

**SOUTHWESTERN OKLAHOMA
STATE UNIVERSITY**

SAFETY MANUAL

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SWOSU Safety Credo

POLICY STATEMENT

Safety is of primary importance in our operations and an integral part of Southwestern Oklahoma State University. Each of us has the responsibility to make the safety of ourselves and our co-workers a basic concern. This objective is fundamental to our well being, as well as the effective operation of SWOSU. This manual is intended to assist us in performing our work safely. With few exceptions, every safety rule or practice in this manual has evolved from experience and knowledge gained over many years in how to prevent accidents and injuries.

As helpful as they are, safety rules alone cannot prevent accidents. The indispensable ingredients of a safe working environment are management commitment, a knowledgeable supervisory staff, an involved safety leader and a conscientious work force, where each individual is dedicated to the principle that accident prevention is an essential part of the planning and execution of every job.

Southwestern Oklahoma State University management recognizes its responsibility to provide healthful and safe working conditions, safe working rules based upon experience and safety knowledge and competent work direction.

Every employee has the responsibility to prevent accidents and injuries by observing established working rules, by following the direction of supervisors, by practicing the principles taught in safety training, and by providing ideas on how our safety efforts might be further strengthened. SWOSU and its employees have the responsibility to comply with all federal, state and departmental regulations related to safety and health programs. An effective Safety Program extends beyond normal working hours and, accordingly, safety in employees' and their families' off-the-job activities is encouraged.

Contractors performing work on SWOSU premises shall be required to comply with health and safety laws and regulations and to adopt safety practices equivalent to those applicable to SWOSU employees.

This manual has been prepared to serve as a general guide for university employees in the performance of their duties and is not intended to outline all the jobs and varied details in the course of university operations. All department and area safety policies remain in effect and will be adhered to by university employees. The material in this safety manual outlines both general and specific safety responsibilities and procedures for all levels within the university.

The SWOSU Program is designed to minimize accidents caused by manpower and monetary losses to university employees and equipment. The success of a safety program is dependent on the quality of support and leadership rendered by all levels of management and the safety working practices of all employees.

SECTION 1

GENERAL SAFETY RULES

INTRODUCTION

To The Employees Of Southwestern Oklahoma State University

Always keep in mind that your primary responsibility as an employee is to perform your duties in a safe manner in order to prevent injury to yourself or to your co-workers. You should become familiar with the contents of this manual and must learn the approved safety practices applicable to your work, and observe them at all times. Before undertaking special operations, you should review the appropriate section of this manual in detail.

Each employee should maintain an active interest in the safety program. Each work group is required to actively participate in the safety program. Daily five minute safety meetings and periodic one hour safety meetings at the work locations are encouraged. Give your undivided attention to the on-the-job safety discussions which your supervisor may use to prepare you for new or hazardous work. Ask for an explanation of points which you do not understand thoroughly.

Failure to observe applicable safety rules could result in serious injury to you or a fellow employee. For this reason, unsafe work practices may result in discipline and/or including termination if warranted.

GENERAL PRINCIPLES

1. Adequate rest, exercise and proper diet will enhance your health and level of awareness which is helpful in avoiding accidental injury.
2. Be alert to hazardous conditions, whenever possible, correct or eliminate the hazardous condition yourself.
3. Report to your supervisor all such hazards and the measures you have taken to correct them. Each work group should use a system for reporting and documenting hazards. Documentation should describe the hazard and give its location. Responsibility for remedial action should be assigned. If a hazard cannot be corrected immediately, clearly mark the hazard area until it can be corrected. Personnel coming on duty must be informed of any changes or conditions that might present a hazard. Look for the other person whose actions might cause accidents. Employees should yield to prevent accidents.

3. You must report promptly to your supervisor any injury you sustain while at work. You must report all state owned, leased or rented vehicle and/or job-related automotive accidents, major or minor, as soon as possible to your supervisor and Risk Manager (Administrative Vice President) or Director of Public Safety, and complete the "Risk Management In Case of Accident" form in the glove box of the vehicle. You are encouraged to report accident details that did not result in personal injury or property damage but could do so if it should occur again.
4. The unauthorized introduction, possession or use of intoxicating beverages, illegal drugs, drug-related paraphernalia, narcotics, firearms, explosives, weapons or other hazardous substances is strictly prohibited on university property, in state vehicles or state equipment.

You must inform your supervisor if you are on prescribed medication that could affect your ability to perform your work. Any medical information that may be useful during a medical emergency should also be reported to your supervisor.

5. When working alone, notify another person of your work location, and always try to anticipate any hazards that you might encounter. You should not attempt to do a job alone when safe working practices and common sense tell you assistance is needed. Use the "Buddy System" whenever possible.
6. Never attempt to lift or move a heavy object that is beyond your capability to do so in a safe manner. (See Appendix on Proper Lifting Techniques)
7. Use the prescribed protective equipment for the work you are doing.
8. Never defeat the function of a safety device. Report all safety device malfunctions to your supervisor as soon as possible and flag the device immediately to warn relief and other personnel of the hazard. Safety devices should be periodically tested for proper operation.
9. Preoccupation with matters other than the work at hand causes accidents. When performing a job, concentrate on the immediate assignment. Do not be distracted by your emotions or by outside influences.
10. Do not use makeshifts of any kind that could conceivably compromise safety. In rare instances when a makeshift is necessary as a temporary measure, obtain the permission of your supervisor to use it, then replace or correct it with the appropriate equipment or procedure as soon as possible. While using the makeshift, mark it so that others will be aware of it. As an extra precaution, notify relief and other personnel that it exists.

11. Be careful, when moving about the work area, to avoid slipping, tripping or falling. Be especially careful when conditions create or aggravate hazardous situations.
12. Never engage in scuffling, practical joking, or horseplay on the job.

SLIPS, TRIPS AND FALLS

Slips, trips and falls are a major contributor to injuries and lost time accidents. Be careful and observe the following rules:

1. The following situations should be avoided to help prevent slipping:
 - a. wet floors/decks
 - b. oily floors/decks
 - c. highly waxed and polished floors
 - d. throw-rugs at the foot or top of a stairway
2. Remove any spilled liquid from the floor immediately.
3. Keep items such as paper clips, thumbtacks and rubber bands off the floor.
4. Good traction helps prevent slipping. The soles of some shoes may increase the chance of slipping; therefore, wear shoes that provide good traction.
5. When exerting extreme force on wrenches make sure that your footing is stable in case the wrench slips or releases quickly.
6. Good housekeeping helps prevent tripping.
7. In addition to tools used in day-to-day operations, many items can cause tripping. Be alert for tripping hazards such as garden hoses, shovels, rakes, concrete bumpers in parking lots, broken sidewalks, shallow holes in streets and crosswalks, extension cords, loose shoe laces, pants that are too long, etc. Take action to eliminate tripping hazards where possible.
8. Never run unless the situation is life-threatening.

9. Every opening in a deck, floor, ground or pit which a person could accidentally step into should be well marked. The openings should be constantly attended, protected by barricades or standard railings, or roped off before any grating or boards are removed, or before any holes are opened.
10. Take special precaution when working in a location without handrails.
11. Employees must wear safety belts when working ten feet or more above ground, unless other adequate protection against falling is provided.
12. Safety climbs that are installed on ladders attached to vessels or other equipment must be used. Safety climbs have safety belt attachments that allow personnel to climb without detaching their safety belts after each step.
13. When carrying tools or material, always keep one hand free to use the handrails as you go up and down stairways.
14. Stairs to attic areas in warehouses must be equipped with adequate railings. All stairways should be well illuminated.
15. All steps, walkways and stairs must be kept free of obstructions and slippery materials such as oil and grease.
16. When walkways and stairs are provided, they must be used. Do not take shortcuts.
17. Tools, equipment and material must not be left on walkways.
18. Standard handrails must be provided for four or more steps.
19. Wooden walkways and handrails should be inspected frequently to determine their strength and integrity.
20. The use of colors to mark elevation changes is encouraged.
21. Secure hoses and electrical cords to the floor or ground whenever they are laid across walkways.
22. During winter, be careful of icy walkways. Keep hands free and out of the pockets while traversing them.

RESPONSIBILITIES

Risk Manager and Director of Public Safety Responsibilities - The Risk Manager (Administrative Vice President) is responsible for loss control. The Director of Public Safety, who reports to the Administrative Vice President, is responsible for the development, organization, coordination and implementation of safety programs and education. Responsibilities also include; accident/injury investigation, reporting and management. Other assignments and responsibilities related to disaster response and risk management complete the role of the Public Safety Department.

The Director of Public Safety will advise the Safety Specialist as well as department administrators, supervisors and employees of unsafe conditions, problems related to accident prevention and recommendations for loss control. The Director of Public Safety cannot fulfill obligations of administrators or supervisors relative to providing safe work environments, necessary equipment training as well as inspections in the interest of accident prevention.

Department Head/Division Head Responsibilities - The Department Head is responsible for fulfillment of departmental safety goals and objectives as well as health and welfare of each employee in the department. In the adopted safety policy, the highest priority has been placed on employee safety which becomes the responsibility of the respective administrator. It is normal practice for supervisors to be delegated the authority to carry out safety policies in their departments but the responsibility for meeting objectives and the protection of employees in performance of their assignments cannot be transferred.

The principle duties of the Department Heads in discharging responsibilities for safety are as follows:

1. Provide member to the Safety Committee as requested.
2. Provide area input to the Safety Committee.
3. Provide direction and leadership to the safety program.
4. Enforce safe working rules.
5. Ensure all supervisors are aware that safety is an integral part of their responsibilities.
6. Ensure that all accidents, incidents and work injuries are promptly reported to Risk Management or Public Safety Department.
7. Evaluate all safety suggestions referred to the department.

8. Provide definite replies to employees making suggestions.
9. Work with Risk Management and Public Safety Department when necessary for the evaluation of personal protective equipment, as well as other equipment where safety may be a factor.
10. Establish a program of regular safety meetings with supervisors and ensure that safety information is transmitted to all employees.
11. Ensure that prompt preventive and corrective action is taken to remedy unsafe conditions that are discovered.

Supervisor Responsibilities - Supervisors will assume the responsibility of thoroughly instructing their personnel in the safety practices to be observed in their work situations. They will consistently enforce safety standards and requirements to the utmost of their ability and authority. Supervisors will act positively to eliminate any potential hazards within the activities under their jurisdiction and they will set the example of good safety practices in all spheres of their endeavors. Safety records shall be measured along with other phases of supervisor performance. Therefore, it is absolutely essential that such records be complete and accurate and that all accidents be fully reported. The principle duties of supervisors in discharging responsibilities for safety are as follows:

1. Enforce all safety regulations in effect and make employees aware that violations of safety rules will not be tolerated.
2. Make sure all injuries are reported promptly and all accidents are reported even if injury is not apparent.
3. Conduct thorough investigations of all accidents and take necessary steps to prevent recurrence through employee safety education, operating procedures or modification of equipment and/or process.
4. Provide each employee with complete safety instructions regarding their duties prior to the employees actually starting to work.
5. Conduct regular safety checks, including a careful examination of all new and relocated equipment before it is placed in operation.
6. Properly maintain equipment and issue instructions for the elimination of fire and safety hazards.
7. Continuously inspect for unsafe practices and conditions and promptly undertake any necessary corrective actions.

8. Develop and administer an effective program of good housekeeping and maintain high standards of personal and operational cleanliness throughout all operations.
9. Provide safety equipment and protective devices for each job based on identified hazards and knowledge of applicable standards or on recommendation of Risk Management or Public Safety Department.
10. Conduct safety briefings at organizational meetings and encourage the use of employee safety suggestions.
11. Give full support to all safety procedures, activities and programs.

NOTE: If the personnel situation within a department does not allow supervisors to perform these tasks, the Department Head or Division Head is responsible.

Safety Specialist Responsibilities - The principle duties of the Safety Coordinator in discharging responsibilities for safety are as follows:

1. Serve on the Safety Committee and report on its safety programs.
2. Assist supervisors in setting up and maintaining proper standards for all phases of safety including good housekeeping, proper work practices, safe working conditions, protective equipment and safety education.
3. Investigate all work related injuries.
4. Assist management in complying with all safety rules and regulations.
5. Devise corrective measures to prevent accidents and injuries.
6. Inspect work sites and work places to ensure safety procedures are in use.
7. Coordinate with Risk Management and/or Director of Public Safety where necessary, for advice and guidance concerning safety programs and procedures, use of safety materials, hazardous conditions, personal protective equipment, and other technical areas.
8. Make regular and frequent reports to the departments on status of safety program.

Employee Responsibilities - Each employee, as a part of the comprehensive Loss Control/Risk Management Program, is expected to place safe work practices and identification of unsafe conditions as the highest priority while performing other daily tasks. All employees are required, as a condition of their employment, to adhere to all safety rules and regulations which are established for the protection of themselves, their fellow employees and the public. Failure to comply with safety rules and regulations may result in disciplinary action or termination. Each employee's safety commitment must include, but is not limited to the following:

1. Using the safety equipment which has been provided for use in performing daily work assignments.
2. Wearing the prescribed personal protective equipment as required.
3. Not operating equipment for which training or orientation has not been received.
4. Warning co-workers of unsafe conditions or practices they are engaged in which could lead to or cause an accident.
5. Reporting defective equipment immediately to a supervisor.
6. Reporting dangerous or unsafe conditions that exist in the work place. This would include defective sidewalks, broken curbs, hanging tree limbs, loose handrails, open manholes, sunken basins and sewers, missing or damaged traffic signs or signs.
7. Reporting all injuries and accidents regardless of severity.
8. Taking care not to abuse tools and equipment, so that these items will be in usable condition for as long as possible as well as to ensure that they are in the best possible condition while being used.

HOW TO MANAGE AN UNSAFE CONDITION

Often, the obvious remedy to an unsafe condition appears costly, time consuming, unreasonable and over-reactionary. This is generally due to the failure to apply the alternative methods to determine a solution that is both timely and cost effective for the situation. The following options are listed in order of their effectiveness:

After identifying the problem:

1. Eliminating the hazard by removal of the machine, method, material or structure.

2. Providing control of the hazard by enclosing or guarding the point of hazard at the source.
3. Training personnel on what to do when confronted with a hazardous condition and providing safe avoidance procedures.
4. Providing and ensuring the use of personal protective equipment to shield employees from the hazard.

The most effective way to avoid hazardous conditions is to engineer them out of the job. This can be accomplished by job planning and the assistance of the Safety Officer in the early stages of program planning, equipment specification-writing and site inspection.

At no time should protective devices or safety practices be set aside to get done “sooner” or “cheaper”; the price paid for such indiscretion may greatly outweigh the gain anticipated by this action.

TRAINING

Each department has the responsibility of providing on-the-job training to each employee on the topics that will enable the employee to do their job safely and efficiently. This training shall include:

1. Orientation to departmental and over SWOSU safety and health rules.
2. Procedures for reporting on-the-job injuries.
3. Procedures for processing hospital / medical bills related to job-related injuries.
4. Workers' compensation claims process.
5. Requirements for use of vehicles.
6. Reporting of unsafe conditions.

In addition, specialized training must be offered in the use of tools and equipment in order to maximize the capabilities of the equipment as well as to prolong its usable life and prevent accidents.

All employees are expected to request instructions for those tasks or for any equipment with which they are not familiar.

CONTRACTOR SAFETY

Introduction:

Safety is a prime consideration of all operations conducted by Southwestern Oklahoma State University. With regard to independent contractors, we are interested in the desired result - a safe operation.

Contractors performing work on SWOSU premises are required to comply with health and safety laws and regulations and to adopt safety practices equivalent to those applicable to SWOSU employees.

Contractor Responsibilities:

1. Contractors are responsible for the safety of their employees while working for SWOSU.
2. Contractors are responsible for developing and training their employees in procedures adequate to ensure safe operations.
3. Contractors are fully responsible for providing their employees with all necessary protective and safety equipment. They must also ensure that contract employees are familiar with the proper use of equipment.
4. Contractors must abide by all applicable laws and regulations including those of the Occupational Safety and Health Administration (OSHA) and Oklahoma State Department of Labor.

Southwestern Okla. State Univ. Employees Responsibilities:

1. SWOSU Employees who are aware of situations where safety has been compromised must immediately notify appropriate contract supervisors of the problem and the follow-up to ensure that appropriate action has been taken to rectify the situation.
2. SWOSU employees are responsible for reporting accidents involving contract personnel, state equipment or property and must prepare an incident report immediately upon gaining knowledge of the incident.
3. SWOSU employees observing unsafe practices on state property should immediately report the incident to the responsible SWOSU representative on location.

SECTION 2 PROTECTIVE EQUIPMENT AND CLOTHING

INTRODUCTION

Personal protective equipment is vital to safety in your work location. The equipment should be properly cleaned, inspected after use, and stored in clearly marked and properly designated areas.

Any equipment that no longer provides adequate protection should be repaired or replaced immediately. Unusable equipment should be destroyed by notifying the Maintenance Department for disposal.

EARS

1. Appropriate hearing protection is provided by Southwestern Oklahoma State University and must be worn by all personnel in areas where signs are posted warning of excessive noise levels. Hearing protection should also be worn in unposted areas that are suspected of temporary excessive noise.
2. High noise level areas must be routinely surveyed, and the supervisor should recommend a survey when an unpoluted area is suspected of excessive noise.

EYES

1. All employees must wear approved safety glasses at all times while in any location where the potential for eye injury exists, except when special-purpose eye protection is needed.
2. Contact lenses do not provide eye protection but increase the need for eye protection and, consequently, are discouraged. When contact lenses are worn, goggles or special safety glasses with side shields must be worn for additional protection where eye safety is required. Contact lenses should not be worn where there is a risk of liquid spray from hydrocarbons, chemicals, acids, caustics or any other liquid substances that can burn or be corrosive to the eye. Wearers of contact lenses must inform their supervisors and co-workers that they wear the lenses so that proper emergency treatment can be given if necessary.

3. Impact-type goggles and a face shield should be worn when engaging in any activity that involved hazards to the unprotected eye from chipped or flying particles. Some examples are chipping, scraping, buffing, grinding, using weed-eater, etc.
4. Complete-coverage eye protection must be worn when dust hazards exist and when using any type of pneumatic tool.
5. Individuals must wear splash-proof goggles when they are handling hazardous chemical liquids, powders or vapors. They must also wear the goggles when they are in the immediate vicinity of these chemicals.
6. To ensure maximum protection and comfort, eye protection should be adjusted properly to the face.
7. An approved cover-glass, impact-type safety goggle for use over protective glasses may be worn by employees who are only occasionally exposed to eye hazards.
8. A person near other persons who are doing work that required the use of safety goggles must wear such goggles.
9. Welding must not be directly watched without proper eye protection.
10. Goggles with No. 5 or 6 shade lenses must be worn when material is cut with acetylene gas. Helpers engaged in such work should wear goggles with No. 4 shade lenses.
11. Electric-arc welding requires the use of welding helmets or hand shields fitted with No. 10 or darker shaded lenses. Helpers in electric welding must wear No. 6 or darker shade lenses.
12. Cover glasses must be used with all welding goggles, helmets and shields.
13. Suitable goggles must be worn when inspecting tubing under hydraulic pressure.
14. Various "anti-fogging" compounds for lenses and respiratory face masks are available and should be used to maintain clear vision when conditions are conducive to fogging.

FEET

Good, strong, substantial shoes or boots are recommended for use in any location where the potential for foot injury exists. Sturdy, steel-toed safety shoes are recommended. Neoprene or non-slip soles that are oil resistant are also recommended.

