loss Prevention/Safety Specialist, Department of Personnel;

- ensuring that all employees are following proper operating procedures and taking appropriate safety precautions;

- ensuring that all containers of hazardous substances and any hazard areas are properly labeled and marked;

- ensuring that appropriate safety equipment is available and that personal protective equipment is worn in accordance with established policy and approved safety procedures;

- ensuring that appropriate monitoring and emergency equipment is in place and functioning properly;

- ensuring that hazardous materials are properly labeled and stored; and

- ensuring that all passageways, doors, and emergency exits are clear and free of trash and debris.

4. EMPLOYEE RESPONSIBILITIES

All employees are responsible for workplace safety. Requirements for job safety include:

- following all established work practices and operating procedures for handling and storage of hazardous materials;

- using personal protective equipment as required by City safety procedures;

- using approved labels - LABELS MUST NOT BE REMOVED FROM CONTAINERS;

- using approved containers for hazardous materials;

- knowing the location and proper utilization of emergency equipment, including first aid supplies, emergency eye wash, shower equipment, etc.; and

- informing supervisors of:

    - any accident,
    - any symptoms that may be related to exposure to hazardous substances,
    - missing or illegible labels on containers of suspected hazardous substances,
    - malfunctioning safety equipment,
    - improperly stored containers, and
    - unsafe work conditions or practices.

Any employee shall be subject to disciplinary action, up to and including termination of employment for failure to comply with the City of Little Rock's stated safety practices and procedures.

5. EMPLOYEE TRAINING

Employee training is a vital part of the Hazard Communication Program.

The objectives of the training program are to provide City employees with practical, understandable information about hazardous chemicals in the workplace and procedures to protect themselves from overexposure to those hazardous chemicals.

TRAINING WILL BE:

- conducted in accordance with the Occupational Health and Safety Administration (OSHA) Hazard Communication Standard; and

- provided to every employee who may be exposed to hazardous chemicals under normal operating conditions or foreseeable emergencies.

NOTE:

Refresher training shall be provided on an annual basis.

Special training sessions shall be conducted within 30 days of introduction of a new hazardous chemical into the work area.

Newly hired, transferred or promoted employees shall receive specific job-related training within 30 days of placement into a new job and prior to working in a work area containing hazardous materials.

Additional training shall be conducted as needs are identified.

A. TRAINING PROCEDURES FOR SPECIFIC TASKS

The following procedures shall be followed for each process that involves a hazardous chemical:

- Management or supervisory personnel shall identify all activities that involve hazardous chemicals.

- Departments shall review each activity involving hazardous chemicals to ensure that it is reasonably safe. New procedures will be implemented, as needed, to increase safety for employees. Each activity shall be reviewed periodically to determine whether the hazardous chemical can be removed from the process or replaced with one that is less hazardous.

- Each activity, involving hazardous chemicals, shall be broken down into steps, and each step evaluated for safety procedures to be taught by departmental supervisors to each employee assigned to that activity step.

B. CONTENTS OF CITY TRAINING PROGRAM

The training program shall consist of:

- Formal training sessions provided by the Loss Prevention/Safety Specialist, Department of Personnel.

- On-the-job training specifically related to employees in a specific work area. This training shall be provided by supervision.

The training program shall provide instruction covering:

- the OSHA Hazard Communication Standard,
- the State of Arkansas' "Employee Right to Know" Act,
- the contents, location, and availability of the City of Little Rock's Hazard Communication program,
- the hazardous chemicals in each work area,
- the specific physical or health hazard posed by those chemicals and the symptoms of overexposure,
- methods of detecting the presence or release of these chemicals in the work area,
- safe handling and storage procedures for chemicals used in both routine and non-routine tasks,
- protective measures employees shall take to protect themselves from those hazards, including safe work procedures and protective equipment, first aid, and emergency procedures,
- general safety instructions on the handling, cleanup, and disposal of hazardous chemicals,
- details of the City's hazardous materials labeling system, and hazards of chemicals in labeled and unlabeled pipes,
- how to read, interpret, and use the information found on MSDS's, and
- emergency reporting procedures.

Employees who perform non-routine tasks (tasks not a part of their normal job or tasks that are incidental to their job but involve exposure to hazardous chemicals) shall be provided training covering the:

- specific hazards of the task
- proper operating procedures
- appropriate safety precautions (i.e., monitoring equipment, protective equipment, etc.)

This training shall be provided to all employees who perform tasks such as:

- fueling vehicles: gasoline, diesel and propane
- welding (not primary job task)
- copy machine maintenance/servicing
- transporting hazardous chemicals (not primary job task)
  e.g. (Police Department Crime Scene Unit, Little Rock Wastewater Utility, etc.)