Where required by the Occupational Safety and Health Administration (OSHA), or other regulations, steel-toe safety shoes must be worn.

HANDS

1. Wearing gloves prevents many minor injuries resulting from rough materials or irritating substances. Wear gloves whenever possible. Leather or leather-palm gloves should be worn when wire rope is being handled. Cloth gloves afford adequate protection when pipe is being handled.
2. Appropriate gloves must be worn when acids, caustics or hazardous chemicals are handled.
3. Appropriate safety gloves, electricians gloves (hot gloves), or gauntlet gloves are necessary in certain situations that involve electrical work.
4. Insulated or heat-resistant gloves must be worn when regular work gloves cannot adequately protect against burns.

HEAD AND FACE

1. Hard hats must be worn by employees in any location where head injury hazard exists. Hard hats are selected for their protective qualities, and no others may be worn on the job. Hard hats must fit properly to provide maximum protection, and they must be maintained to ensure their protective qualities. Hard hats must not be painted or modified in any manner.
2. Hair long enough to constitute a hazard while a person is working near moving machinery or rotating tools and equipment must be secured by a net or tied back. Hair styles that make it impossible for a person to properly wear a safety hat are not permitted.

Beards that constitute a hazard while a person is near moving machinery or rotating tools are not permitted.

RESPIRATORY

1. Employees must be taught how to use respiratory protection before its actual use is required. Specific training requirements vary for respirator types. Training must be conducted in accordance with applicable regulations. Periodic refresher training should be held as appropriate. The employees who are required to wear respirators in their job just have annual physicals and a doctors approval to wear and work in a respirator.

A person's ability to communicate becomes limited when wearing a respirator. Communication procedures should be included as a part of the training program in high risk areas.

2. Respirators must be worn when personnel are working in an atmosphere contaminated with harmful mists, fogs, gasses, smokes, sprays and vapors. Respirators must be one of the following types approved by the National Institute of Occupational Safety and Health (NIOSH):
 - a. Dust Respirators - Used to protect from nuisance and toxic dusts. Not to be used for vapors, mists or fumes unless specified by the manufacturer-supplier.
 - b. Chemical Cartridge Respirators - Used to protect from mist or vapor such as paint spray. Not to be used for dusts or fumes unless specified by the manufacturer/supplier.
 - c. Blower Masks - Used in almost all hazardous situations. Not to be used in environments considered immediately dangerous to life or in confined spaces.
3. Respirators must be regularly cleaned and disinfected and properly stored after each use.
4. Any employee working in an area where routine or emergency use of a respirator is required to perform their job must be clean shaven in the face-piece sealing area and must not have facial hair that could interfere with the function of the mask.

Before donning a respirator with a full face piece, a person must remove any head covering, spectacles, or foreign items in the mouth. The mask must be tested for air tightness before the person enters the contaminated area. In the test, the person wearing the mask inhales after the air supply has been blocked. If the mask fails to collapse against the face, it must not be used before repairs or adjustments have been made.

5. Employees who wear prescription glasses and are assigned to areas where respirators may be required should be outfitted with a means of attaching the prescription lenses to the face mask of the respirator.
6. The wearing of contact lenses with a respirator is not permitted.

(See Appendix on Respiratory Protection Program)

FALL PROTECTION

1. A harness must be worn at all times while a person is working six feet or more above the ground, with the exception of some masonry scaffolding and ladders
2. The harness should fit snugly and comfortably. The wearer should allow no more slack in the line than is necessary.
3. All harnesses should be regularly inspected for excessive wear or damage that could cause them to fail. Harnesses worn or damaged to the extent that they could fail should be destroyed, and discarded.
4. Harnesses must not be thrown into a toolbox or otherwise subjected to treatment that could damage them or weaken them. They should also be inspected by the employee before each use.

OTHER PROTECTIVE EQUIPMENT

Chemical goggles, full-face shield, protective gloves and an acid proof apron should be worn for handling chemicals that may be harmful to the skin or eyes when exposure to spillage is possible. Certain materials such as acids and caustic soda require additional protection.

CLOTHING

1. Clothing suited to the work, the weather, and the environment in which the employee works must be worn.
2. The wearing of jewelry such as a ring, watchband or neck chain on the job where materials are being handled is discouraged because it can cause or contribute to accidents and injury.

3. A person working around machinery must not wear neckties or neck chains, gauntlet gloves or gloves that fasten around the wrist, or baggy, loose or ragged clothing. Never tie or otherwise attach a rag or handkerchief to your person in such a manner that it cannot be removed with one quick, easy pull.
4. If clothing becomes saturated with oil gasoline or chemicals, the employee should immediately wash the exposed skin area with soap and water and change clothes to prevent skin irritation. The employee must avoid all sources of fire, including cigarettes, pipes or cigars, before changing clothes and washing the affected skin with soap and water. A physician should be consulted if a skin rash develops.

SECTION 3 SMALL TOOLS AND EQUIPMENT

GENERAL

1. Tools should be kept in an orderly fashion on the tool bench or in the tool chest so that they may easily be found when needed. All tools should be cleaned after use.
2. All tools and equipment should be inspected regularly. Defective and unsafe tools or equipment must be reported promptly to the supervisor, and repaired or replaced at once.
3. Hand or power tools should be used only in the manner for which they are designed. Never remove safety guards from power tools. Never subject a hand or power tool to strain obviously beyond its capacity.
4. Tools must not be left lying on moving machinery.
5. Tools or loose material not bolted, tied or secured in an approved manner must be removed from elevations.
6. When operating driving tools, use a tool holder for the chisel, bar or other tool being struck.
7. When several people are using hammers, shovels, picks, axes, machetes, brush hooks, or similar equipment, they should maintain a safe distance from each other.
8. Faces of sledges, hammers and mauls should be slightly tempered. Heads of cutters, and other anvil tools, should not be tempered.
9. Cutting tools are safer and more efficient when kept sharp. Avoid using dull cutting tools.
10. Nails or sharp edges around the top of kegs, barrels, boxes, cans and other containers should be eliminated immediately.
11. Boards should not be thrown or left around with nail points protruding. The nails should be removed or bent down.

ABRASIVE WHEEL GRINDERS

1. Safety washers must be used on all abrasive wheels. Abrasive wheels must have a protective shield and a tool rest that is adjustable to maintain a clearance no greater than one-eighth inch. The operator must wear cup-type goggles and should wear a face shield and stand to one side of the plane of rotation whenever possible.
2. Never plug in a wheel grinder to a power source without ascertaining that the grinder switch is in the "off" position.
3. The spindle speed of the machine must not exceed the maximum operating speed marked on the wheel.
4. Before a wheel is mounted, it should be closely inspected to make sure it has not been damaged. This inspection should include the "ring-test": Tap lightly with a non-metallic instrument. If the wheel sounds dead or does not ring, it is cracked or defective and must not be used.
5. Grinding wheels should always be redressed immediately after they are used on brass and aluminum material. Worn or uneven grinding wheels need to be redressed before they are used.

HANDLES

1. Remove the handle from a jack when it is not in use. Use the correct size jack.
2. Handles of all sledges, hammers, mauls, axes, picks, mattocks and other striking tools must be properly wedged into the heads.
3. Files should not be used without handles.
4. Non-conductive materials, such as wood or fiberglass must be used for handles on shovels and pothole diggers to protect from electrical shock.
5. Cracked or split handles must be replaced as soon as possible. Never paint wooden handles, and never tape cracked or split handles.

LADDERS

1. Ladders must be maintained in good condition. When portable ladders are used on hard surfaces, they must be equipped with non-skid footing or securely fastened to prevent slipping. The top of the ladder should be placed away from the wall by a distance of about one-fourth of the working length of the ladder.
2. All permanent ladders must be securely fastened at both top and bottom. Long ladders should also be secured at intermediate points.
3. Ladders should be closely inspected when purchased or installed and reinspected at least twice a year. Check the condition of the ladder before it is used and correct any defects. The combined weight of the employee and load should not exceed the load limit for the ladder. Remove any oil, grease or slippery material from the ladder and from your shoes.
4. Wooden and fiberglass ladders must not be painted. Wooden ladders should be coated with clear varnish or shellac or treated with boiled linseed oil.
5. When climbing or descending a ladder, a person should face the ladder and hold the side rails, not the rungs. Climbers should not carry tools or other encumbrances in their hands. A tool belt or pouch should be used for holding small tools, and a hand line should be used to raise or lower heavy or bulky objects. When a climbing belt is supplied, it must be used by the person ascending or descending the ladder.
6. When working from a ladder, never extend further than your arm's length to reach work. When working on a portable ladder, move the ladder to avoid the possibility of an accident.
7. No more than one person should be on a ladder at the same time where possible. If a job requires more than one person, a second ladder or scaffold should be considered.
8. Never work on an unsecured ladder in windy conditions.
9. A person should not stand on the top two steps or the spreader of a step ladder.
10. A step ladder should not be used as a straight ladder.

11. It is a good safety practice for someone to hold or steady a step ladder for a person working near its top.
12. When performing electrical work that requires the use of a ladder, use a wooden or approved fiberglass ladder. Metal ladders must not be used.
13. When raising a ladder, make sure it will not contact an electrical line.
14. Extension ladders should properly overlap between sections.
15. Ladders must not be used as scaffold members or for any purpose for which they are not intended.
16. Unsecured portable ladders should not be left unattended.

SCAFFOLDING

Specifications:

1. Scaffolds must be constructed to support at least four times the maximum intended load without failure. Never exceed the safe working loads of scaffolds.
2. All scaffolds should be erected level and plumb on a firm base. Adjusting or leveling screws must not be used on scaffolds equipped with wheels. Adjusting screws should not be extended more than twelve inches of thread.
3. Platform planks should be laid with their edges close together so that there are no spaces large enough for tools or materials to fall through. All planking must be overlapped a minimum of twelve inches or secured from movement. Planks must extend over end supports not less than six inches nor more than eighteen inches.
4. When space permits, all scaffold platforms ten feet or more in height should be equipped with standard guardrails and midrails, be completely decked with safety plank or manufactured scaffold decking, and have rigidly secured toeboards on sides and ends.
5. Scaffolds should be tied to and securely braced against the building or structure horizontally and vertically as specified for the type of scaffold in accordance with applicable regulations.

6. Scaffolds under which personnel are required to pass must be provided with mesh or netting to provide protection from falling objects.
7. Non-conducting ladders or scaffolds must be used when working on energized electrical circuits.

Practices:

1. Before starting work on a scaffold, inspect visually to determine that; guardrails, toeboards and decking are in place; all wheels are locked on movable scaffolds; and, locking pins are in place at each joint.
2. When working above six feet and according to OSHA regulations, personnel must wear properly attached safety harnesses on scaffold platforms not equipped with standard guardrails and toeboards . (See Rule 4 in previous section.)

POWER MOTORS, EDGERS AND TRIMMERS

1. The following conditions must be observed when using power mowers, edgers and trimmers:
 - a. Before beginning work, carefully inspect the area and remove all wire, rocks, glass and other objects that could become missiles if struck by the blade. The mower discharge chute and rear mower housing must be equipped with a deflector shield.
 - b. Before starting the mower, inspect it for loose parts and defective or loose guards. Disconnect the spark plug wire before attempting an inspection or repair of the mower blade.
 - c. Do not add fuel to the engine gas tank while it is running or while it is hot. Do not refuel in a closed area.
 - d. Do not allow anyone to loiter in the immediate vicinity of operations.
 - e. The operator must wear safety goggles or safety glasses with side shields as appropriate when mowing, edging, or trimming. Steel-toe safety shoes are strongly recommended.

- f. Fuel for power mowers must be carried and stored in approved containers.
- g. Never leave power equipment running while unattended.
- h. Never attempt to lift a mower when the engine is running. If it is necessary to lift the mower, turn the engine off and wait until the blade has ceased to rotate, then lift the mower using appropriate lifting techniques. Never reach under the mower when the engine is running.

POWER TOOLS

1. Before making any repairs to or servicing any type of power tool, the power source must be disconnected. If the tool is driven by a gasoline engine, the ignition wire should be disconnected from the spark plug or other precautions must be taken to prevent the accidental firing of the engine.
2. Electric power tools must not be used on tanks, lines, vessels, etc., until they are gas free..
3. The frames of portable electric tools and equipment, except U. L. approved double-insulated tools, shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire grounded at the source of the current. Outlets supplying power to portable electric tools which are either outside or in wet locations should have approved ground fault circuit protection.
4. Hand held electric power saws and chain saws shall be equipped with a switch that must be manually held in the closed position. Hand held drills, sanders, saber, scroll and jig saws may have a lock-on control provided that turn-off can be accomplished by a single motion of the same finger that turned it on.
5. Electric powered tools and equipment showing worn deteriorated or inadequate insulation, etc., shall be removed from service until properly repaired.
6. Where there is a danger of explosion or fire, air-operated power tools are preferred.
7. Persons using air-operated tools must make certain that the air supply pressure cannot exceed the working pressure of the tool.

MACHETES AND HAND SICKLES

1. New machetes should be blunted square once inch from the point. Two inches of the blade next to the handle should also be blunted. Machetes may be sharpened with a file by stroking toward the edge only when the file is fitted with a handle.
2. A machete should be carried in a sheath when not in use. It must be strapped or tied to the user's wrist.
3. When using a machete or hand sickle, swing it down and away from the body. When two or more people are working together, they should remain a safe distance from one another.

SCREWDRIVERS

1. Avoid the careless or improper use of screwdrivers. Never attempt to use a screwdriver as a pry tool, drift or chisel.
2. Screwdrivers should be held in such a way that if they slip, they will not stab you or anyone else.

HAND WRENCHES

1. Wrenches should not be used directly over the head. Instead, work at an angle.
2. The wrench must fit the nut.
3. Never use a wrench to secure leverage by placing its jaw into the jaw or on the handle of another wrench.
4. Adjustable pipe wrenches and crescent-type wrenches should be adjusted to take a full but snug grip on a pipe or nut. The pull should be made toward the jaw of the wrench so that the grip is tightened and undue strain on the tool is avoided. Avoid the use of a crescent-type wrench when a box-end wrench or open-end wrench can be used.
5. Never step or jump on wrenches when additional force is needed.

6. Extensions, or “cheaters”, should not be used on wrench handles until efforts to break or make up the connection with the largest wrench available have failed. If a cheater is used, place it on the largest wrench available. The cheater should extend the full length of the handle so that it will not damage the wrench or slip off the handle. Never use a cheater on a crescent-type or aluminum wrench. Fiber-glass and aluminum cheaters should not be used.
7. When connections are known to be quick-breaking, causing a sudden release, a hammer wrench should be used instead of a wrench that requires body force.

SLEDGES

Sledge work should be so arranged that sledging in a horizontal arc is not necessary. If a person must swing the sledge in a horizontal arc, the footing of that person should be as secure as possible. All observers must stand in the clear. Check the clearance overhead and behind before starting to work. Lay sledges flat when they are not in use.

DRILL PRESS OPERATION

1. Use drill bits that have been properly sharpened to cut to the right size.
2. Never attempt to hold the material under the drill by hand; clamp it securely to the table before starting the machine.
3. Run the drill only at the proper speed; forcing or feeding too fast may result in broken or splintered drill bits and serious injury.
4. If the material should slip from the clamp, never attempt to stop it with your hands. Stop the machine to make any adjustments or repair.
5. Do not leave the chuck wrench in the chuck.
6. Be extremely careful when reaching around the revolving drill, wear snugly fitted clothing, and keep sleeves short to prevent them from catching in the drill. Keep hair from getting in the drill by using a cap, hairnet or tying it back.
7. Use a stick or a brush to remove chips from the drill - never use your fingers, cotton waste or rag. File or scrape all burrs from the drill hole.

8. Do not wear gloves while operating the drill; if handling rough materials, use gloves only when the drill is not running.
9. Always stop the drill if you leave the machine.
10. When through drilling, remove the drill bit from the chuck and return it to the proper storage place.

JACKHAMMER OPERATIONS

1. Employees must wear steel-toe safety shoes, goggles, hard hat, and hearing protection.
2. Inspect the machine and equipment regularly, especially drill steel. Never use defective equipment.
3. Thoroughly examine the slope and face for loose rock.
4. Keep a good grip and watch your footing when drilling.

COMPRESSED AIR HOSE

An air hose should not be used to blow particles off clothing, hair or skin. If air pressure is being used to clean an area, the user must wear protective goggles and the air hose must be equipped with a pressure regulator to reduce the air pressure to less than 30 psig.

SECTION 4 EQUIPMENT AND OPERATIONS

GENERAL

1. Do not walk, stand or work under suspended loads. A load must be cribbed, blocked or otherwise secured, as soon as it has been raised.
2. When unusual strains are placed on equipment or materials, retreat to a safe location and keep other personnel from entering the hazardous area.
3. All vertical equipment should be securely anchored, guyed or otherwise supported while it is being erected or dismantled. This should be done before anyone is allowed to climb on the equipment.
4. Eyebolts or handles should be installed near the center of gravity on all heavy machine guards.
5. Do not use compressed air or gas to displace the fluid content of a drum.

EXCAVATIONS

1. The sides of all excavations in which employees may find themselves exposed to danger from moving ground shall be guarded by a shoring system, sloping of the ground or some other equivalent means. All slopes except for solid rock, hard shale or cemented sand and gravel shall be excavated to at least the angle of repose. The angle of repose shall be flattened when an excavation has water conditions, silty materials, loose boulders, and areas where erosion, deep frost action and side planes appear. All banks more than four feet high shall be shored, laid back to angle of repose or provided with other equivalent protection.
2. Except in hard rock, excavations below the level of the base footing of any foundation or retaining wall shall not be permitted unless the wall is underpinned and all other precautions are taken to ensure the stability of the adjacent walls for the protection of employees involved in the excavation work, underpinning, shoring or bracing shall be designed by a qualified person and inspected daily by that person or by a designated representative.

3. Diversion ditches, dikes or other suitable means shall be used to prevent surface water entering any excavation and to provide good drainage of the area adjacent to the excavation.
4. Excavated material shall be stored and retained at least two feet from the edge of the excavation and at a distance to prevent excessive loading on the face of the excavation.
5. Boulders, stumps or other materials that may roll or slide into the excavation shall be removed or made safe.
6. Guardrails, fences or other barricades and warning lights or other illumination maintained from sunset to sunup shall be placed at all excavations which are adjacent to paths, walkways, sidewalks, driveways or other pedestrian or vehicular thoroughfares. Adequate barrier physical protection shall be provided at all remotely located excavations.
7. Materials used for sheeting, sheet piling, cribbing, bracing, shoring and underpinning shall be in good serviceable condition and of adequate dimensions. Timbers shall be sound and free of large or loose knots.
8. Prior to opening an excavation, all underground installations, such as sewer, water, fuel, electric lines, etc., shall be located and protected from damage or displacement. Utility companies shall be contacted to mark the actual locations of these installations.
9. Where personnel are required to enter excavations over four feet in depth, stairs, ladders or ramps shall be provided so as to require no more than twenty-five feet of lateral travel.
10. Where it is necessary to undercut the side of an excavation, overhanging material shall be safely supported.
11. Bracing, shoring, cribbing and other supports shall be inspected daily and after every rainstorm by a competent person. Protection against slides and cave-ins or slides is apparent, all work in the excavation shall cease until the necessary precautions have been taken to safeguard employees.
12. When mobile equipment is utilized or allowed adjacent to excavations, substantial stop logs or barricades shall be installed.