Laboratory Employees - All laboratory employees shall be given special training in handling and storing hazardous chemicals found in the laboratories. If the aggregate total of hazardous chemicals stored in the work area exceeds either 55 gallons or 500 pounds, an MSDS will be retained for each hazardous chemical.

Laboratory supervisory personnel are responsible for ensuring that:

- labels on incoming containers of hazardous chemicals are neither removed nor destroyed; and

- all MSDS's received with incoming chemicals are kept, made accessible to laboratory employees on every shift, and a copy provided to the Loss Prevention/Safety Specialist, Personnel Department.

UNLABELED PIPES - All employees who work in areas where there are unlabeled pipes that contain hazardous chemicals (natural gas, etc.) shall be given specific training as to:

- which pipe(s) contain hazardous chemical
- the nature of the chemical and how to protect against over exposure

C. TRAINING RECORDS

Records of employee participation in HAZCOM Training shall be maintained by the department or agency. A duplicate record of attendance at HAZCOM training sessions shall be provided to the Loss Prevention/Safety Specialist, Personnel Department. Records shall include as a minimum the name of the employee, department or agency, type of training, and the date(s) conducted.

6. LABELING HAZARDOUS CHEMICALS IN THE WORKPLACE

Department or Agency Directors and managers are responsible for ensuring that all hazardous chemicals in the workplaces under their jurisdiction are labeled, tagged, or marked with at least the following information:

- the identity of the chemical in the container, and

- the appropriate hazard warnings such as "corrosive," "toxic," "explosive," "flammable," "irritant," and "eye irritant."

The labels shall be legible, written in English, and prominently displayed or readily available. Hazardous chemicals brought into the workplace shall not be relabeled. All labels on incoming containers shall include the following information:

- Identity of the Hazardous Chemical
- Appropriate Hazard Warnings
- Name and Address of Manufacturer, Importer, or Other Responsible Party

A. EXEMPTIONS TO THE LABELING REQUIREMENT

PORTABLE CONTAINERS used to carry hazardous chemicals from a labeled container to a job site need not be labeled if the employee who pours the chemical into the portable container is the same employee who will use the chemical on the job, and the container will be emptied prior to the end of the employee's shift. If any other employee uses the portable container, it shall be labeled.

STATIONARY PROCESS CONTAINER such as holding tanks shall be clearly identified and the required information included. Signs, placards, process sheets, batch tickets, or operating procedures may be used instead of individual labels. This information shall be accessible to all employees in that work area during every shift.

NOTE; Food and beverages and ingredients subject to FDA labeling requirements are exempt from labeling under the Hazard Communication Standards.

NOTE; Hazardous chemicals regulated under the Federal Insecticide, Fungicide, and Rodenticide Act 7, United States Code 136 et seq., or the Arkansas Pesticide Control Act, Arkansas Code 2-18-401 et seq., shall have the chemical common name labeled on any permanent or portable container into which such chemical is transferred.

7. MATERIAL SAFETY DATA SHEETS (MSDS)

An MSDS shall be obtained and maintained by the Department or Agency Director for every hazardous substance brought into any workplace or work area of the City of Little Rock. A copy of each MSDS shall be provided the Loss Prevention/Safety Specialist, Personnel Department.

The contents of each MSDS will be updated when appropriate and shall conform with the requirement of the Federal Hazard Communication Standard.

The following procedures shall be followed with regard to Material Safety Data Sheets (MSDS):

- An MSDS shall accompany delivery of any new hazardous chemical purchases. If an MSDS has not been provided by the chemical manufacturer or distributor at the time the chemicals are received at the workplace, the Department/Agency Director shall request one in writing from the manufacturer or distributor within five (5) working days.

- A copy of the current MSDS on each Hazardous Substance shall be kept on file and readily available, upon request, to employees and their designated representatives. A copy shall be provided to the Loss Prevention/Safety Specialist, noting the department, agency, or facility (WORKPLACE) and specific WORK AREA (i.e., sign shop, tool room, etc.). Copies of the MSDS's shall be accessible at the workplace, the work area, to all employees, and in the safety/loss department. Every employee shall be informed as to the location of the MSDS's.

- An MSDS for a hazardous chemical which is a mixture may be an MSDS for each element or compound which is hazardous or an MSDS for the mixture itself.

- If more than one mixture has the same element or compound, only one MSDS for that element or compound is necessary.

- A cross-reference index shall be maintained at City and department or agency level listing both the common and the chemical names of each hazardous chemical.

- If an MSDS for a hazardous chemical is not readily available upon request, an employee or his designated representative may submit a written request for the MSDS to the Department or Agency Director. The Director, within three working days, shall either furnish a copy of the requested MSDS; or demonstrate to the employee that an effort has been made to obtain one.