13. Excavating or hoisting equipment shall not be allowed to raise, lower or swing loads over workers in the excavation.
14. At least two means of exit shall be provided for workers in excavations.
15. Entry into excavations where either insufficient oxygen or hazardous vapors are suspected will not be attempted until tests with appropriate testing equipment has been conducted and the area cleared for entry. If the test shows hazardous vapors are present or insufficient oxygen, work shall not start until all possible vapors have been eliminated and adequate ventilation ensured. Never test for gas with a flame or spark.

CONFINED SPACES

One of the greatest hazards that can be encountered is that of entering a confined space in which toxic and/or flammable gases may have accumulated or where the oxygen has been depleted to the point where human life cannot be supported.

Properly approached, the task can be made hazard-free by diligently monitoring the confined space atmosphere before work is begun, continual monitoring during the work performance and providing proper space ventilation or self-contained breathing apparatus properly rated for the suspected hazard.

Most of the severe injuries that take place occur because an employee either went into a confined space without first testing its atmosphere for toxic gases or was overcome while working in a confined space while not continuously ventilating and monitoring that space.

GENERAL PROVISIONS

1. No person, employee or contractor shall be permitted to enter a tank, vessel, boiler, pit or manhole except on compliance with the requirements enumerated in this section and the requirements of the University Confined Entry Policy. (See Appendix on SWOSU Confined Space Entry Checklist & Safe Work Permit)

2. Conditions under which entry into tanks, vessels, boiler, pits or manholes or other spaces shall be strictly controlled are as follows:
 - a. Where existing ventilation is insufficient to remove dangerous air contamination immediately hazardous to human life, or greater than 10% of the lower explosive concentration of the gas, vapor or particulate.
 - b. Oxygen deficiency (less than 19.5% by volume) may exist or develop.
 - c. Access is restricted by the size of the hatch, man-way or opening to permit ready removal of a suddenly disabled person.
3. Before a confined space is to be entered, the field supervisor shall carry out the following:
 - a. Require the atmosphere within the space to be tested following ventilation to determine the concentration of air contaminants and oxygen.
 - b. Review the work to be done in the space in terms of conditions which could result in contamination immediately hazardous to human life, or greater than 10% of the lower explosive limit of the gas, vapor or particulate.
 - c. Examine the surrounding area for drifting gas, vapors or other materials which may constitute a hazard.
 - d. Examine the space for physical obstructions and hazards which may restrict removal of a person who may become disabled following entry.
4. When tests and inspection indicate the space is, or could become hazardous, procedures for entry shall be carried out as follows:
 - a. The field supervisor shall satisfy himself that the personnel assigned to enter and stand by the space in question have been trained in the use of respiratory and other required safety equipment and rescue procedures, and fully understand the conditions set forth.
 - b. The field supervisor shall ensure that the required personal protective equipment and fire safety equipment is available and utilized if needed.

5. Before a confined space is opened to begin all employees must be trained in the confined entry procedure and must remain present throughout the duration of the job and until all personnel have been evacuated from the space.
6. In the event that supervisors encounter difficulty in the preparation of the entry they should contact the Safety Officer for assistance.

CONFINED SPACE ENTRY TRAINING

The purpose of training is simply to communicate to the people who will be responsible for performing a task what is expected of them. If an employee is aware of what is expected and those procedures to be followed are communicated clearly, the chances of a mishap are greatly reduced.

When procedures are violated, it is usually because the procedures were not conveyed to the person performing the task in such a manner that the necessity of complete compliance was understood. When dealing with procedures as life threatening as confined space entry or as hazardous as the materials and gases handled at a waste treatment facility, there is no room for compromise on established safety procedure. This fact must be communicated to all involved.

Confined space entry training shall consist of training as follows:

1. All personnel involved be made aware of each space that is considered a confined space, the position and function of any existing fixed detecting/sensing devices, and what gases may accumulate within that space.
2. All personnel involved shall have a clear understanding of the effects of the gases that may accumulate within each confined space and their effects on the body and/or their flammability characteristics.
3. All personnel involved shall have a clear understanding of the detecting/sensing equipment necessary to determine the levels of gases accumulated within a confined space and the proper functioning of that equipment.
4. All personnel involved shall be trained in the proper handling and use of the safety equipment to be available and used: such as self-contained breathing apparatus, portable communication devices and rescue equipment.

5. All personnel shall be made aware that confined space entry is never attempted alone.
6. The attending employee shall be made aware that if the person within the confined space is rendered helpless, the first thing to do is communicate, with the provided portable communication device. A rescue should never be attempted without the use of a previously fitted and tested self-contained breathing apparatus.
7. The confined space entry procedure must be reviewed step by step and each involved person shall perform the procedure properly, utilizing all necessary equipment, adherence to the confined space entry procedure is a matter of life and death and this fact must be related to all involved.
8. Each new employee, no matter how experienced, shall be given a tour of all confined spaces in which they may be required to work and monitoring devices at the location, if any.
9. Each new employee, no matter how experienced, shall also be trained in the confined space procedure and have performed it at a training session before he or she is allowed to enter a confined space.

HOT WORK

This section covers Hot Work permit requirements. It contains a description of good practices that apply under normal circumstances. However, the precautions stated here are considered to be the minimum for safe execution of these tasks.

1. Conditions under which Hot Work is to be performed shall be strictly controlled as follows:
 - a. Where gas, vapors or particulates in the atmosphere are greater than 10% of the lower explosive limit.
 - b. Where the generation of heat in the repair process reduces the oxygen concentration to a point less than 19.5% (by volume).
2. Before any Hot Work is to be performed, the field supervisor shall carry out the following:
 - a. Ensure the atmosphere within the work space is tested following ventilation to determine the condition of air contaminants and oxygen.

- b. Review the work to be done in terms of conditions which could result in contamination immediately hazardous to human life, or greater than 10% of lower explosive limit of the gas vapor or particulate.
 - c. Examine the surrounding area for dripping gas, vapors or other materials which may constitute a hazard.
 - d. Examine space for physical obstructions and hazards which may restrict removal of a person who may become disabled following entry.
3. When tests and inspections indicate that the area is, or could become hazardous, procedures for performing Hot Work shall be carried out as follows:
- a. A "Confined Spaces - Hot Work Permit" shall be prepared by the field supervisor responsible for the work to be done. (See Appendix on SWOSU Confined Space Entry Checklist & Safe Work Permit - Hot Work Permit)
 - b. The permit shall be prepared in duplicate, the original issued to the person assigned to perform the work and the duplicate retained in a work permit file maintained by the supervisor.
 - c. A Hot Work permit is required for any of the following situations in operations in confined spaces where there are or have been hydrocarbons, other flammables or an oxygen deficiency.
 - 1) Arc welding
 - 2) Cad welding
 - 3) Acetylene cutting
 - 4) Torching
 - 5) Flaming
 - 6) Soldering
 - 7) Grinding
 - 8) Chipping
 - 9) Painting around spark-producing equipment
 - 10) Other spark-producing operations
4. When a Hot Work permit is used, the issuing supervisor shall limit the Hot Work area to the absolute minimum required to do the work.

5. Only those individuals required to perform the work are allowed to enter Hot Work or entry work areas. Also, welding leads, torches, and heat or spark-producing tools shall not be allowed in a Hot Work area until needed, and then only for the time required to do the work.
6. Before issuing the permit, the field supervisor shall be satisfied that the person receiving the permit and those assigned to enter and stand by the space in questions have been trained on the use of respiratory and other required safety and emergency equipment and rescue procedures, and fully understand the existing conditions.

WELDING

1. No unauthorized person will be allowed to use welding equipment.
2. Welders are responsible for the maintenance of their equipment and for the protection of passerby. Electrical welders shall provide a protective screen around the arc where practicable and should not permit anyone to look at the arc without proper protection. In shops where electrical arc welding is used, signs shall be displayed warning of the danger of the operation to unprotected eyes.
3. Employees shall use great caution when working near an electric welding arc. Exposure to it can severely burn the eyes.
4. Plastic-case lighters shall not be carried around welding operations or flames.
5. The fumes generated by welding are hazardous if inhaled. Adequate ventilation should be available to ensure that the fumes are kept out of the employees' breathing zone while welding. If indoors, a local exhaust system shall be installed over the work place if necessary.
6. Arc-welding units shall be located in gas-free areas.
7. All steel drums, barrels, or other closed vessels that have contained volatile liquids or gasses shall be thoroughly steamed, filled with water, or made safe by other approved methods before a cutting or welding torch is applied.
8. Before welding is performed on a Freon system, the system shall be properly purged to prevent any oil vapors from causing an explosion, and to prevent Freon vapors from creating poison gas when heater flame is applied.

9. Pieces of hot metal shall not be left where workers might get burned by handling or stepping on them. It is a good practice to post the sign "HOT" on a cooling object.
10. Power to an electric arc welding machine should be turned off when not in use.
11. Only enough cable to do the job should be used. The remainder should be kept rolled on racks.
12. Welders should select their goggles carefully. A proper fit can prevent flying sparks from entering the eyes.
13. When changing welding electrodes, use care to avoid making contact with the other side of the circuit. A ground should be connected directly to the piece being welded.
14. Welders working in the field should wear special helmets with face shields.
15. Welders should dispose of used welding rod stubs. If left on the ground they can puncture shoes and cause injury.

CYLINDERS, HOSES AND TORCHES

1. Compressed gas cylinders should be handled carefully even when they are empty. Rough handling may damage cylinders or cause leakage, with consequent danger of fire and explosion.
2. Dented or damaged cylinders should not be used.
3. Except when in use, cylinder valves should be closed with caps in place. Do not lift the cylinders by the caps and do not use them for rollers or any other purpose.
4. Cylinders should be securely fastened in an upright position with value ends up, except when they are being transported to another location.
5. At elevated pressures, oil or grease combined with oxygen can be explosive. Keep oil and grease off regulators, valves, hoses and gauge connections.

6. Oxygen should not be used to inflate tires or blow debris from clothing or skin.
7. Oxygen and acetylene cylinders shall not be stored together. They should be stored in a safe, dry, well-ventilated area at least twenty feet from each other or other combustible materials.
8. To prevent rusting, cylinders should be stored off the ground in the shade, if possible.
9. Cylinder valves should be checked for leakage. Torches, valves, check valves, O-rings, regulators, and hoses should be inspected regularly. Check valves should be installed on a hose at the regulator end.
10. Leaks and bruises in hoses should be repaired immediately. A few inches of that part of the hose near the torch, which is subjected to the hardest use, should be cut off as necessary and the hose reattached.
11. No attempt should be made to transfer any gas from one cylinder to another.
12. Should a hose catch fire, close the valve at the cylinder if it is safe to do so. No attempt should be made to extinguish the fire by pinching the hose.
13. When not in use, the hose on Oxy-Acetylene welding units should be closed and pressure should be bled from regulators and hoses after they have been used.
14. The valve at the drum should be closed.

ELECTRICAL

The latest edition of the National Electric Code (NEC) shall be observed in the installation and operation of electrical systems. All employees authorized to work on electrical circuits and their assistants should be trained and prepared to render immediate mouth-to-mouth breathing and cardiopulmonary resuscitation (CPR) techniques. (See Appendix on CPR In Basic Life Support)

General:

1. Unauthorized persons shall not attempt to make repairs to electrical equipment.

2. All unsafe appliances, lines and electrical apparatus should be reported immediately to an electrician and supervisor.
3. Special precautions should be taken for working with high voltage. (See Appendix on Procedures for High-Voltage)
4. Insulated tools and rubber protective devices should be periodically inspected and cleaned, when their condition is in doubt, these articles should be high-potential tested.
5. Touch all electrical equipment enclosures, switches, etc., with the back of your hand. Never use the inside of your hand. Electrical shock makes muscles contract, and it could cause your hand to grasp the equipment.
6. Avoid stepping on or handling live wiring, lighting units, or trouble lights found laying on the floor or ground. Eliminate such hazards by opening the circuit and restoring the items to their proper places.
7. Where applicable, lock-out procedures shall be used when equipment being worked on has controls located away from the equipment. (See Appendix on Lock-Out Procedures)
8. Workers repairing an overhead line shall have the line grounded with an approved grounding set in case the line should be energized accidentally.
9. The location of an underground cable or conduit should be appropriately marked. All buried electrical PVC conduits and any steel conduits with voltage greater than 600 volts should be set in red concrete.
10. Underground cable or conduit vaults should be checked for toxic or flammable vapors before they are entered.
11. Smoke filled cable vaults shall not be entered without protective fresh-air mask breathing equipment.

Enclosure of Electrical Apparatus:

1. Doors and covers of electrical apparatus enclosures shall be kept closed except while repairs are being made.
2. When the enclosure or frame of any electrical apparatus is discovered to be charged, an electrician shall be notified immediately to make repairs.

3. Doors of outside enclosures containing electrical apparatus should be braced or tied open while the apparatus is being repaired or adjusted.
4. The flange area of explosion-proof electrical enclosures should not be painted or sealed in any way that prevents the release of pressure or gases.

Fuses:

1. Before replacing a fuse, always make sure the disconnect is open. Only authorized persons should replace primary fuses such as transformer, disconnect and line fuses. No person should be authorized to replace primary fuses unless they have been fully instructed on the approved safety procedure for this task.
2. Stand to one side when opening or closing a safety switch. Never stand in front of the switch. Open or close the switch in one quick motion.
3. Remove fuses with a fuse puller. Replace them with fuses of the same size. Make sure fuses are in the fuse clips tightly.
4. Keep fuse pullers clean and dry. Even though they are made of an insulating material, if they get wet, greasy or dirty, the moisture or dirt may form a conductor for electricity.
5. Substitutes for fuses, such as pennies, slugs or other makeshift devices are prohibited.

Grounding:

1. All electric motors should be properly grounded according to the NEC.
2. Ground wires for the protection of workers and equipment must not be disturbed. It is imperative that they be properly maintained by a qualified electrician.
3. All non-current carrying enclosures or structures used in electrical apparatus or circuits must be grounded. In a grouping of electrical apparatus, the grounds must be interconnected. Before opening or working on such enclosures or structures, use a volt ohm meter to determine if the ground is effective.

Lighting Equipment:

1. When changing a broken light bulb, or when changing a burned out light bulb in a hazardous area, the circuit must be de-energized and eye protection should be worn. Avoid handling broken bulb fragments. Burned out bulbs should be properly disposed of.
2. Keep the glassware clean on all industrial fixtures to ensure maximum illumination. Never remove protective globes from vapor-proof or explosion-proof fixtures without first de-energizing the circuit. Only remove them for the time it takes to clean or replace them.
3. Safety lamps and extension cords must be kept in good repair. They must be checked for bad insulation and for cracked or broken globes. The cord shall not be used if it is defective. Care should be taken that the cord does not wrap around the arms of any other part of the body. Never stand in water while touching the cord or lamp. Never roll up an extension cord before it is disconnected from the power source. Always apply pulling pressure to the plug, not the cord.
4. Work areas that are not properly lighted should be reported immediately.
5. Portable hand-lights used in hazardous locations must be explosion proof.
6. A portable hand-light should not be used unless the outside globe and guard are in place.

Motors:

Always operate electric motors with the motor starter. Never use the main disconnect switch for stopping a motor except in an emergency.

Power Lines:

1. Unused power lines should be disconnected.
2. Avoid contact with electric power lines. Even contact with low-voltage lines, such as a 110-volt household lighting circuit, can result in death.

3. In all construction work, authorized persons should take special note of overhead lines and see that they are not energized unnecessarily. This precaution is particularly important when cranes are being used to lift materials.
4. Conduct activities at least fifteen feet away from power lines. A constant watch should be kept to maintain this clearance.
5. When high structures or equipment are moved under electrical lines, an electrician should be present. A qualified person must ascertain that there is proper clearance. Whenever possible, the circuit should be opened.

Switches:

1. Approved rubber mats should be provided for persons to stand on while they operate electric multi-switch panels that contain open-type switches. The mats should be of sufficient width, thickness and length to extend across the entire front of the panels. They should be provided in the rear of panel with open-type switches if access to the rear of the panels is possible. Mats must be kept clean, dry and free of oil.
2. The ground area around outside electric switch panels should be graded so that the water will not stand near the panels.
3. When energizing a circuit, do not stand directly in front of an electric panel.
4. Because pole-top switches and similar gang-operated switches are not operated very often, a blade may become stuck or disconnected after the switch mechanism is operated. These switches should be inspected periodically to ensure that the mechanism is in good working order and the ground circuit is intact. When operating switches of this type, approved rubber gloves or an insulated platform should be used.
5. Equipment controlled by automatic switches should have signs that warn of the danger involved. Before working on such equipment, open the disconnect switch and follow prescribed tagging and lock out procedures. (See Appendix on Lock Out Procedures)
6. Switches or circuit breakers that are open to permit work on electrical equipment must be checked with a volt-ohm meter to ascertain that no voltage exists. Handles must be tagged and locked in the "open" position.

Transformers:

Transformer banks on platforms less than eight feet above ground must be adequately fenced. The fence must be properly grounded and a warning sign marked "Danger - High Voltage" should be installed.

HOISTING EQUIPMENT

1. When possible, use a hoist, crane, stiffleg, etc., to lift a heavy load. Never ride on a load being hoisted. (See Appendix on Standard Hand Signals for Cranes) (See Appendix on Applying Wire Rope Clips) (See Appendix on Good & Bad Rigging Practices)
2. All operators of cranes, cherry pickers, and other lifting equipment must know the load capacities of the equipment and must not exceed those capacities. Capacity charts and signs must be placed so the operator can see them clearly.
3. Lifting equipment of any kind must receive an appropriate inspection periodically by qualified personnel. A record of inspection must be retained. Lifting equipment must not be used if it is not working properly.
4. Hooks on all blocks, including snatch blocks, must have safety latches. Rig builders and electrician hooks are exceptions to this rule.
5. All hooks on hoisting equipment should be visually inspected for cracks before the equipment is used.
6. The maximum load specification for the hoist must be noted on the hoist.
7. Never overload the hoist by trying to lift objects heavier than it is designed for or by extending the original length of the mast.
8. Use appropriate outriggers to stabilize lifting equipment, and make sure they are on firm ground or on timber footing.
9. Inspect the hoist and its cable on a regular basis.
10. Always hold tension on the cable when reeling it in or out.
11. Leather palm gloves should be used when handling the cable.

12. Always rig the hoist down and secure it after the work is complete.
13. For a hoist with manual rotation, lock the hoist in the desired position before lifting the load. Ensure that the locking mechanism is working properly. The load can easily swing out of control if the hoist is not correctly locked. Do not attempt to manually rotate a loaded hoist until an adequate number of tag lines are in place and all personnel are positioned clear of the load.
14. For jobs that require horizontal positioning of a load after it has been picked up, a hoist with power rotation should be used if available.
15. All operators and employees working in and around overhead cranes, lifts and bucket trucks, or where there is any possibility of an overhead hazard, must wear A.N.S. I. – approved hardhats.

HYDRAULIC FLEXIBLE HOSE

1. Braided or hydraulic flexible hose must not be used to transfer air or liquid under pressure exceeding 150 psi unless meeting the following considerations:
 - a. The hose must be adequately marked to identify the rated work pressure.
 - b. A hose longer than eighteen inches must be equipped with a suitable safety chain at each end and must be electrically bonded and grounded.

PAINT EQUIPMENT

General:

1. Areas where personnel may be exposed to harmful vapors, gases or fumes should be well ventilated to prevent personnel injury, explosion and combustion. Since many of these products are flammable, fire prevention rules must also be observed.
2. Hot Work permits should be obtained when painting in areas where spark producing equipment is in operation.
3. Respiratory protective equipment, safety goggles, and protective clothing should be worn during paint spraying operation.
4. Protective cream, non-soluble in oil should be spread on the exposed parts of the body.