- If after two (2) weeks (from receipt of written request), an MSDS cannot be provided, the employee cannot be made to work with the hazardous material until an MSDS is provided unless:

    - the manufacturer furnishes a written statement that the substance is not a hazardous material (as defined by Arkansas Statute);

    - the Director demonstrates through no fault of his own an MSDS cannot be obtained from the manufacturer; and

    - the Director shows that the MSDS will be provided within one (1) additional week. The employee shall not be required to work with the hazardous chemical if the MSDS is not furnished by the date specified.

An employee declining to work with a hazardous chemical (as defined by Arkansas Statute), cannot be penalized. Reassignment to other work, at equal pay and benefits, shall not be considered a penalty.

NOTE: In an emergency or during an OSHA inspection, supervisors shall be able to find all pertinent "Right to Know" documents and the written Hazcom Program file shall be available; therefore, a copy of each MSDS shall be on file and accessible at the workplace, the work area, and in the Personnel Department.

WORKPLACE - the department, agency, or facility where hazardous chemicals may be used. For example: Rebsamen Park, Central Fire Station, East Little Rock Complex.

WORK AREA - the specific location within a department, agency, or facility where hazardous chemicals may be used or stored. For example: Maintenance Shed, Rebsamen Park; Equipment Room, Central Fire Station; Health Clinic, Nathaniel Hall Complex.

8. INDEPENDENT CONTRACTORS

Examples of "independent contractor" employees as defined in 29CFR 1910.1200 (e)(1)(iii) are:

- Custodial Services
- Construction Personnel
- Repair Personnel
- Consultants

A. HAZARD WARNING

Any independent contractor who has employees working in any facility owned or operated by the City of Little Rock who may be exposed to hazardous substances during normal operations or in the case of foreseeable emergencies shall be notified by the Department or Agency Director responsible for the contract. A sample "Independent Contractor Notification" form is found on Page 9 of this appendix. (This form may be reproduced.)

The independent contractor shall be informed as to the nature of the hazards to which the contractor's employees are potentially exposed and measures they shall take to protect themselves from these hazards. The contractor or his representative will acknowledge receipt of this information on an "Independent Contractor Acknowledgment" form. A sample is found on Page 10 of this appendix. (This form may be reproduced.)

If requested, and considered appropriate by the Department or Agency Director, Hazard Communication Training shall be provided to independent contract employees, as needed.

B. PROCEDURES FOR CONTRACTOR NOTIFICATION

An Independent Contractor Notification form will be delivered to the contractor prior to the beginning of work at a location or facility owned or operated by the City.

When work is scheduled to begin at a location or facility owned or operated by the City, the Department or Agency Director shall designate a representative to meet the contractor or his representative on his arrival at the worksite and complete the requirements listed on the Independent Contractor Acknowledgment form.

INDEPENDENT CONTRACTOR NOTIFICATION

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

_____

_____

This is to inform you that your employees may be exposed to hazardous substances as defined by OSHA Hazard Communication Standard 1900.1200, while working under contract with the City of Little Rock.

Enclosed is a list of the hazardous substances to which your employees may be exposed while working in the following location:

Workplace/Worksite _____

Address/Description _____

_____

_____

Work Area _____

If your employees/workers will be bringing any hazardous substances, as defined by OSHA, please notify the person named below as soon as possible but prior to the introduction of the hazardous substance into our workplace/worksite.

Please advise your employees/workers to read and follow all safety and hazard communication standard signs and labels.

Should you desire any additional information, please contact me.

Signed: _____

Title: _____

cc: Loss Prevention/Safety Section
Personnel Department
City of Little Rock

Enclosure: Hazardous Chemical List

INDEPENDENT CONTRACTOR ACKNOWLEDGMENT

Upon arrival at the Worksite: A representative of the City of Little Rock Department or agency responsible for the contract shall:

- meet the contractor or his representative and escort them to the work area;
- inform the individual of the identity and location of any hazardous materials in the work area to which they may be exposed while in the workplace;
- inform the individual of the location of the Written Hazard Communication Plan and appropriate MSDS's;
- inform the individual of any precautions that should be observed concerning the hazardous materials;
- inform the individual what shall be done in case of accident or other emergency; and
- have the contractor or his representative sign the following:

A C K N O W L E D G E M E N T

I hereby acknowledge that I have been provided with the above information in accordance with the OSHA Hazard Communication Standard and the State of Arkansas Act 1172 of 1991.

_____ _____
Contractor Date

_____ _____
City of Little Rock Representative Date

cc: Loss Prevention/Safety Section
Personnel Department
City of Little Rock

APPENDIX III

SAFETY REPORTS

WORKERS' COMPENSATION

REPORTING FORMS