5. Caustic soda (lye) should not be used to remove old paint. Dispose of waste paint and solvents in a special drum clearly marked "Waste Paint". Paint or solvents must not be poured into drains.
6. Paints and solvents should be stored in an orderly fashion, in accordance with all safety storage practices and good housekeeping procedures.
7. "No Smoking" signs should be posted within the painting area.
8. Rope off or barricade the work areas to protect personnel not involved in the painting operation.
9. Each painter should be familiar with the requirements for fire prevention and the need for adequate ventilation.
10. An adequate number of fire extinguishers must be located in the painting area.

Pressurized Paint Equipment:

1. Only pressurized paint vessels that have been fabricated and certified in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Pressure Vessel Code should be used.
2. Test the safety valves on pressurized equipment daily.
3. The spray nozzles or guns should be equipped with dead-man valves or switches. These valves must not be tied down or secured in any way that would prevent their use.
4. Nozzle, tank and pressure equipment must be ground and periodically checked by an electrician to ensure that the ground connection is operative.

Airless Paint Equipment:

1. Ensure that all fluid connections are tight before starting the pump and that the gun is effectively grounded through the connections and hose.
2. All equipment must be fitted with high pressure fittings. Never allow the use of standard pressure fittings or equipment.

3. High pressure fluid hoses should be checked for kinking, bending or abrasion before work begins and throughout the job.
4. The spray gun should be handled with care. Spray from the gun should not be directed at any portion of the body, especially when the nozzle of the gun has been removed.
5. Personnel should not attempt to change the paint nozzle without first disengaging the trigger of the gun or relieving its fluid pressure.
6. Personnel should not be allowed to disconnect the hose of the gun without first relieving fluid pressure.
7. The spray gun must be equipped with a deadman switch. The manual control must not be tied down or secured in any way that prevents cutoff when it is released.
8. The spray gun must be checked before and during use to ensure proper automatic cutoff control when the gun is released. If the gun does not shut off, the valve should be checked for dirt, wear or improper adjustment.

SANDBLASTING

General:

1. A Hot Work permit must be secured before sandblasting begins in a hazardous area.
2. While performing sandblasting operations, all personnel must wear approved abrasive-blasting respirators and personal protective equipment.

Personnel working in the general area of sandblasting operations must wear dust respirators and other protective equipment.

To the extent possible, avoid working downwind of sandblasting operations. If it is necessary to work downwind, it is recommended that workers wear approved dust respirators or air supplied respirators. Wind conditions may cause the hazard area to vary.

3. Approved first aid and fire equipment must be on hand and crews must be familiar with the proper use of this equipment.

4. Do not sandblast steel surfaces in the vicinity of flammable or explosive mixtures without proper procedures to eliminate the buildup of static electricity.
5. Before sandblasting begins, a supervisor should inspect the work area, the equipment to be sandblasted, and the sandblasting equipment to ensure proper conditions, adequate equipment, and competent operating personnel.
6. Tests for combustible gas must be made in the atmosphere of the intended sandblasting work area immediately before sandblasting operations begin. Because of the danger of sparking, sandblasting must not be permitted in an area where the combustible gas content of the atmosphere is greater than 10% of the lower explosive limit (LEL).
7. Shut down and adequately protect equipment in the vicinity of sandblasting operations, whenever possible.
8. Buildings, equipment, electrical fixtures, and wiring should be adequately protected before sandblasting begins.
9. All sandblast equipment must be inspected and properly assembled, have approved safety devices and gauges, and be properly used.
10. Sandblast hoses must be of the static-dissipating type. Hose couplings must be bronze. Both the couplings and the nozzle holder should have no leaks. The sandblast nozzle must be equipped with a deadman operating valve. The manual control must not be tied down or secured in any way that could prevent automatic cutoff.
11. The air compressor, hose nozzle, sandhopper and the surface to be blasted must be properly grounded.
12. The air compressor must be operated below 220 degrees Fahrenheit and be equipped with spark arresters.

BACKHOE OPERATIONS

1. The operator must be fully qualified and become thoroughly familiar with the backhoe before using it and must read the operator's manual carefully.
2. The unit should be equipped with a roll bar and a seat belt.

3. Use hand holes and step plates when getting on or off the unit. Never enter the unit from the rear.
4. Do not start the engine unless seated in the driver's seat.
5. Operate the backhoe controls only when properly seated at the controls.
6. Seat belts must be worn when the machine is in operation if the machine is equipped with a roll bar. Do not use the seat belt if the roll bar has been removed.
7. Do not permit anyone but the operator to ride on the unit.
8. Keep bystanders in the clear while operating the backhoe or moving the stabilizers. No one is allowed in a bell hole while a backhoe is excavating.
9. Locate utility lines and overhead power lines before starting the dig. Do not operate a backhoe within the fifteen feet of an overhead electric line.
10. Never attempt to lift loads in excess of the backhoe capacity.
11. Never allow anyone to get under the backhoe bucket or reach through the lift arms when the bucket is raised.
12. Use care at all times to maintain proper stability. Drive at safe speeds over rough ground, on slopes, when crossing ditches, and when turning.
13. To prevent upsets when operating on a slope, avoid using the full reach and swinging a loaded bucket to the downhill side.
14. Always center and raise the boom before engaging or disengaging the transport.
15. Do not get off the tractor while it is in motion.
16. Do not lubricate or make mechanical adjustments to the unit while it is in motion or when the engine is running.
17. Never repair or tighten hydraulic hoses or fittings when the system is under pressure, when the engine is running, or when the backhoe cylinders are under a load.

18. Park the unit on level ground when possible. When parking it on an incline, lower the bucket so that the cutting lip contacts the ground, apply the parking brake, and securely block the wheels.
19. Use care in attaching towing lines to the backhoe. Pulling from the tractor rear axle or any point above the axle may cause an accident.
20. Observe proper maintenance and repair of all pivot pins, hydraulic cylinders, hoses, snap rings, and main attaching bolts daily.
21. Maintain the brakes in good working order.

CHERRY PICKER SAFETY PROCEDURES

1. The operator must be fully qualified and become thoroughly familiar with the cherry picker before using it and must read the operator's manual carefully.
2. Never place any part of the machine or load within fifteen feet of high voltage lines.
3. Never exceed load capacities specified by the manufacturer.
4. Transport loads at slow speeds on smooth level surfaces with the boom in the "over front" position and the swing lock engaged.
5. Loads may be telescoped in or out without damage to the boom or the machine as long as the limits of the load capacity chart are not exceeded.
6. When a wire-rope hoist is equipped with a free drop option, the load which can be handled under controlled free fall conditions must not exceed 3,500 pounds or 90% of the maximum allowable lift capacity, whichever is less.
7. The cherry picker is least stable when the boom is operating from the side position.
8. Rear-axle lockouts must be engaged at all times when the machine is swinging or lifting a load. They can be disengaged when the machine is being transported, if the boom is in the "over front" position.
9. Do not operate the cherry picker at boom lengths and boom radius which are not listed on the chart. Under extreme conditions, the machine may overturn even without a load on the hook.

10. Do not reverse the swing control until the swinging motion of the boom has stopped.
11. The cherry picker is designed for only one operator in the cab. Riders are not permitted in the cab with the operator.
12. The qualified spotter should assist the operator in placing or retrieving a load. The spotter should not be in a position where the load may fall and cause injury. Use only one spotter. A confused operator is more likely to have accidents.
13. Always set the parking brake before leaving the machine.

DITCHING MACHINES

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General:

The operator must be fully qualified and become thoroughly familiar with the ditching machine before using it and must read the operator's manual carefully.

Storage and Transport:

1. Roll bars must be installed on riding machines.
2. Use the crawl gear when putting the ditcher on a trailer.
3. When the ditcher is being stored or transported on a trailer, lower the boom and leave the ditcher transmission in gear.
4. When the ditcher is in tow, be sure the front end is securely fastened to the trailer.
5. Bystanders must stand clear of an operating machine and its load.
6. Always use the steps and handholds provided when mounting or dismounting the machine.

Operations:

1. Locate utility lines, power lines, and buried pipelines before starting to dig. Manually dig across lines.
2. Only the operator is allowed on the ditcher while it is in operation.
3. Seat belts must be worn.
4. Do not get off the ditcher while the machine is in operation.
5. Do not add gasoline to the ditcher while it is running.

WINCHES AND WIRELINES

1. Wireline drums should be equipped with approved guards.
2. When a winch line is being used, only one person should give hand signals to the operator, and the operator should not tighten up or slack off on the line until a signal is given. (See Appendix on Standard Hand Signals for Crane Operation)
3. Make sure a winch is out of gear by putting the vehicle in neutral and letting out the clutch before putting the transmission in gear.
4. All persons should use great care when working near a winch line because it may become taut or slack without warning. Never step over a winch line.
5. Use great caution while unrolling a wireline from the manufacturer's shipment spool. If slack develops, a loop could form and envelope a worker's arm, leg or neck.
6. Workers should keep clear of any object that is being raised or pulled. Tail lines of proper length should be used to guide a load where applicable. Tail lines should not be wrapped around the hand or wrist.
7. Wirelines must not be subjected to overloading.
8. A winch should be left in gear when lowering a load.

9. A winch line must not be spooled by hand unless an operator is at the controls, and then only when the person spooling the line is wearing leather-palmed gloves.
10. When wirelines are being guided on drums, an extension device three feet long or longer must be used to prevent workers from coming in contact with a line or drum. When this operation is being performed, someone must be at the drum controls.
11. Winch lines should be cut back or replaced when wire strands become worn or frayed.
12. When a wireline is to be cut, the line should be wrapped on each side of the point where the cut is to be made. Use of an approved wire-rope cutter is recommended.
13. If possible, all hand-operated winches should be equipped with wheels instead of cranks and should have safety devices to prevent backlashing.

OPERATIONS IN THE PUBLIC WAY

Whenever operations are taking place in streets, parkways, sidewalks or other places where citizens as well as employees may be endangered, the supervisor or crew leader on the work site is as responsible for the safety of the public in this type of operation as for getting the job done. The supervisor must spend ample time before, during and after the work to protect employees and the public from the hazards created by this work. The following procedures are to be followed:

1. If street construction or repair work is to be done, preparations will be made to assure vehicle and pedestrian safety before such work is allowed to begin.
2. If traffic is affected by the operation, proper signing must be used to warn in advance of the work area and traffic control signs in and around the affected area are to be correctly placed and maintained through the period when work is being performed and traffic obstructions exist.
3. When barricades and signs are used overnight, supervisors will examine the work area for proper placement at the end of the workday.
4. Lighted barricades will be used whenever possible for overnight protection.

5. Where traffic must be periodically stopped or obstructed by workers or equipment in the traveled portion of a roadway, a flagman wearing a protective vest will be stationed.
6. All workers in or near the roadway will wear reflective vests or cross straps on their clothing while at the work site.
7. Flagman will be used to slow or direct traffic where the approach to the work area does not provide adequate visibility to drivers.
8. All plates used to cover holes in the street on a temporary basis are to be "spiked" in place.
9. In any case where streets are significantly obstructed or closed for any period of time, Fire and Safety will be notified of the situation and told approximately how long the closure will be in effect.

PEDESTRIAN SAFETY

1. When pedestrian traffic is impeded by barricades, restrictive tape, rope or other restraint will be used to keep the public from the work site.
2. If pedestrian traffic must be routed off sidewalks and into the street, protection will be provided by cones, barricades and signs, to guard from vehicular traffic.
3. Holes in the sidewalk or parkway which must be left open will be covered whenever possible along with perimeter protection. Every possible means of preventing accidental entry into the hole should be used. Keep in mind that darkness and snow can complicate this situation.
4. When an unusual situation exists that cannot be easily resolved, or when personal injury or damage to equipment or property occurs as a result of operations, contact the responsible supervisor, immediately.

PURCHASING PROCEDURES AND SAFETY

Equipment, commodities and services that are purchased for use by SWOSU employees must conform to industry standards as well as Federal and State codes and manufacturing requirements.

The following general statement shall be used in the standard purchasing documents for all purchases under contract:

“The equipment you would supply to Southwestern Oklahoma State Univ. must comply with all requirements and standards as specified in the federal government’s occupational Safety and Health Act of 1971. All guards and protectors as well as appropriate markings will be in place before delivery. Items not meeting OSHA specifications will be refused.”

Specialized equipment usually is constructed with components that are designed, built or tested to standards prepared by Underwriters Laboratories (ULL), American Society for Testing and Materials (ASTM), American Society of Mechanical Engineers (ASME), or American National Standards Institute (ANSI) to name a few. It is simple to determine if certification is present and if so, such specification requirements will serve to reaffirm not only the commitment to safety of the employees, but the usable life of the equipment as well as its appropriateness for the job.

SECTION 5 FIRST AID

INTRODUCTION

The American Red Cross defines first aid as the “immediate and temporary care given the victim of an accident or sudden illness until the services of a physician can be obtained”. Effective first aid consists primarily of common sense and a few simple rules.

The following conditions require the basic life support procedures be used immediately.

1. Severe bleeding - If a large blood vessel is severed, enough blood can be lost in one or two minutes to cause death.
2. No breathing/circulation - Death or brain damage can occur in four to six minutes if breathing or circulation is not restored.
3. Poisoning - Every second counts in preventing further injury.

GENERAL

1. The primary objective in first aid is to sustain life by utilizing basic life support techniques to:
 - a. Maintain an airway.
 - b. Maintain breathing.
 - c. Maintain circulation.
 - d. Control bleeding.
 - e. Treat for shock.
 - f. Get medical care for the victim.
2. The first aid provider must avoid panic, offer reassurance, inspire confidence, and do no more than necessary until medical help arrives.

3. If there is no dispensary, clinic or hospital in the near proximity of the work site to treat employees, one or more employees must be adequately trained to render first aid.

First aid supplies will be kept on site. Risk Management recommends that the contents of the first aid kits be limited to basic supplies of bandages and compresses and that no oral medication be included in the kits.

SEVERE BLEEDING

1. Severe bleeding results from wounds to large vessels. Bleeding must be controlled quickly. Do not waste time - apply direct pressure over the wound. The following procedure should be used in the event of severe bleeding:
 - a. Place a clean pad, handkerchief or cloth over the wound and press firmly with your hands. If you do not have a pad or bandage, close the wound with your hand or fingers.
 - b. Apply pressure directly over the wound.
 - c. Hold the pad firmly in place with a bandage, necktie, cloth strip, etc.
 - d. Raise the bleeding part higher than the rest of the body unless bones have been broken.
 - e. Keep the victim lying down.
 - f. Keep the victim warm. Cover the victim with blankets or coats, and put something under the victim when found lying on a cold or damp surface.
 - g. If the victim is conscious and can swallow, and if abdominal injury is not suspected, give plenty of liquid (such as water, tea or coffee).
 - h. Get medical help. (See Appendix on Emergency Medical Services System)
2. A tourniquet should only be used to treat severe, life-threatening bleeding that cannot be controlled by other means (usually an amputated, mangled or crushed arm or leg, or when bleeding involved several arteries). The procedure for applying a tourniquet is as follows:

- a. Use only a strong, wide piece of cloth. Never use wire, rope, twine or other narrow materials.
- b. Place the tourniquet immediately above the wound, between the body and the edge of the wound. Some normal skin should be left between the tourniquet and the wound. If the wound is near a joint, place the tourniquet at the closest practical point above the joint.
- c. Make sure the tourniquet is just tight enough to stop the bleeding. If possible, attach a card to the victim showing the time and place the tourniquet was applied.
- d. Once the tourniquet has been applied, the victim should be taken to a medical facility immediately. The tourniquet should only be removed by a physician or medical personnel prepared to control bleeding.
- e. Experience has shown that a properly applied tourniquet can be left in place for one to two hours without causing further damage to the extremity.

NO BREATHING/CIRCULATION

1. A person whose breathing and circulation have stopped will die or suffer brain damage if these functions are not restored in four to six minutes. The initial evaluation of a victim should follow the procedures developed by the American Red Cross for basic life support, called "ABC Evaluation".
 - a. Airway - After assuring yourself that the victim is unconscious, open the airway by tilting the head back. Look into the mouth and remove anything that is blocking or could potentially block the airway. This includes gum, partial plates, and chewing tobacco.
 - b. Breathing - Determine whether the victim has stopped breathing or not. Do this by placing your cheek next to the victim's nose and mouth the feel an exchange of air. At the same time, watch for any chest movement.
 - c. Circulation - initially place the tips of two fingers on the larynx (voice box) and slide them gently into the groove between the voice box and the large muscle of the neck. This is the location of the carotid artery where you can feel if the heart is circulating blood.

If breathing has ceased, begin mouth - to - mouth or mouth - to - nose resuscitation. If circulation has stopped, begin external cardiac massage. When combined, these procedures are known as cardiopulmonary resuscitation (CPR). To be performed effectively, they must be learned in a certified course. Although the procedures will be briefly discussed in this section, the discussion is not intended to replace an official course. (See Appendix on CPR In Basic Life Support)

2. The following CPR procedure should be performed by a single rescuer after evaluating indicates that breathing and circulation have stopped.
 - a. Deliver two full breaths using mouth-to-mouth or mouth-to-nose breathing. Maintain an air-tight seal with your mouth on the victim's mouth or nose.
 - b. Place the heel of one hand over the lower half of the sternum (breastbone) and place the other hand on top of the first hand. Keeping the arms straight and shoulders directly over the sternum, compress the victim's chest one and one-half to two inches, smoothly and evenly. This procedure compresses the heart between the sternum (breastbone) and the backbone, forcing it to circulate blood. Deliver this thrust fifteen times at the rate of approximately eighty to one-hundred times per minute.
 - c. After fifteen compressions, immediately tilt the victim's head back and deliver two full breaths mouth-to-mouth.
 - d. Repeat the cycle of delivering fifteen compressions and two breaths until medical help arrives.
 - e. Once a minute, check the carotid artery for a pulse. Do this between compressions and the two breaths.
 - f. If you feel a pulse, deliver one breath every five seconds while ensuring that circulation is still present. If breathing and circulation return, keep a close watch over the victim in case these processes stop again.

HEART ATTACK

1. For heart attack victims, use the following procedure:
 - a. Do ABC evaluation. Begin CPR if breathing and circulation have ceased. Continue CPR until the vital signs have been restored.

- b. If breathing and circulation are present, keep calm and reassure the victim.
- c. Loosen the clothing and help the victim get into a comfortable position (usually halfway between lying and sitting). Do not carry or lift the victim more than necessary. Have someone call for medical help.
- d. Do not give the victim any liquids without a doctor's advice.

CHOKING

- 1. Do not interfere with a choking victim who can speak, cough or breath. However, if the choking continues without lessening, call for medical help.
- 2. If the victim cannot speak, cough or breath, take the following action until medical help arrives:

- a. For a conscious victim:

Stand just behind the victim, who can be standing or sitting. Wrap your arms around the victim's middle just above the navel. Clasp your hands together in a doubled fist and press in and up in quick thrusts. Repeat this maneuver several times. If choking continues, repeat a cycle of four quick thrusts until the victim is no longer choking or becomes unconscious.

- b. For an unconscious victim:

1) Place the victim on the ground and deliver rescue breathing. If the victim does not start breathing and if it appears that your air is not going into the victim's lungs -

2) Roll the victim face-up and deliver manual thrusts. To deliver the thrusts, place one hand on top of the other, with the heel of the bottom hand in the middle of the abdomen, slightly above the navel and below the rib cage. Press into the victim's abdomen with a quick upward thrust 6-10 times. Do not press to either side. Look in the mouth, if you can see the obstruction -

a) Hold the victim's mouth open with one hand, using your thumb to depress the tongue.

- b) Make a hook with the middle finger of your other hand, and, in a gentle sweeping motion, reach into the victim's mouth and sweep out the foreign object. Repeat the following procedure until the air passage is clear: administer six to ten abdominal thrusts, look in the mouth, sweep if you see the foreign object and try to inflate the lungs.
- 3) If the object has not been retrieved, but the victim suddenly seems all right, take the victim to the hospital anyway. This is particularly important if the swallowed object is a fish bone, chicken bone, or other jagged object that could cause internal damage if it passes through the victim's digestive system.

INHALATION OF TOXIC GAS OR SMOKE

1. Remove the victim from the contaminated area. Do not enter the contaminated area without respiratory protection. Never try to rescue a person by holding your breath and entering the contaminated area. Even with proper respiratory protection, it is dangerous to enter a contaminated area alone or without standby help. Do not try to rescue someone by yourself if you can find help quickly.
2. As soon as you have the victim in a safe area, perform the following procedure.
 - a. Perform the ABC evaluation. If breathing and/or circulation has stopped, begin CPR.
 - b. If breathing and circulation are present, keep the victim lying down until medical help arrives.

ELECTRIC SHOCK

1. For a victim of electric shock, perform the following procedures:
 - a. Throw the switch to turn off the current, or use a dry board or stick to remove the electric contact from the victim.
 - b. Do the ABC evaluation and begin CPR if breathing and/or circulation have ceased.

- c. If breathing and circulation are present, remain with the victim until medical help arrives. It is important that an individual who has suffered an electric shock be evaluated by a physician, as electric shock can severely injure many parts of the body.

BURNS

Burns can result from extreme temperatures (thermal burn) or from chemicals (chemical burn). Burns are very painful and can be complicated by shock, contamination and dehydration.

Extensive Thermal Burn:

1. For victims of extensive thermal burns, use the following procedure:
 - a. Wet the victim's remaining clothing with cool or cold water as quickly as possible to reduce burning.
 - b. Place the cleanest available cloth over all burned areas to keep air away from the burn. Wet the burn with cool or cold water to reduce heat.
 - c. Have the victim lie down.
 - d. Place the victim's head and chest a little lower than the rest of the body, and raise the legs if possible.
 - e. If the victim is conscious and can swallow, give plenty of non-alcoholic liquids to drink (water, tea, soft drink, etc.).
 - f. Obtain the services of a physician as soon as possible.

Small Thermal Burn:

1. Use the following procedure on victims of small thermal burns.
 - a. Soak a sterile gauze pad or clean cloth in cool or cold water. Place the cold pad over the burn.
 - b. Do not disturb or open blisters.
 - c. If the skin is not broken, immerse the skin in clean, cold water, for no more than 10 minutes.

Liquefied Petroleum Gas (LPG) or Cold Burn:

Liquefied Petroleum Gas (LPG) is composed of ethane, propane, butane and their isomers. These gases are colorless and flammable. When they are handled or shipped as liquids, they have a vapor pressure of 16 psig or 550 psig at 70 degrees Fahrenheit. They are low in toxicity, slightly anesthetic, and have a mild odor ranging from aromatic to slightly disagreeable.

1. LPG produces injury by freezing, as does dry ice. Simple burns on the skin should be treated by flushing the skin with water. The burn may be either bandaged or left open. Extensive burns should be examined by a doctor.
2. LPG is most destructive when it gets into the eyes. Therefore, safety or chemical goggles should be worn when handling the liquid gas. If liquid LPG hits the eye, flush the eye with large amounts of water and refer the victim to a physician as soon as possible.

Chemical Burn of the Skin:

1. Use the following procedure for victims of chemical burns:
 - a. Immediately flush the burn with water. Speed helps reduce the extent of the injury.
 - b. Apply a stream of water to the burn while removing the victim's clothes.
 - c. Place the cleanest available material over the burned area.
 - d. If the burn area is extensive, have the victim lie down. Place the head and chest a little lower than the rest of the body, and raise the legs if possible. Extensive burns should be examined by a doctor.

Chemical Burn of the Eyes:

Check the victim's eyes for contact lens. Remove them if they are present. Wash the eyes by plunging the head into a vessel of clean water and having the victim blink rapidly, or by allowing water from a drinking fountain or hose to flow into and flush the eyes. If neither of these procedures can be done immediately, pour clean water into the victim's eyes from a drinking cup. It is a good practice to keep an eyewash bottle filled with clean water available for emergency use. If the victim's eyelids will not remain open, get another person to hold the lids open, and wash the eyes for fifteen minutes. Use only water to wash chemical burns. Never use another chemical to flush the burns, because this can increase the extent of the injury.

EXPOSURE TO CRUDE PRODUCTS (OIL, GAS)

1. An individual, overcome by vapors, must be removed from exposure immediately. A physician should be called. If breathing is irregular or stopped, administer artificial respiration.
2. If a liquid petroleum product is swallowed, do not induce vomiting. Call a physician or poison control center promptly.
3. For skin contact, remove contaminated clothing and wash the skins with soap and water. If the petroleum liquids splash into eyes, wash the eyes with clear water for fifteen minutes or until irritation subsides.

SHOCK

Whenever someone suffers from trauma or emotional upset, shock may be present. Shock must be considered as a possible complication of every injury and severe illness. Shock occurs when the circulation to vital organs of the body (especially the brain) slows down. This condition is severe and can be life-threatening if it is not corrected.

1. The symptoms of shock include the following:
 - a. Cold, Clammy skin.
 - b. Shallow breathing.
 - c. Rapid pulse.

- d. Victim feels cold; may even be shaking.
 - e. Weakness.
 - f. Confusion or disorientation.
2. Shock should be treated as follows:
- a. Have the victim lie down.
 - b. Keep the airway open. If the victim vomits, turn the head to the side so the neck is arched with the chin pointing down.
 - c. If the victim complains of being cold, use a blanket or coat for a cover.
 - d. Increase circulation to the brain by elevating the victim's legs so that the head is lower than the body.
 - e. Reassure the victim.
 - f. If the victim is conscious and can swallow, administer fluids (water, tea, soft drink, etc.).
 - g. Never give the victim alcoholic beverages.
 - h. Do not give the victim fluids if you think the abdomen may be injured.

HEAT EXHAUSTION

1. The symptoms of heat exhaustion include the following:
- a. Pale, cold, clammy skin.
 - b. Rapid, weak pulse.
 - c. Weakness, headache or nausea.
 - d. Cramps in abdomen or limbs.
 - e. Excessive perspiration.

2. Heat exhaustion should be treated as follows:
 - a. Move the victim to a cool place in the shade.
 - b. Have the victim lie down so the head is lower than the rest of the body.
 - c. Give the victim water to drink and, if available, stir one-quarter teaspoon of salt into the water.
 - d. Get medical help.

HEAT STROKE

Heat stroke is life threatening, and immediate measures must be taken to cool down the victim and get medical care.

1. The symptoms of heat stroke include the following:
 - a. Flushed, dry hot skin.
 - b. Rapid, strong pulse.
 - c. Temperature is well above normal, and skin feels hot to the touch.
 - d. Headache, dizziness, nausea.
 - e. Often the victim is unconscious.
2. Heat stroke should be treated as follows:
 - a. Move the victim to a cool place.
 - b. Treat for shock.
 - c. Cover the entire body with cold water, using either a sponge or a hose. Cover the victim with ice, if it is available. Obtain medical help immediately.

FROSTBITE

1. The symptoms of frostbite include the following:
 - a. The affected area is white to grayish-yellow in appearance.
 - b. The victim initially feels pain that quickly subsides.
 - c. Victim feels cold and numb and may not have feeling in frostbitten areas.
2. Frostbite should be treated as follows:
 - a. Cover the frostbitten area with a warm hand or woolen material. Do not rub the area.
 - b. Have the victim hold the affected hand in the armpit if fingers or hands are frostbitten.
 - c. If possible, move the victim inside and place the frostbitten area in lukewarm water.
 - d. If lukewarm water is not available, gently wrap the frostbitten area in blankets.
 - e. Let circulation reestablish itself naturally. When the frostbitten area has warmed up, encourage the victim to exercise it gently.
 - f. Give the victim a warm, non-alcoholic beverage.
 - g. Never rub the injured area with snow or ice. This causes further damage to the tissue and increases the risk of gangrene.
 - h. Never use hot water, hot-water bottles, heat lamps, or campfires to thaw frostbite.

HYPOTHERMIA

Hypothermia is a reduction in body temperature caused by the insufficient generation of heat. Hypothermia may occur at temperatures both above and below freezing, and it is especially common in wet environments. Also, wind combined with cold weather makes the body temperature drop faster than calm, cold weather does. If hypothermia is not recognized and treated quickly, it may result in death. (See Appendix on Wind Chill)

1. The following precautions help prevent hypothermia:
 - a. Before going outside, rest and eat properly.
 - b. Continued food intake once outside.
 - c. Make sure clothing and outerwear are windproof and waterproof.
 - d. Carry emergency survival equipment.
 - e. Before beginning an outdoor task, think about what you will do if you must remain at the location overnight. Make sure you have the shelter to carry out that encampment.
 - f. When working in a cold environment, reduce sweating by removing clothing layers and then putting them back on when you rest.
 - g. Exercise (isometric) to help the body produce heat.
2. The symptoms of hypothermia include the following:
 - a. The signs observed by others are poor coordination, slowness, stumbling, thickness of speech, amnesia, irrationality, poor judgment, hallucinations, bluish or puffy skin, dilated pupils, decreased heart and respiratory rates, weak or irregular pulse, and stupor.
 - b. The symptoms noticed by the victim include intense shivering, muscle tenseness, fatigue, numbness or coldness, poor coordination, stumbling, poor articulation, disorientation, a decrease in shivering followed by muscles going rigid, bluish or puffy skin, and slow, irregular or weak pulse.
3. Hypothermia should be treated as follows:
 - a. Reduce heat loss by sheltering the victim from wind and weather.
 - b. Isolate the victim from the ground. Replace wet clothing with windproof, waterproof clothing, and have the victim increase exercise level if possible.

- c. Administer heat by giving the victim hot drinks. Do not give the victim alcoholic beverages.
- d. Make the victim huddle with others for body heat. Obtain medical help immediately.

IMMERSION HYPOTHERMIA

Immersion in near-freezing water for only a few minutes while inadequately dressed uses rapid and total body cooling. If immediate action is not taken, death may result.

1. The following precautions help prevent immersion hypothermia:
 - a. Wear an insulated life vest, or preferably, a float coat. The device must be zipped and hooked properly in order to insulate and keep you afloat.
 - b. Stay alert and out of the water.
 - c. If you should fall into cold water, move as little as possible. Keep your head out of the water, your legs drawn up to your chest, and your arms crossed over your chest. This position conserves body heat and improves your chance of survival.
2. The symptoms of immersion hypothermia are identical to those of hypothermia: (See Rule 2 of This Section on Symptoms of Hypothermia)
3. Victims of immersion hypothermia should be treated gently and warmed immediately.
 - a. Remove wet clothing and wrap victim in blankets.
 - b. Do not allow the victim to exercise or move, because activity increases the flow of cold blood from the extremities to the heart.
 - c. Warm liquids are only appropriate for immersion victims with body temperature above 90 degrees Fahrenheit.

IMMERSION FOOT (TRENCH FOOT)

Immersion foot affects only the feet. It results from wearing boots and socks that are very cold and wet for prolonged periods of time.

1. To prevent immersion foot, put on dry socks and re-warm your feet every six or eight hours.
2. The symptoms of immersion foot are similar to those of frostbite: a sense of cold to numbness to false warmth, dead skin turning white, and impaired motion of the toes.
3. To treat immersion foot, re-warm and dry the feet, using the treatment for frostbite. (See Rule 2 of This Section on Treatment of Frostbite)

SNOWBLINDNESS

Snowblindness occurs when the eyes are burned by ultraviolet rays from the sun. Sunlight intensity increases when reflected off snow, water or ice.

1. To prevent snowblindness, wear protective glasses or goggles, even on overcast days.
2. The symptoms of snowblindness are usually delayed for two to twelve hours after exposure. Symptoms include: red, tearing and burning eyes; headache; scratchy eyelids and painful eye movement.
3. The treatment for snowblindness depends on the severity of exposure. Have the victim take aspirin and rest in a darkened room with the eyes bandaged to stop eye movement. The victim may need cold compresses and even an anesthetic eye ointment. Snowblindness heals in a few days, but victims tend to suffer recurrently from the problem.

POISONOUS PLANTS

Skin poisoning can result from contact with poison ivy, poison oak, or poison sumac.

1. Symptoms include itching, redness or blisters on the skin after contact with poison plants.

2. To treat contact with poison plants, take the following steps:
 - a. Remove the victims clothing from the affected area. Be careful not to let the clothing drag across unaffected skin. It may be necessary to cut the clothing away from the affected areas.
 - b. Wash the exposed area with mild soap and water. Lather and rinse several times.
 - c. If blisters appear on the skin, call a physician. (See Appendix on Poisonous Plants)

SWALLOWED POISONS

It is impossible to cover the hundreds of kinds of poisoning and the guidelines for treatment of each. Professional advice should be obtained as soon as possible. Assistance may be obtained by contacting the SWOSU Dept. of Public Safety, the University Nurse or Emergency Medical Services.

1. The following guidelines for treatment apply in most cases.
 - a. Try to identify the substance ingested.
 - b. Call a physician, emergency room, or poison control center for advice. If you cannot identify the poison, have the victim drink milk or a solution of milk and raw eggs to coagulate the material.
 - c. Follow the advice of the physician or poison control center. Induce vomiting only upon their instructions.

INHALATION OF HYDROGEN SULFIDE (H₂S)

1. The toxicity limits for hydrogen sulfide (H₂S) are as follows:
 - a. Up to 10 ppm (1/1000 of 1%) - This amount can be smelled and is safe for eight hours of exposure.
 - b. Up to 100 ppm (1/100 or 1%) - This amount may sting the eyes and throat. It kills the sense of smell in three to fifteen minutes.
 - c. 500 ppm (5/100 of 1%) - This amount can cause a loss of balance. It may cause respiratory paralysis in thirty to forty minutes.
 - d. 1,000 ppm (1/10 of 1%) - This amount may cause instantaneous unconsciousness. It can cause death or permanent brain damage as a result of oxygen deficiency.
2. H₂S inhalation should be treated as follows:
 - a. First, be sure rescuers have proper respiration protection before they enter a contaminated area.
 - b. Carry the victim into fresh air immediately. If the victim is breathing, you may not need to do anything else.
 - c. Perform an ABC evaluation. If the victim is not breathing, begin mouth-to-mouth resuscitation. If circulation has stopped, commence external cardiac massage.

INSECT STINGS

1. To prevent insect stings, the work area where these insects make nests should be inspected and sprayed frequently with an approved insecticide.
2. A person who is stung by a wasp, bee, yellow jacket, ant, fire ant, or other stinging insect will suffer pain and mild swelling.
3. To treat insect stings, the stinger should be removed if it can be done easily and ice should be applied to the area by gently rubbing an ice cube on the bite sites. Normally, nothing more needs to be done.

4. Some people are hypersensitive to insect stings. These people react to stings with great swelling, or they develop hives beyond the area of the sting. Some hypersensitive people have difficulty breathing, or collapse entirely. Usually, these people are aware that they are reacting more severely to each new bite. These reactions can be life-threatening and medical help should be obtained immediately.
5. A hypersensitive person should obtain a kit to carry at all times, to be used in the event of a sting. Associates and the person's supervisor should be told the person is hypersensitive to insect stings.

VENOMOUS SNAKEBITES

The snake belt for venomous snakes lies mainly in the South and Southwest, but all states, with the exceptions of Alaska, Hawaii and Maine have poisonous snakes.

Venomous snakes in the United States include the rattlesnake, copperhead, cottonmouth (water moccasin), and the coral snake.

The first three snakes are all members of the pit viper family. The most prevalent of these is the rattlesnake, which accounts for almost 60% of all bites and virtually all fatalities. The fangs of the pit viper leave puncture wounds, usually two. (All non-poisonous reptiles leave a row of teeth marks when they bite.) The other venomous snake is the coral snake, which is small, multi-colored and highly toxic. Fortunately, this reptile is not aggressive and has a small mouth, so it must bite and chew the venom into the wound.

1. Basic first aid for the pit vipers (rattlesnake, copperhead, cottonmouth) consists of the following:
 - a. Do not elevate the bite because this hastens the spread of venom. Keep the bite at the level of the heart.
 - b. Assure the victim that everything will be all right.
 - c. Keep the victim warm, but do not apply heat to the wound.
 - d. Keep the victim calm and quiet.
 - e. Transport the victim to a medical facility as soon as possible.

- f. Attempt to identify the snake by a method that will not expose someone to additional danger. Kill it if possible.
2. The following procedure should be performed if less than fifteen minutes have elapsed since the victim has been bitten and if it would require more than an hour to reach a medical facility:
 - a. Place a constricting band (not a tourniquet) two to three inches above the bite. This band is not intended to restrict the flow of blood, and you should be able to insert at least one finger between the band and the skin:
 - b. Make two incisions with a sharp knife, razor blade, or blade from a snakebite kit, one through each fang mark, (do not make an "X"). The incision should be one-fourth inch long and one-eighth inch deep, just deep enough for blood to start oozing.
 - c. Apply suction to the wound using the rubber suction cup from the snakebite kit. Do not use your mouth especially if you have sores.
3. To treat the bite of the coral snake, use the following procedure:
 - a. Wash the area promptly with clear water, if some is available.
 - b. Transfer the victim to a medical facility as soon as possible. (Suction and a constricting band are ineffective for coral snake bites.)
4. Additional points that should be remembered include the following:
 - a. Remain calm. Very few people actually die from snakebites.
 - b. If you have a radio or telephone, notify someone of your exact location.
 - c. Do not elevate the bite because this hastens the spread of venom. Keep the bite at the level of the heart.
 - d. Do not apply ice or a cold pack to the bite. In order to get human tissue cold enough to stop the spread of venom, it must be frozen and the tissue would therefore be destroyed.

- e. Do not give the victim alcoholic beverages.
- f. Do not sacrifice safety for speed on the way to the medical facility.
- g. Do not allow the victim to run, because this will speed up circulation and hasten spread of the venom.

SPIDER BITES

There are over 1,000 species of spiders, the majority of which produce venom. However, very few spiders can penetrate human skin to inject venom. Two that can, and whose venom may be as poisonous as the venom of snakes, are the black widow and the brown recluse (fiddleback). The black widow spider is usually found in dark, moist places. It is usually jet black in color and has a red hour-glass mark on its abdomen. The bite of this spider immediately causes severe pain at the bite site.

The brown recluse (fiddleback) is normally found in sheds, houses, closets and under leaves. It has a violin-shaped mark on its back. The bite of this spider causes little or no immediate pain. Many times, the victim is not aware of the insect bite until several hours have passed and a crusted wound surrounded by a black bulls-eye appears at the bite site. This wound is an indication that tissue damage caused by the venom has occurred. This can cause tremendous disability to the victim as the venom literally destroys all the tissue it encounters.

1. One or all of the following symptoms can occur from a either spider bite or venomous snakebite:
 - a. Swelling and pain at bite site.
 - b. Headache.
 - c. Nausea or vomiting.
 - d. Joint pain.
 - e. Muscle cramps.

2. To treat a spider bite, use the following procedure:
 - a. Have the victim lie down.
 - b. Constrictive bands and incision-suction are not effective for a spiderbite.
 - c. Take the victim to a medical facility as soon as possible.
 - d. If pain is severe, an ice cube can be massaged on the bite site. This will help relieve the pain. Do not apply ice or cold packs to the wound for a prolonged period of time.
 - e. Do not allow the victim to walk.
 - f. Do not give the victim alcoholic beverages.

SECTION 6 OFFICE AND WAREHOUSE SAFETY

SAFETY EQUIPMENT PROCEDURES

1. Keep current emergency telephone numbers for Fire and Safety and medical aid near the telephone.
2. Become familiar with all exits and building evacuation procedures. An evacuation plan should include both primary and secondary escape routes.
3. Know where first aid kits are located. You should also know who has been trained in first aid and cardiopulmonary resuscitation (CPR) procedures and where these people are located.

EMERGENCY PROCEDURES IN CASE OF FIRE

1. Know how to report a fire. (See Appendix on SWOSU Emergency Procedures Guide - Section "Fire/Evacuation")
2. Know the location and operating methods of all firefighting equipment in the building.
3. Know which type of extinguisher is effective on wood, oil, grease and electrical fire. (See Appendix on Classification of Fires and the Rating of Portable Extinguishers)
4. Be familiar with survival techniques in case you are trapped by a fire.
 - a. Do not use elevators. Use stairways to exit.
 - b. If caught in a smoke-filled area, crawl on the floor and take short breaths through your nose. If possible, hold a cloth in front of your face.
 - c. Before opening a door, touch it to check its temperature. If it is hot, do not open it.

OFFICE FURNITURE AND EQUIPMENT

Files and Cabinets:

1. Whenever possible, arrange filing cabinets side by side and bolt them together.
2. For single cabinets, do not overload the upper drawers, and have only one drawer open at a time.
3. Close desk and file cabinet drawers when they are not in use. Never leave an open drawer unattended.
4. Avoid placing cabinets and files so that open drawers block passageways.
5. Never stack separate two-drawer filing cabinets unless they are designed to be stacked and can be fastened together.
6. Do not stack bookcases or file cabinets on top of tables or desks unless designed for such use. Even if bolted to a wall, they may fall if the table is moved because of excessive weight.
7. Large files, cabinets and bookshelves should be bolted to the wall, particularly in libraries or file rooms.
8. Never attempt to move heavy file cabinets without proper assistance.

Other Furniture:

1. Always use an approved ladder to reach articles high above the floor. Never use a swivel chair or other makeshift device to reach high places.
2. Sharp burrs on metal furniture and splintered edges on wooden furniture should be repaired or replaced. Glass desk tops are not recommended and should be replaced when broken.
3. Keep furniture in proper repair. Repair sticky drawers, replace broken casters, and replace warped, cracked or broken seats on chairs. Warped, cracked or broken chair mats which create a stumbling hazard should be replaced.

4. Use typewriter stands or platforms designed to carry the weight and size of the machine. Use caution when pulling out a spring-loaded typewriter platform from the desk. Never use such a platform for anything other than its intended purpose.
5. Avoid storing heavy objects above eye level in the office.
6. Secure pictures and wall hangings with the proper fasteners.
7. Desk chairs should be stable and level. You should not tilt back or put your feet on top of the desk.
8. Make aisles wide enough for easy passage and always keep them clear of obstructions.

Electrical Equipment:

1. Arrange to have worn electrical cords replaced promptly by qualified personnel. Never attempt electrical repairs unless you are qualified to do the work.
2. Keep walking areas clear of telephone and electrical repairs unless you are qualified to do the work.
3. Electrical outlets must not be overloaded. Bear this in mind when using portable electric heaters. Use only properly grounded three-pronged plugs or Underwriters Laboratories (UL) approved double-insulated appliances.
4. Dry your hands thoroughly before plugging, unplugging or operating electrical equipment.
5. Turn off the power overnight for copiers, coffee machines, desk lamps and other electrical devices as required to meet building safety requirements. Always turn off and unplug portable electric heaters when leaving the office.
6. Where a microwave oven or other radiation device may be in use, signs announcing the possibility of this activity must be posted at all entrances to the area.
7. Keep coffee and other beverages away from electrical equipment such as copy machines.

8. Paper shredders should be operated with extreme caution. Keep ties, dangling jewelry and loose clothing from machines by standing to the side of the machine. Always stand in a position that is accessible to the "off" switch. Always turn off after each use and do not force paper. Do not attempt to unjam the shredder unless the power is turned off.
9. Unplug electric staplers and pencil sharpeners before opening them for cleaning or repair.
10. Replace burned-out light bulbs or fluorescent bulbs promptly.

Flammable and Hazardous Materials:

1. Keep all flammable materials away from possible ignition sources and in approved containers, with the contents labeled for identification. Containers must not be left uncapped.
2. Do not use aerosol sprays, cleaners, or insect repellents near ignition sources.
3. Keep portable electric heaters away from furniture and other flammable materials. Never block forced-air heater outlets.
4. Do not allow paper or other flammable material to accumulate behind copy machines.
5. Do not use solvents to clean a copy machine, printer or tape drive until it has cooled.
6. Spilled liquid should be identified and removed immediately. Follow recommended safe-handling procedures if warranted.
7. Fumes or gases generated from equipment, such as ammonia gas from blue line reproduction machines, must be properly ventilated or exhausted.

DOORS, WALKWAYS AND ELEVATORS

1. Observe the following safety tips for the opening of doors:
 - a. Open a door slowly. Expect someone to be on the other side.
 - b. If a door opens toward you, approach it from the side.
 - c. When working alone, never carry items that prevent you from opening a door easily with a free hand.
2. Use the handrails on stairs and escalators.
3. Never run on stairs and always keep at least one hand free.
4. Keep doors and hallways clear of boxes and other obstructions.
5. Clearly mark all exits and report burned-out light bulbs in exit signs promptly.
6. Report or tack down loose or torn carpeting.
7. Approach blind corners with caution, especially near coffee rooms, reproduction rooms, and other heavily traveled areas. When corner mirrors are available, use them to see if people are approaching from the opposite direction.
8. Read and comply with elevator safety rules. Let other people exit an elevator before you enter. Keep your hands and feet clear of closing doors.
9. Remove snow and ice from walkways between buildings. Apply de-icer to icy walkways. Always use caution when walking on slippery surfaces, especially when wearing leather-soled shoes.

PERSONAL SAFETY

1. Use caution when wearing high heels or hard heels that may be hazardous on slippery floors or stairs. Shoes should be kept on in the office except in approved special circumstances.
2. Never use a wastepaper basket as an ashtray. Never empty an ashtray into a wastebasket until ashes have thoroughly cooled.

3. Do not smoke near computer facilities or while handling computer tapes or paper. Never smoke in record storage or filing areas except where approved. Never smoke when using flammable solvents for cleaning copy machines or type-writers. Never leave a burning cigarette unattended in an ashtray. Smokers should not abuse the right of others to a healthful work environment.
4. Dispose of broken glass in marked containers such as boxes. Never throw loose glass pieces into a wastebasket.
5. When changing paper or removing paper jams, avoid touching the heated parts of the copying machines or microfiche reader/printer machines. Never stick a metal object such as a letter opener into a machine.
6. Close the cover on the copying machine during reproduction to prevent eye injury caused by intense light.
7. Use protective gloves when using solvents or cleaners on copy machines, printers and tape drives. Do not leave bottles or containers open for long periods of time.

WAREHOUSE SAFETY

General

1. Warehouses must have posted smoking and non-smoking areas.
2. All storage areas must be kept free of materials that can cause tripping, fire, explosion or pest harborage. Aisles, stairways, walkways and loading platforms must also be kept free of such materials.
3. Gasoline, malodorant and any other highly volatile material must not be stored in a warehouse. Appropriate outside storage should be provided.

Large quantities of paint and thinners should also be stored outdoors or in approved lockers. Lockers must be labeled to identify the paint and thinner contents.

4. Allowable floor or platform loadings must be determined by authorized professional personnel and prominently posted. Do not exceed loads that are posted or otherwise stated. Do not exceed Occupational Safety and Health Administration (OSHA) safe loading limit requirements.
5. A non-skid surface should be provided on ramps and walkways where there is danger of slipping.
6. Do not overload shelves. Periodically inspect shelves for strength.
7. Bins and racks should be spaced and located to allow safe access to material.
8. Make provisions for safe access to material on high shelves.
9. When storing heavy objects, such as fittings, in bins, place strips across the lower part of the bin to keep the fittings from rolling out.

FORKLIFTS AND PALLET STORAGE

General:

1. The operator must be fully qualified and become thoroughly familiar with the forklift before using it and must read the operator's guide carefully.
2. Forklifts should be visually inspected daily for conditions adversely affecting the safety of the vehicle. If the forklift is used around the clock, it should be inspected after each shift.
3. Each forklift should carry a name plate showing its weight and rated capacity.
4. Each forklift should have a horn or other warning device loud enough to be heard above other local noise. This horn should be sounded when leaving or entering a building equipped with a back-up warning signal.

Loading:

1. Never overload the forklift.
2. Material must be piled securely on the pallet at all times. Round objects such as pipe or drums must be blocked or secured so they cannot roll.
3. A red flag must be placed on material that projects over the side of the pallet.
4. Before lifting, be sure that the load is stable and properly balanced.

Unloading:

1. Always lower the load slowly: a sudden stop may cause the forklift to tilt forward.
2. Be sure stacked materials are not top heavy. When placing or picking up pallets, do not unbalance the stack.
3. Never stack material in roadways or aisles.
4. Employees other than the operator must stand clear of the forklift while it is being used to stack or remove material.
5. Do not pile material too high for safe lifting and handling.

Operation:

1. The operator must not permit anyone to ride on any part of the forklift.
2. Do not use gasoline or diesel powered forklifts in small buildings without proper ventilation.
3. Park with forks under a pallet or bench to prevent tripping.
4. When a forklift is unattended, the forks should be fully lowered, controls in neutral, power shut off and brakes set. If parked on an incline, wheels should be blocked.
5. Never drive over objects lying on floors. Such material may cause damage to the forklift and may shift or topple the load.

6. When driving with or without a load, keep the forks four to six inches above the ground.
7. When following another forklift, keep at least ten feet behind. Do not travel abreast of another forklift.
8. Avoid sudden stops and starts as they may cause skidding or topple the load.
9. If the load obstructs forward view, the operator must travel with the load trailing.
10. Avoid carrying loose material on forks. Use pallets whenever possible.
11. Never stand under elevated loads.
12. Gasoline or diesel powered forklifts must be refueled outside buildings with the engine shut off and brakes set.

SECTION 7 FIRE PREVENTION

GENERAL

1. All accidental fires on SWOSU property, no matter how small, must be reported immediately to a supervisor.
2. The prevention of fires is of utmost importance. Good housekeeping and equipment maintenance must be followed to keep fire hazards at a minimum. The area immediately adjacent to buildings and equipment should be kept free of combustible debris and dry weeds.
3. Furniture should be arranged to avoid contact with heaters.
4. Matches and cigarette lighters should not be carried into any area that may have an explosive atmosphere. In operating areas with non-explosive atmospheres, only safety matches and approved double-action cigarette lights may be carried.
5. Smoking is prohibited in any area suspected of containing flammable vapors, whether a "No Smoking" sign is displayed or not.

Any area subject to contamination by flammable liquids or gas should be designated a "No Smoking" area. A "No Smoking" sign should be displayed in the area.

Attics of all buildings must be designated as "No Smoking" areas, and "No Smoking" signs must be prominently displayed there.

6. Cans of oil and kerosene, oily rags, waste, and debris must not be allowed near stoves, furnaces or gas fires.
7. Oily waste or oil-soaked clothing must be disposed of because of the possibility of spontaneous combustion.

To prevent such fires, approved metal containers must be provided for the disposal of oily rags, waste and other flammable rubbish. These containers must be emptied often enough to keep the premises in a safe, sanitary condition.

8. Buildings in which gas or gasoline is being handled must be well-ventilated.
9. Before an open flame such as a welding torch is carried into a closed building or confined space, a test should be made to detect the presence of gas, using an approved gas indicator.
10. Due to the probability of electrostatic charge generation, carbon dioxide (Co₂) must not be injected into any space containing a flammable atmosphere which is not a fire.
11. When high gravity, high vapor pressure hydrocarbon liquids, such as condensates, gasoline and some crude oils are drawn into open containers, a metal container must be used and the open container must be properly bonded or grounded.

Bonding can be achieved by hanging the bare metal handle of the metal container (no wood, rubber or plastic cover on the handle) over the valve from which the fluid is being drawn or by setting the metal container down on a steel plate or steel deck definitely known to be in contact with the vessel from which fluid is being drawn.

Bonding can also be accomplished by threaded connections or by connecting metal cable from the container to the outlet piping or container from which the fluid is being drawn. If not bonded together, each object must be separately grounded. A cable of stranded wires, rather than single solid wire, should be employed for cables that are to be connected and disconnected frequently. Terminals should be properly secured to prevent accidental disconnections.

12. High gravity, high vapor pressure hydrocarbon liquids must not be drawn into open plastic or rubber containers. These type buckets or pails can build up an electrostatic charge and they cannot be properly bonded or grounded because of the possible non-conductivity or high-resistivity composition of this material.
13. Because personnel can be electrostatically charged enough to cause an incendiary spark, hands must not be placed in or under the stream being drawn inside the container. Before the valve is opened, human bonding can be accomplished by skin contact with the valve or vessel from which the fluid is being drawn.

14. The use of gasoline as a cleaning agent is prohibited. The only flammable liquids approved for use in cleaning machinery are kerosene and varsol. These liquids should not be used on hot metal surfaces or sprayed around operating machinery where there is a source of ignition. Hydrocarbon resistant rubber gloves should be worn to protect the hands.
15. Gasoline, kerosene or other flammable liquids must not be stored in glass containers or unapproved plastic containers.

Only approved safety cans may be used to store or transport gasoline or solvents.

16. When testing for gas leaks on domestic gas connections, use soap suds or an approved leak-detector fluid. Never use an open flame.
17. Because paint, insect sprays, aerosol sprays, and most paint removers are usually flammable, they should not be used near open flames or other sources of ignition. Read the labels on the containers.
18. Inspection and maintenance of all fire equipment must be performed by a competent inspector in accordance with applicable regulatory requirements. Records of inspection and maintenance should be maintained. The following general guidelines should be observed.
 - a. All portable and semi-portable extinguishers must be inspected monthly to ensure that they are in their designated places, and that they have not been tampered with, and to detect any obvious physical damage, corrosion or other impairments.

A more thorough inspection should be performed every six months or yearly as conditions dictate. Extinguishers should be recharged as needed, repaired to ensure reliable operation, and replaced as needed.

- b. Hydrostatic testing at 75% of factory test pressures must be conducted if a portable extinguisher shows evidence of corrosion, deterioration or mechanical damage. Fire extinguisher hoses that have a shut-off nozzle at the discharge end must be included in the hydrostatic test. Also, hydrostatic tests must be conducted at the following intervals.
 - 1) Carbon dioxide extinguisher - five years.

- 2) Dry chemical units with stainless steel, aluminum or soldered brass shells - five years.
 - 3) Cartridge dry chemical units with brazed-brass or milled-steel shells such as Ansul or General, located in or around a saltwater environments or any other corrosive condition - six years.
 - 4) Pressurized dry chemical units with brazed-brass or milled-steel shells - twelve years.
 - 5) All others - twelve years.
- c. Sprinkler systems must be kept in good operating condition.
- d. The following precautions apply to fixed dry chemical, Halon and carbon dioxide extinguishing systems.
- 1) Semi-annually, expellent gas containers must be inspected and checked for pressure and weight against the required minimums.
 - 2) At least annually, the complete system, including alarms, shutdowns and other associated equipment, must be thoroughly inspected and checked for proper operation by a qualified inspector.
 - 3) Dry chemical containers must be sampled annually from the top, at the center, and near the wall of the container to determine the existence of packing or deterioration.
 - 4) Records of inspections and tests must be maintained. The preventive maintenance report or a similar form is typically used for this purpose. The report should be reviewed monthly to ensure that all inspections are being made and that defective equipment is being promptly repaired or replaced.
- e. The pressure testing requirements for Halon, nitrogen and carbon dioxide cylinders are as follows:
- 1) Cylinders that are sent in to be recharged must be hydrostatically tested if more than five years has elapsed since the last test.

- 2) Cylinders continuously in service without discharging must be pressure tested every twelve years. Refer to the National Fire Protection Association (NFPA) 12-A for additional information.
19. Fire drills will be held at regular intervals to familiarize personnel with the location of fire extinguishing equipment.
20. Fire fighting equipment is for fire use only and must be kept in its designated place at all times when not in use.
21. All fire protection equipment must be located in designated areas that are clearly identified with appropriate markings. This equipment should be located near likely fire hazards, but it must also be accessible to operating personnel. The number, type and location of extinguishers must meet both State and the latest NFPA or other applicable standards.
22. Partially used fire extinguishers must be discharged of pressure, recharged, or replaced immediately. Report problems to the Fire and Safety officers.
23. Fire extinguishers should be kept filled and maintained according to manufacturer's instructions to ensure operation at top efficiency the instant they are needed. An empty, used or defective fire extinguisher must not be rehung until it has been serviced or repaired.
24. All fire extinguisher hose nozzles should be kept free of obstruction at all times.
25. All employees should be instructed in the proper use of available fire fighting equipment. If a place requires special precautions against fire, employees at that location must be instructed in those precautions.
26. Welding on the outer shell of a fire extinguisher is prohibited unless done by an American Society of Mechanical Engineers (ASME) coded welder.
27. All fire hoses and hose reels will be inspected by Fire and Safety at least every twelve months or more frequently if subjected to unusual exposure or use.
28. Instruction labels on fire extinguishers should be protected.

29. A primary and secondary power source should be available for fire suppression systems. They should be remotely located from potential fire hazard areas. These facilities will be started and operated weekly and all maintenance personnel should be familiar with starting and operating procedures.
30. Personnel assigned to locations where automatic extinguishing systems are employed should be instructed to vacate enclosed buildings in the event of extinguisher discharge to prevent excessive inhalation of the chemical.

In buildings equipped with an automatic fire protection system (i.e., Halon), all doors must remain closed except when persons enter or leave the building. The automatic louver closure and exhaust fan shut-down system must be operable.

31. Adapters should be available to connect fire equipment to existing equipment when possible.
32. The burning of waste oil, grass, brush, rubbish, or other combustible material is prohibited. Extreme care should be used to prevent accidentally starting a fire when working in dry woods, brush, marshes and prairies. A fire extinguisher or appropriate water source should be available. The Fire and Safety Officer is to be notified and give approval to burning on grounds.

SECTION 8 MOTOR VEHICLE TRANSPORTATION

GENERAL

1. All operators of State vehicles must practice defensive driving when operating those vehicles.
2. All operators of State vehicles must have valid, appropriate driver's licenses. Notify transportation (Physical Plant) of any change in your driving status and when a new license is obtained.
3. The certificate of registration and other required documents, along with State accident forms should be carried in all State owned vehicles.
4. All drivers must be familiar with and abide by state, federal and local traffic regulations.
5. Seat belts are installed in all State vehicles. All occupants of State vehicles and personal cars used on State business must use seat belts.
6. Equipment on State vehicles must conform to State, Federal and Department of Transportation (DOT) regulations.
7. Picking up hitchhikers is dangerous and prohibited. You will lose your liability protection if transporting unauthorized passengers.
8. Any automotive accident involving a State owned, rented or leased vehicle, major or minor, must be reported as soon as possible to your supervisor and the Facility Risk Management Coordinator, and state accident forms must be completed.
9. Vehicles equipped with catalytic converters should not be driven onto grassy spots or an area where gas accumulation is possible, since the extremely hot converter can create a fire hazard.
10. A driver should make it a habit to look around the vehicle for potential hazards before entering it and putting it in motion.

11. When a vehicle is to be maneuvered in confined areas, precautions should be taken to ensure that the way is clear and that the driver can see the entire area. If the driver does not have clear visibility, help should be obtained from someone who has an unobstructed view.
12. When possible, park so backing is not required.
13. If an employee driving a State vehicle should feel drowsy, another qualified employee should drive. If there is no other qualified driver available, the employee should not operate the vehicle until capable of doing so safely.
14. At least one drive wheel should be blocked before a car is raised with a bumper jack. Follow the manufacturer's instruction, which are usually posted on the underside of the trunk lid in passenger cars. Keep hands, feet and body in the clear as much as possible to avoid injury in case the jack fails. Never crawl under a vehicle raised by a bumper jack or any other support that could fail and allow the vehicle to fall.
15. Before starting out in your vehicle in the morning, clear all windows of any frost, ice or dew. Cleaning only a small place on a windshield does not allow the proper visibility.
16. Driving is a full-time job. Drivers should not engage in any other activities. For example, encoding two-way radio equipment, or updating records, for this type of activity the vehicle should be pulled off the road and stopped.
17. A right-hand outside rear-view mirror should be installed on each vehicle. Wide angle or fisheye mirrors are recommended because they greatly improve visibility in blind spots.
18. Unsafe and discourteous driving practices such as road hogging, disregarding the rights of pedestrians, violating traffic regulations, and deliberate recklessness of any kind are prohibited.
19. Drivers of automotive equipment operating on State property must adhere to all applicable traffic regulations.
20. Getting in and out of a vehicle while it is in motion is prohibited, as is riding anywhere on the vehicle not designed for passengers. Do not get out of a vehicle and leave the motor running, or drive a vehicle with a door open.
21. Driving at the maximum posted speed limit can be too fast for safety in some situations. The driver of a State vehicle should use good judgment and proceed at a pace suitable to the conditions of the vehicle, the road, the traffic, and the weather.

22. Great care should be taken when vehicles are being towed. The speed of the vehicles involved should be closely controlled at all times.
23. No gasoline or diesel fuel should be added to the fuel tank of a motor vehicle while the engine is running. If a servicing unit equipped with an engine is used to fuel the vehicles, the engine of that unit should also be shut off unless its power is needed to deliver the fuel.
24. Smoking is prohibited near a vehicle being refueled.
25. Flammable liquids are not to be carried in trunks or luggage compartments of vehicles. Sample containers handled by gas testers and other authorized persons may be carried in such vehicles, provided the valves are plugged to prevent leaking. Spare auto batteries should not be stored or transported in the trunk of a vehicle.
26. Precautions must be taken to ensure that aerosol containers, including engine starting fluids and deicers, are not exposed to heat. Aerosol containers should not be carried in the same compartment as two-way radio transmitters. In addition, engine starting fluid must not be carried inside the passenger compartment.
27. Except in emergencies, gasoline must not be carried inside passenger cars or the cabs of trucks. When an emergency requires that it be carried in these places, it should be in an Underwriters Laboratories (UL) approved container that is sealed tight to prevent the leakage of gasoline or gasoline vapors.
28. To make sure poisonous carbon monoxide fumes do not accumulate, garage doors must be opened for ventilation whenever a motor vehicle engine is running. Remember these deadly fumes are odorless and invisible.
29. Motor vehicles must not be driven or gas engines used within gaseous areas.
30. When the weather is extremely cold, employees sometimes seek warmth from a heater inside a parked motor vehicle that has its engine running. To avoid carbon monoxide poisoning in such instances, the employee should open a vent or window enough to ensure ample fresh air and should open a door wide enough at intervals to expel the potential carbon monoxide fumes.

31. Do not carry loose items, such as hard hats, books, etc., on the rear package tray of a passenger car.

INSPECTION, SERVICING AND MECHANICAL REPAIR

1. Vehicles must be kept in good mechanical condition, with particular attention being given to brakes, signals, lights, horns, windshield wipers, steering gear, and tires. If a driver detects a mechanical defect or safety hazard in an assigned vehicle, that employee should arrange to have repairs made at once. If the vehicle is a car pool unit, the employee should report the condition immediately to the person in charge of motor pool equipment.
2. Steering mechanisms should be inspected periodically. Special checks should be made after the vehicle has been driven over extremely rough or brushy terrain or after it has struck a deep chuckhole.
3. Wheel alignment, brake adjustment, and the front-end mechanical condition of State vehicles should be visually inspected at least every ninety days. Brake fluid lines should be examined for defects at least every six months. They should be replaced or repaired if found to be faulty.
4. Inflate an unmounted tire with the rim, or retaining ring, on ground side.
5. To prevent poisonous exhaust fumes from penetrating the passenger compartment, regularly inspect mufflers and tail pipes of passenger vehicles. This inspection is particularly important in the winter when windows are usually kept closed.
6. Lighted matches or sparks of any kind should be kept away from the top of an open battery during service or inspection. A stored battery gives off hydrogen, a highly explosive gas.
7. The electrolyte or acid mixture from a stored battery may burn clothing and skin. Exposed skin should be washed thoroughly after servicing such a battery.
8. To avoid being scalded, use extreme caution in removing the radiator cap to check the coolant when the engine is at operating temperature. Preferably the radiator cap should be removed when the engine is cool.

9. When jump starting a vehicle, use the following procedure to prevent an electric arc when connecting the jumper cables to the battery terminals:
 - a. Safety glasses should be worn while jump starting a vehicle.
 - b. Attach one cable to the power terminal (normally the positive terminal) of the dead battery. Attach the other end to the power terminal of the booster battery.
 - c. Attach one end of the remaining cable to the ground terminal of the booster battery.
 - d. Take the remaining end of the ground jumper cable and attach it to the engine block or frame of the vehicle with the dead battery at a point about two feet away from the booster battery. Do not attach the ground cable clamp to the ground terminal of the dead battery.
 - e. Once the vehicle with the dead battery has been started, remove the ground cable from its engine block or frame. Be careful of moving engine parts when doing so. Then remove the other end of the cable from the ground terminal of the booster battery. When removing the power jumping cable, disconnect it from the booster battery first and then from the dead battery.

Manufacturers may specify alternative procedures. Refer to the vehicle operator's manual for specific instructions. An effective instruction sheet that can be applied near the battery is available from the National Society to Prevent Blindness. Consideration should be given to mounting this data on each State vehicle.

TRUCKS

1. Flammable liquids must not be carried on crew trucks except in approved containers fitted with a screw cover or spring cover. This precaution does not apply to paints, which may be handled in a shipper's carton.
2. Wheels of trucks should be checked at least once a week to see that lug bolts and axle-flange nuts are tight.
3. On trucks for transportation of personnel, all tools should be carried outside the cab, properly secured.
4. When not being used, auto cranes and hoists must have their swivel and lifting arm secured.

5. All fittings, tools, supplies, equipment and loose objects hauled on trucks must be firmly secured or restrained to prevent them from falling off into the path of other vehicles.
6. Employees must not stand on truck bumpers or hoods to act as a counterweight for loads.
7. When inflating truck tires, always stand in the clear to avoid the possibility of an injury if retaining rings or rims should spring out of place.
8. The driver of a winch truck is responsible for the condition of the winch lines.
9. The winch on a truck must be equipped with an approved winch guard (headache board) as a protection to the driver against flying winch lines and shifting pipe.
10. Truck beds must be kept free of oil and grease.
11. All trucks must be equipped with a proper fire extinguisher, first aid kit, and other appropriate emergency equipment. Fire extinguishers must be recharged or replaced immediately after use, and other emergency equipment must be replaced as used.
12. No load should extend directly over the truck cab unless the truck is properly equipped for such hauling.
13. When working or driving under or near high voltage lines, take care that gin poles, mast guys, or other objects do not contact the lines. Where possible, de-energize power if high loads are to be moved. If power is not de-energized, a person must be stationed outside the truck to guide the driver. In the event that contact is made, occupants should stay in the vehicle and move it from contact or jump, not step, from the vehicle to the ground, thus averting shock in case the vehicle is charged. Before anyone is allowed to touch the vehicle, an electrician should clear it of any electrical charge.
14. A power line pole must not be used as a snub for a winch line when material is moved or when a truck is pulled out from being stuck. If such a pole is used in this way, the wires may short when the strain is taken off the pole.
15. While puling a load with a winch, workers must not stand between the end of the truck and the load.
16. The tail chain on the winch line of a crane truck must not be pulled against the pulley on a gin pole because it might become fouled or otherwise create hazard.

BUCKET TRUCKS / CRANES

1. Never use the winch line for assistance in climbing up on the truck bed.
2. While using a crane, the operator should be sure the crane truck is securely anchored. Prevent the truck from moving while the load is suspended on the crane. Wheels should be blocked whether or not brakes are considered adequate. Cranes must have outriggers properly braced on a solid surface before making a lift.
3. When heavy equipment is moved with a crane, a tag line must be attached to the load, when it can be used safely, so that the helper can stand in the clear and still control it.
4. When loads are being handled by gin poles, both the load and the gin pole must be securely snubbed to the truck bed.
5. Rolling tail boards must have a positive locking device.
6. A person must not walk or stand under a gin pole or on the gin pole truck bed when the gin pole is handling a load.
7. When pipe, timber or any multiple-unit load is hauled, the load must first be boomed as tightly as possible. After a short distance is traveled, the first chains must be retightened. All pipe or timber loads settle which causes the chains to loose.
8. One boomer chain should be securely fastened on a load before anyone gets under the load to perform any other work, including the placing of additional boomer chains.
9. Truck loads should be boomed on the side and to the right, if possible. Heavy duty boomers should be used on heavy loads.
10. Loose ends of boomer chains should not be allowed to drag or hang free.
11. Workers should not stand directly over a boomer handle when releasing boomer chains.
12. If the load on a truck starts to tumble or fall off, workers should not try to stop it.
13. Truck and tire load capacity must not be exceeded.

14. Crane or bucket truck job sites should be barrier taped to prevent hazard to pedestrians in the area.
15. All employees and crane operators should wear hard hats during any crane operation.
16. A minimum of two employees should be present at all crane or bucket truck worksites.

SECTION 9 WORKING IN COLD AND HOT WEATHER

WORKING IN COLD WEATHER

The following information will serve as a guideline for assessing whether or not - non-vital services should continue to be performed during periods of extremely cold weather.

Wind chill factors were developed by the military to determine the effects of combining wind and temperatures as they effect exposed skin surfaces. Wind chill effect does not cause liquids to freeze when the temperature is above the freezing point. However, when the air temperature is below freezing, wind effect will speed up the freezing process.

There are going to be situations where no condition of weather will force work to be stopped. These situations include police and fire service, sanitation services and emergency responses by personnel to situations that arise as a result of this severe weather. Non-essential services within emergency response departments should be considered for curtailment during extreme temperature or wind chill periods. The procedure for evaluation of particular jobs will be as follows:

1. Assess the necessity of performing the particular task at the time.
2. Assuming the task must be done, determine if the employees are properly dressed and protected from the elements.
3. Determine what method the employee will have available to get warm periodically while the task is being performed.
4. Consult the wind chill chart and determine the wind chill equivalent. If the chill factor is in the "danger" zone, special clothing is required and protection from the effects of the chill must be considered and used. (See Appendix for Wind Chill Chart)
5. If the chill factor is in the "danger" zone, only life and health safety tasks should be considered.

6. In the “danger” zone, certain tasks may be impossible due to wind or temperature alone, however, the general safety policy for non-life safety tasks will be that cold weather considerations will be implemented any time the reported wind chill falls below -25 degrees Fahrenheit.
7. Individual departments may establish separate conditions, based on wind chill factors as they effect specific tasks.
8. Any questions or circumstances which arise regarding this policy should be directed to the Risk Management or Safety Officer.

WORKING IN HOT WEATHER

Heat Injuries:

With the approach of warm weather the prevention of heat injury becomes increasingly important.

1. Heat injury takes several forms:
 - a. Sunburn - Over-exposure of skin to the ultraviolet radiation of the sun. Severe cases are disabling, and the victim may be susceptible to other heat illnesses.
 - b. Heat Cramps - Painful muscle contraction in the arms, legs, stomach and back. Cramps occur primarily because of excessive loss of salt through sweating and lack of acclimatization.
 - c. Heat Exhaustion - Results from excessive loss of water and salt from the body. This heat injury is usually characterized by extreme fatigue, nausea, vomiting, giddiness, muscular cramps, rapid breathing and fainting.
 - d. Heat Stroke - Is a medical emergency. It is caused by the breakdown of the body's heat regulating mechanism and is characterized by hot, dry skin, absence of sweating and dizziness. Unlike the other heat disorders heat stroke is often FATAL. The ceasing of sweating in the heat is one sign of possible heat stroke. (See Appendix on Heat Injury)

Preventive Heat Injury Measures:

To ensure a successful program against heat injury, the following information should be common knowledge:

1. **Acclimatization** - This is essential in reducing heat injuries. It is a gradual process in conditioning the body to perform effectively in the heat.
2. **Adequate Water Intake** - Sufficient amounts of water should be provided at all times. Personnel should be encouraged to drink water with greater frequency than is necessary to quench thirst.
3. **Salt Intake** - Meals normally contain sufficient salt but additional salt should be provided during the first few days of exposure to heat. Extra salt should be provided in the food or if necessary in the drinking water (one-quarter teaspoon per quart). Undissolved salt in the form of salt tablets or granular form should never be taken.
4. **Clothing** - Clothing helps prevent radiant heat of the sun from being absorbed by the body. Loose fitting clothing allows circulation of air and enhances the cooling evaporation of sweat. Direct exposure of the skin to the sun by removal of clothing increases the chances for heat injury.
5. **Predisposing Factors to Heat Illness** - Lack of acclimatization upper respiratory infections, poor physical condition, obesity, a history of previous heat illness or taking of medication can make an individual susceptible to heat injury.

SECTION 10 SHOPS

GENERAL

1. Unauthorized persons should not visit or loiter in the shop, and must not use any shop equipment.
2. Shops should be locked when unattended. A machine must not be left unattended while operating.
3. Shops must be equipped with a first aid kit.
4. Shop personnel and visitors must wear suitable eye protection in required work areas. Impact-type goggles must be worn and a full-face shield should be worn to protect the head and face of an operator engaged in grinding, machining, hammering or chipping. Personal protective clothing or equipment must be worn as required by the shop. (See Section 2 on Appropriate Protective Clothing and Equipment)
5. All tools should be maintained in good condition, be properly stored, and used for their intended purpose. (See Section 3 of Small Tools and Equipment)
6. Never defeat the function of a safety device such as a deadman switch.
7. Shops in which cleaning solvents or chemicals are used must be equipped with an approved eye-wash station and be adequately ventilated to prevent accumulation of hazardous fumes or vapors.

All cleaning, boiling or temperature baths must be ventilated, located in a safe area, and provided with a vapor-sealed cover.

8. Good housekeeping is essential to good safety practices. The following guidelines will help achieve and maintain good housekeeping.
 - a. Clean up all spills immediately.
 - b. Keep the floor free of oil and grease.
 - c. Keep walkways free of tripping hazards.

- d. Store oil rags in a closed metal container.
 - e. Close workbench drawers when not in use.
9. Place safety guards on belts and gears. Objects such as set screws must not be left in a position that will cause them to catch on the operator's clothing.
 10. Do not wear gloves, jewelry or loose clothing around rotating machinery. Never use rags around a machine that is in operation.
 11. Before using chuck wrenches, inspect their condition to ensure a tight fit and to prevent slippage. Be sure that the power is off. Never leave a chuck wrench in the chuck.
 12. Turn off or disconnect the power before making any adjustments to a machine.
 13. Remove the cutting and filings from the machine and the floor area around the machine. Use a brush, broom and shovel for this purpose. Never use your bare hands.
 14. Do not exceed the recommended lifting capacity of an overhead crane or chain hoist. The allowable capacity must be marked on such cranes and hoists.
 15. When electrical tools are being operated, approved rubber floor mats should be used to provide adequate insulation.
 16. Bins and racks should be spaced and located to allow safe access to materials. (See Section 3 on Small Tools and Equipment)

SECTION 11 STORM PROCEDURES

TORNADO PROCEDURES

Tornadoes most frequently occur in the mid-western, southern and central states between the months of March and September. A tornado is recognized as a funnel-shaped cloud that spins rapidly and extends towards the ground from the base of a thundercloud. A “tornado watch” is a time during which the weather conditions could result in a tornado. A “tornado warning” indicates that a tornado has been sighted or detected by radar.

1. During a tornado watch, listen to the radio or television for current information. Do not tie up telephone lines by calling the weather bureau, except to report a tornado.
2. During a tornado warning, be prepared to take immediate cover for protection.
3. The best tornado protection is provided by a tornado cellar, a cave, or underground excavation with an air outlet to equalize the air pressure. Select a shelter in advance. The shelter should be free from water, gas or debris, and equipped with a pick and shovel if possible. Be cautious when selecting a shelter. Flash flooding caused by thunderstorm rains could make some locations dangerous.
4. Take the following precautions:
 - a. Seek an inside shelter, preferably in a strongly reinforced building.
 - b. Stay away from windows.
 - c. The northeast corner of a basement usually provides the best protection.
 - d. In buildings without basements, stand against the inside wall of a lower floor. Take cover under heavy furniture, if possible.
 - e. Avoid auditoriums or gymnasiums with large, poor supported roof structures.
5. If in open country, take the following precautions:

- a. Move at right angles to the path of the tornado. Tornadoes travel about twenty-five to forty miles an hour.
 - b. If there is not time to escape, lie flat in a depression, ditch or ravine.
7. Most deaths during tornadoes are caused by head injuries. Lie face down, draw your knees up under your body, and cover the back of your head with your hands.
 8. To avoid being struck by lightning, stay indoors and away from electrical appliances during the thunderstorm. If outside, avoid tall or conductive objects.
 9. During the thunderstorm associated with a tornado, be prepared for possible flash flooding, very strong winds, and hail.
 10. Remain calm. Do not leave your shelter to go outside during the storm.

(See Appendix on Emergency Procedure Guide - "Tornado" Section)

SECTION 12 HAZARD COMMUNICATION POLICY

Introduction and General Statement

1. Almost every work place contains some substances which could pose potential health problems to employees if exposed to them in concentrations or in a manner not prescribed. Southwestern Oklahoma State University recognizes that its employees have a right and need to know the properties and potential safety and health problems of substances to which they may be exposed. With this policy, Southwestern Oklahoma State University intends to ensure the transmission of necessary information to employees regarding substances in the work place pursuant to Title 40, Oklahoma Statutes Section 401-424.
2. A hazardous substance is defined as any substance that is a physical hazard or a health hazard, i.e. compressed gases, explosives, flammable, and oxidizer, carcinogens, toxins, irritants, or corrosives. Hazardous substances generally have a Material Safety Data Sheet (MSDS) provided by the manufacturer.
3. This policy is established to:
 - a. Ensure compliance with the applicable state standard.
 - b. Safeguard health of university employees.
 - c. Create guidelines to follow for implementation and maintenance of a hazard communication program.
4. The Hazard Communications Program shall be administrated by the Safety & Environmental Offices whose line of administrative authority is through the Vice President for Administration. The Safety and Environmental Office has been designated as the Master Record Keeper.

Chemical Inventory and Material Safety Data Sheets

1. Individual department supervisors complete and mail Chemical Information List (CIL) survey forms to the Safety & Environmental Office (DPS) no later than September 30 annually.
2. The Safety & Environmental Office provides copies to the Weatherford Fire Department.
3. Material Safety Data Sheets (MSDS's) on **all** Hazardous substances are collected and filed. These files must be kept at the departmental level available to employees. Copies will be filed with the Safety & Environmental Office.

Procedures

1. Each building on campus shall have a Chemical Inventory List (CIL). The CIL shall include a listing of all hazardous substances present and shall be updated at least yearly. The building list will be obtained by coordinating the lists supplied by each department located in the building
2. A Master Chemical Information List (CIL) shall be created and maintained by the Safety & Environmental office in a manner that will allow a listing of hazardous substances by vendor, department, building, and room. Each CIL shall be verified by the appropriate department head and is subject to audit by the Safety & Environmental Coordinator.
3. Material Safety Data Sheets (MSDS) provide detailed information on a hazardous substance. These sheets include information such as product (hazardous substance) name, chemical abstract service number(s), ingredients, physical data, fire and explosion hazard data, environmental and disposal information, health hazard data, first-aid instructions, and handling precautions. Purchase orders for any hazardous substance, regardless of the quantity ordered, shall require the vendor to provide a Material Safety Data Sheet to SWOSU.

Any time a department receives a hazardous substance, the substance name and quantity will be added to the departmental CIL. The CIL and accompanying MSDS will be copied and sent to the Safety & Environmental Office.

4. Material Safety Data Sheets (MSDS's) maintained at the departmental level shall be readily accessible by an and all personnel in that department.
5. Should the supervisor of an area dealing with hazardous substances become aware of any information which is significant regarding the health hazard of a substance that does not appear on the MSDS, such information shall be added to the MSDS with a period not to exceed 30 days. The supervisor shall report the information to the Safety & Environmental Office. The information will be added to the master file and reported in writing to the Oklahoma Department of Labor for follow-up.
6. Departments will compile a list of chemicals for disposal annually and this list will be submitted to the Safety & Environmental Office (DPS) on or about May 15.

Signs and Labels

1. All existing labels on hazardous substance containers must remain intact. Where labels are not present or are not legible, a Hazardous Material Information System (HMIS) label will be affixed to all containers holding the hazardous substance.

2. Labels on incoming containers of hazardous substances shall not be removed or defaced. Labels on containers shall be applied to each container when provided by the manufacturer or distributor. Containers used by service contractors shall be properly labeled prior to use of the hazardous substance on SWOSU property.
3. All research laboratories may be excluded from the following by the standard:
 - a. Labeling beyond manufacturers
 - b. Exposure records

Exposure

1. Exposure is defined as coming into contact with a substance when not using the proper protective equipment. Any time an exposure occurs, it must be reported to the supervisor. After appropriate safety and health precautions, the supervisor then fills out an exposure form and submits copies to the Safety & Environmental Office departmental files, which shall place the copy in the employee's permanent file. These files must be maintained for a minimum of 40 years after termination. Upon request of a terminating employee, the employing department will provide a listing of hazardous substances to which the individual has been exposed during employment in that department.
2. Employees working in areas where exposure to hazardous substance(s) shall be required to perform their jobs in accordance with precautions communicated in the Material Safety Data Sheets. A supervisor may take appropriate disciplinary action when an employee does not comply with the precautionary measures mandated by this policy.
3. An affected employee (or his/her designated representative) may make a written request to the Safety & Environmental Office for access to copies of the CIL and MSDS. Such access shall be granted within a reasonable time, place, and manner but never later than one (1) working day after the request for access is made. In addition, whenever any affected employee or designated representative requests a copy of the CIL and/or MSDS, the Safety & Environmental Office shall within fifteen (15) days assure that either a copy or a mechanical means to copy is provided.
4. SWOSU may not discharge or initiate any adverse personnel action against any employee because the employee has exercised his/her right under Title 40 Oklahoma Statutes as referenced in this policy. The employee may not be requested or required to waive any rights under this policy. Any such waive executed shall be null, void, and unenforceable.
5. The Department Head or designee shall be responsible for providing the following in all departmental areas having contact with the hazardous substances:
 - a. Chemical name of each hazardous substance.
 - b. Correct labeling of each hazardous substance.

- c. Availability of an MSDS for each hazardous substance present in the immediate work area.
 - d. Training and education of employees and students on work practices, protective measures, and emergency measures in the work place.
5. Periodic checks for program integrity will be made by means of an internal audit team.

Training

1. Training shall be as follows:
 - a. All employees will receive a general information brochure on hazard communications through Personnel Services upon hiring.
 - b. The Safety & Environmental Office will train all new employees in the Hazardous Communications Program. These sessions will be conducted the first of the fall and spring semesters or when a new hazard is introduced to the work place.
2. Training and education provided to employees and others shall be documented and detailed records maintained by the department.
3. Training for the following is provided by the Safety & Environmental Office (DPS):
 - a. First Aid and CPR training and certification
 - b. Respiratory training and physicals
 - c. Forklift operator certification
 - d. Fall protection training

Fire Safety

1. The Safety & Environmental Coordinator shall create a building CIL package consisting of floor maps and room CIL's, submitting the CIL package to the Weatherford Fire Department. Building CIL's will be updated annually by the Safety and Environmental office.

Outside Contractor's Responsibilities

1. Any time a contractor brings hazardous substances into the workplace, the University must receive a CIL and MSDS's for these substances. Similarly, SWOSU must supply CIL and MSDS's for all hazardous substances in the area where the contractor will be working. This exchange will be coordinated by whomever is granting the contract, and a contractor safety form must be signed saying the contractor agrees to this provision and will train his/her employees on required substances.
2. Service contractors whose work or materials pose a health hazard to SWOSU employees shall be responsible for the training and education of SWOSU employees as detailed in paragraph 1 under **Signs and Labels** of this section.

**CAMPUS EMERGENCY PHONE NUMBERS
SOUTHWESTERN OKLAHOMA STATE UNIVERSITY**

DEPT. OF PUBLIC SAFETY
CAMPUS - 3111
AFTER HOURS - 911 (9-911)
DIRECTOR

SAFETY & ENVIRONMENTAL OFFICE - 774-3103
DEPARTMENT OF PUBLIC SAFETY
SAFETY SPECIALIST

VICE PRESIDENT FOR STUDENT SERVICES
CAMPUS - #3037

UNIVERSITY NURSE
CAMPUS - #3766

CHEMISTRY DEPT.
CHAIRMAN &
CAMPUS RADIATION
OFFICER - #3266
Blake Sonobe

PHYSICAL PLANT
CAMPUS - #3788
DIRECTOR

CITY OF WEATHERFORD EMERGENCY NUMBERS

WEATHERFORD FIRE DEPARTMENT
(EMERGENCY 911)
(NON-EMERGENCY) 772-5345
CHIEF – ROBERT ANDERS

CIVIL DEFENSE
CITY HALL
772-6491

CUSTER COUNTY HEALTH DEPARTMENT
772-6417

WEATHERFORD HOSPITAL
772-5551

WEATHERFORD POLICE DEPARTMENT
(EMERGENCY 911)
201 S. W. MAIN
(580) 772-7791

EMERGENCY PHONE NUMBERS

CHEMTREC - 1-800-424-9300

NATIONAL RESPONSE CENTER (NRC) - 1-800-424-8802

ENVIRONMENTAL PROTECTION AGENCY, REGION VI
ALLIED BANK TOWER -- 1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733
(214) 767-2646, OR (214) 767-9739
OKLAHOMA STATE COORDINATOR - MR. STEVE MASON
CONTINGENCY PLANNING SECTION (6E-EP)
(214) 655-2277

OKLAHOMA POISON CONTROL CENTER - 1-800-222-1222

NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK (PESTICIDE POISONING)
1-800-845-7633

OKLAHOMA HIGHWAY PATROL (OKC) - (405) 682-4343

STATE DEPARTMENT OF TRANSPORTATION (DOT) - (405) 521-2579

NOTICE TO ALL UNIVERSITY EMPLOYEES

Federal Register Volume 59, No. 153 released August 10, 1994 reiterates the need and states the requirements for notification of persons of the presence, location and quantity of Asbestos Containing Material (ACM) at their work site.

The University has completed an extensive asbestos removal process that has removed asbestos out of any areas that are used by students and most employees. There are University buildings that have ACM in various locations.

The University has an approved Operations and Maintenance Plan that is designed to maintain the AC areas where employees may be working or to handle an emergency situation such as a broken water line. The university's remaining ACM areas are routinely inspected to assist Southwestern in maintaining the integrity of the encapsulation of areas with suspected ACM.

The University also provides a training program for all custodial and maintenance workers. If additional information is desired, contact Tom Willis, Safety Specialist at the Department of Public Safety or contact him at extension 3103.

NFPA Placarding System

HEALTH

- 4 - **Deadly:** even the slightest exposure to this substance would be life threatening. Only specialized protective clothing, for these materials, should be worn.
- 3 - **Extreme Danger:** serious injury would result from exposure to this substance. Do not expose any body surface to these materials. Full protective measures should be taken.
- 2 - **Dangerous:** exposure to this substance would be hazardous to health. Protective measures are indicated.
- 1 - **Slight Hazard:** Irritation or minor injury would result from exposure to this substance. Protective measures are indicated.
- 0 - **No Hazard:** exposure to this substance offers no significant risk to health.

FLAMMABILITY

- 4 - Flash Point Below 73 F: this substance is very flammable, volatile or explosive depending on its state. Extreme caution should be used in handling or storing of these materials.
- 3 - Flash Point Below 100 F: flammable, volatile or explosive under almost all normal temperature conditions. Exercise great caution in storage or handling of these materials.
- 2 - Flash Point Below 200 F: moderately heated conditions may ignite this substance. Caution procedures should be employed in handling.
- 1 - Flash Point Above 200 F: moderately heated conditions may ignite this substance. Caution procedures should be employed in handling.
- 0 - Will Not Burn: substances that will not burn.

REACTIVITY

- 4 - May Detonate: substances that are readily capable of detonation or explosion at normal temperatures and pressures. Evacuate area if exposed to heat or fire.
- 3 - Explosive: substances that are readily capable of detonation or explosion by a strong initiating source, such as heat, shock or water. Monitor from behind explosion resistant barriers.
- 2 - Unstable: violent chemical changes are possible at normal or elevated temperatures and pressures. Potentially violent or explosive reaction may occur when mixed with water. Monitor from a safe distance.
- 1 - Normally stable: substances that may become unstable at elevated temperatures and pressures or when mixed with water. Approach with caution.
- 0 - Stable: substances which will remain stable when exposed to heat, pressure or water.

HAZARDOUS MATERIALS CLASSIFICATION

HEALTH HAZARD

- 4 - Deadly
- 3 - Extreme danger
- 2 - Hazardous
- 1 - Slightly
Hazardous
- 0 - Normal
Material

FIRE HAZARD

- Flash Points
- 4 - Below 73 F
 - 3 - Below 100 F
 - 2 - Below 200 F
 - 1 - Above 200 F
 - 0 - Will not burn

SPECIFIC HAZARD

- | | |
|------------------|------|
| Oxidizer | OXY |
| Acid | ACID |
| Alkali | ALK |
| Corrosive | COR |
| Use NO WATER | W |
| Radiation Hazard | |

REACTIVITY

- 4 - May detonate
- 3 - Shock and heat
may detonate
- 2 - Violent Chemical
Change
- 1 - Unstable if
heated
- 0 - Stable

APPENDIX A

LOCK-OUT PROCEDURE

The following procedure must be observed each time a piece of equipment is shut down and locked out for maintenance.

1. Notify the appropriate supervisor of your intentions, starting time and expected time of completion before you start work.
2. When working on or in compressor cylinders, crankcases, pump housings, hydraulic motors, pneumatic motors, fans, etc., the prime mover must be locked out. The term lock, when used in this and following directions, means to padlock the main switch, breaker or valve using a uniquely keyed lock, with the person doing the repair work maintaining possession of the key.
3. Locked out equipment must also be tagged by the person who installs the lock, showing the date, time, reason for lock-out, and name and title of person installing the lock. Use tags only once.
4. Test the lock-out method by trying to close the circuit breaker with the lock in place.
5. Test the circuit to ensure it is de-energized by closing the local switch to see whether the equipment starts. Then return the switch to the off position. If this is not possible, use the proper equipment to test the circuit.
6. Close and lock or tag all suction and discharge valves.
7. Close and lock or tag all drains/vents piped to flare headers, closed drains and/or pressurized pumps.
8. Open all atmospheric vents or drain valves.
9. Insert a flywheel or main shaft locking device.

Note: Many electric-driven compressors have no provision for locking the crankshaft. However, they may be secured against an accidental rollover by placing wood blocks inside one of the cylinders snugly between the piston and the head.

10. If more than one classification of worker is working on a piece of equipment, each must place a separate lock and tag on the prime mover locking device before starting work and must remove the same lock and tag upon completion of the work.
11. In the case of shift or tour work-overs where the individual worker who starts a job often is not the one who completes it, each shift must have its own set of locks.
12. The Physical Plant shall keep a set of spare keys to the lock-out locks.
13. No one may cut or otherwise removed any safety lock without the express permission of the Physical Plant Director, except the person who installed the lock or that person's relief.

APPENDIX B

EMERGENCY MEDICAL SERVICES SYSTEM

An Emergency Medical Services (EMS) System is a community-wide, coordinated means of responding to sudden illness or injury. It is a complete rescue system.

Entry into the system:

First, bystanders must recognize an emergency and provide immediate emergency care to sustain life until a rescue unit takes over. At the same time, or as soon thereafter as possible, the bystander (or victim, if conscious) must place a telephone call to activate the EMS system. The EMS number for the SWOSU area is 911. If you are on campus, you must dial 9 first, (9)911. When you telephone for help, tell the operator:

1. Where the emergency is, with the address or names of cross streets, roads, or other landmarks if possible. If on campus, tell them the exact location, i.e. building, room number, floor, etc.
2. Telephone number you are calling from
3. What happened -- heart attack, auto accident, fall, chemical spill, etc.
4. How many persons need help
5. Condition of the victim(s)
6. What is being done for the victim(s)

YOU HANG UP LAST!! Let the person you called hang up first.

APPENDIX C

SOUTHWESTERN OKLAHOMA STATE UNIVERSITY

CONFINED SPACE ENTRY CHECKLIST

	YES	NO
1. Obtained safe work permit?	_____	_____
2. Performed atmospheric testing and levels found to within tolerance or appropriate measures taken?	_____	_____
3. Personnel entering confined space are properly trained and respirator certified?	_____	_____
4. All appropriate warning signs are posted?	_____	_____
5. All appropriate PPE (including respiratory equipment) and other safety equipment available and in good working order?	_____	_____
6. The confined space has been properly isolated?	_____	_____
7. The confined space has been purged or ventilated as required?	_____	_____
8. The cleaning process to be used has been authorized by the supervisor?	_____	_____
9. All tools and equipment to be used on the job are of an approved type?	_____	_____
10. Two properly trained standby personnel have been assigned to the job for each person working in the confined space?	_____	_____

SOUTHWESTERN OKLAHOMA STATE UNIVERSITY
SAFE WORK PERMIT

Date _____

Location of Job _____

Nature of Job _____

Description of Work _____

Is the "CONFINED SPACE ENTRY CHECKLIST" attached and were all questions answered yes? ____.

If not, please give an explanation. _____

Work Started: Date _____ Time _____ AM/PM

Work completed: Date _____ Time _____ AM/PM

Approved _____

Work Area Supervisor

This complete form should be retained by the crew performing the work until the work is completed or the end of the day and then submitted to the Project superintendent

APPENDIX D

PROCEDURES FOR HIGH VOLTAGE

As given in the Code of Federal Regulations #29 Page 757-759.

(1) Work on energized equipment. Only qualified persons may work on electric circuit parts or equipment that have not been deenergized under the procedures of paragraph (b) of this section. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

(2) Overhead lines. If work is to be performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before work is started. If the lines are to be deenergized, arrangements shall be made with the person or organizations that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

(3) Unqualified persons.

(A) When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

(1) For voltages to ground 50kV or below - 10ft. (305 cm) plus 4 in. (10 cm) for every 10kV over 50kV.

(2) For voltages to ground over 50kV - 10 ft. (305 cm) plus 4 in. (10 cm) for every 10kV over 50kV.

(B) When an unqualified person is working on the ground in the vicinity of overhead lines, the person may not bring any conductive object closer to unguarded, energized overhead lines than the distances given in paragraph (c)(3)(i)(A) of this section.

(4) Qualified persons. When a qualified person is working in the vicinity of overhead lines, whether in an elevated position or on the ground, the person may not approach or taken any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table S-5 unless:

(A) The person is insulated from the energized part (gloves, with sleeves if necessary, rated for the voltage involved are considered to be insulation of the person from the energized par on which work is performed), or

(B) The energized part is insulated both from all other conductive objects at a different potential and from the person, or

(C) The person in insulated from all conductive objects at a potential different from that of the energized part.

TABLE S-4. -- APPROACH DISTANCES FOR QUALIFIED EMPLOYEES - ALTERNATING CURRENT

Voltage range (phase to phase)	Minimum approach distance
300V and less	Avoid contact.
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV	1 ft. 6 in. (46 cm).
Over 2kV, not over 15kV	2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV	3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV	4 ft. 6 in. (137 cm).

(5) Vehicular and mechanical equipment.

(A) Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 at. (305 com) is maintained. If the voltage is higher than 40kV, the clearance shall be increased 4 in. (10 cm) for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

(1) If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. (122 cm). IF the voltage is higher than 40kV, the clearance shall be increased 4 in. (10 cm) for every 10kV over that voltage.

(2) If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

(3) If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in Table S-5.

(B) Employees standing on the ground may not contact the vehicle or mechanical equipment or any of its attachments, unless:

(1) The employee is using protective equipment rated for the voltage; or

(2) The equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the line than permitted in paragraph (c)(3)(iii) of this section.

(C) Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials. depending on earth receptivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

(6) Illumination.

(i) Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.

(ii) Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.

(7) Confined or enclosed work spaces. When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

(8) Conductive materials and equipment. Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, the employer shall institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

(9) Portable ladders. Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

(10) Conductive apparel. Conductive articles of jewelry and clothing (such as watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other insulating means.

(11) Housekeeping duties. Where live parts present an electrical contact hazard, employees may not perform housekeeping duties at such close distances to the parts that there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided. Electrically conductive solids such as steel wool, metalized cloth, and silicon carbide, as well as conductive liquid solutions) may not be used in proximity to energized parts unless procedures are followed which will prevent electrical contact.

ATTACHMENTS

SWOSU Confined Space Entry Checklist & Safe Work Permit	A
Procedures For High Voltage.	B
Lock-Out Procedure	C
Emergency Medical Services System	D

APPENDICES

(available in written form in the DPS office)

Respiratory Protection Program

Employees Health & Safety (Official Injury Report Forms)

Emergency Procedures Guide (SWOSU Flip Chart)

(CPR) Cardiopulmonary Resuscitation In Basic Life Support

SAFETY MANUAL

SOUTHWESTERN OKLAHOMA STATE UNIVERSITY SAFETY CREDO

We, the Administration and Employees of Southwestern Oklahoma State University, believe that while risks exist:

- Accidents and injuries are preventable.
- Each of us has a personal responsibility for our safety and the safety of others, both on and off the job.
- No work objective is so important that it will be pursued at the sacrifice of safety.
- Safe conduct of operations is a condition of employment at Southwestern Oklahoma State University.
- A job is well done only if it is done safely.
- Southwestern Oklahoma State University should have the best safety performance in State Government.