

# 10. Work Operations

## Overview

This section provides guidelines for the safe use of equipment during work operations and provides safety guidelines for certain work situations. This section discusses the following topics as they relate to safe work operations:

- Commercial Building Operations – High Risk
- Compressed Gas Cylinders
- Electrical Safety
- Ergonomics
- Hand Tools
- Housekeeping
- Ladders
- Lockout/Tagging
- Machines
- Materials Handling
- Noise
- Power Tools
- Private Property
- Rigging and Hoisting Equipment
- Scaffolds

- Self-Inspections
- Setting and Removing Poles
- Smoking
- Specialized Equipment
- Walking and Working Surfaces
- Water Operations

The single most important factor in the prevention of accidents during work operations is a positive attitude toward safety. The habit of anticipating accidents can prevent many of them from happening. Then, if an accident occurs, the reaction time to correct it is much shorter.

## References

- OSHA Standards 29 CFR 1910.212, 1910.219

## Commercial Building Operations – High Risk

The following guidelines apply to working in high-risk commercial buildings, such as nursing homes, hospitals, and prisons:

1. Follow instructions from the medical staff when working in nursing homes, hospitals and prisons. Adhere to local protocol and medical precautions such as wearing gowns, facemasks, and rubber/vinyl gloves as necessary.
2. Avoid recognized hazards and health problems. Always contact the nursing station for local instructions before starting work. Never handle body fluids without proper training and precautions. Direct questions to the Risk Management Department.

## Compressed Gas Cylinders

The following guidelines apply to the use of compressed gas cylinders:

1. Acetylene, oxygen, and other compressed gas cylinders must be used in an upright position and secured or chained to a secure support or secured so they cannot fall over when using a rack.
2. All cylinders must be valved (closed) off, disconnected, and secured at the end of each workday.

## Electrical Safety

The following guidelines apply to electrical safety:

1. All electrical circuits or power sources must be deenergized and grounded or otherwise secured (insulation) to protect employees and others from electrical shock.
2. Do not conceal or block access to electrical circuits, conductors, or wires. A 36" Clearance Zone shall be maintained around all breaker boxes – electrical closets should NOT be used for storage.
3. Report all downed wires to your supervisor. **DO NOT TOUCH!**
4. Use ground-fault circuit interrupters (GFCI) at all times.
5. Ground or double insulate electrical tools and equipment.
6. Do not overload circuits.
7. Recharge batteries in well-ventilated areas to prevent the buildup of explosive gases.
8. Do not recharge batteries in areas used to store combustible, toxic or otherwise hazardous materials. Leave vent caps in place when recharging.
9. Direct questions regarding safe work around or with electricity to a supervisor before attempting tasks that might expose employees or others to electrical shock.

## **Ergonomics**

Ergonomics is the science of adapting equipment, procedures, and surroundings to people. Ergonomics includes the following:

- Employees and their physical and mental abilities
- Tasks and the associated physical and mental demands of the job
- Environment, ranging from lighting, heat and cold, to tools used

Ergonomics can make the job safer by preventing injuries and illnesses, adjusting the job to the employee, and making the job more pleasant by reducing physical and mental stress.

The following is discussed as it relates to ergonomics:

- Cumulative Trauma Disorders
- Musculoskeletal Disorders and Illnesses
- Key Elements of an Ergonomic Environment

Refer to Section 14, Ergonomics Program, for more information about ergonomics or contact the Risk Management Department.

### **Cumulative Trauma Disorders**

Cumulative trauma disorders include Carpal Tunnel Syndrome (CTS), tendonitis, and tenosynovitis.

#### **Carpal Tunnel Syndrome (CTS)**

Carpal Tunnel Syndrome is a disorder that affects the hands and wrists. Repetitive motion causes tendons in the wrist to swell and puts pressure on nearby nerves.

#### **Tendonitis**

Tendonitis is a disorder where tendons are inflamed by repeated tensing of muscles and tendons. It may cause circulation problems from the repeated vibration or pressure.

## **Tenosynovitis**

Tenosynovitis is a disorder where repeated movement inflames tendons.

## **Musculoskeletal Disorders and Illnesses**

Musculoskeletal disorders and illnesses involve the muscles, tendons, ligaments, nerves, joints, bones or supporting body tissue. It may include disorders of the back, neck, upper or lower extremities, or the shoulders and involves strains, sprains, or tissue inflammation and dislocation.

## **Key Elements of an Ergonomic Environment**

To help prevent cumulative trauma disorders, and musculoskeletal disorders and illnesses, an ergonomically safe environment should include the following key elements:

### **1. Training and Education**

Make available instructions on the proper handling of equipment and tools at all times. Instructions and training should include, but not be limited to, the proper use of equipment directly related to an employee's job and the proper use of office furniture.

### **2. Work Site Analysis**

If an employee is experiencing ergonomic-related discomfort, a request for a work site analysis should be made to the employee's supervisor or Human Resources.

### **3. Hazard Prevention and Control**

For an ergonomic-related discomfort, the supervisor and employee should make every effort to determine the cause and document the effects through problem tracking and corrective action.

To ensure an ergonomically safe environment, employees should:

- a. Lift properly to avoid back injury. Use your legs, not your back.
- b. Check lighting and glare to guard against headaches, fatigue, and eyestrain.

- c. Always check and adjust chairs for proper body height.
- d. Have VDT workstations adjusted for body comfort. In the case of a multi-user workstation, instruct employees on adjusting chairs and other components of the workstation.
- e. Understand that ergonomics also includes taking good care of oneself, following all work procedures, and properly using all safety devices and equipment.

## Hand Tools

The following guidelines apply to the use of hand tools:

1. Make sure handles are tight and not otherwise damaged.
2. Make sure cutting tools are kept sharp.
3. Use the proper tool for each job. If the right tool is not available, notify the supervisor.
4. Carry tools in a container or belt rig designed for that purpose.
5. Do not leave tools unattended. Others might trip over or suffer head injuries if tools fall from an elevated position.
6. Electrical hand tools like saws, drills, grinders, etc., should include Ground Fault Circuit Interrupters (GFCI) to prevent the risk of shock.

## Housekeeping

Housekeeping is the responsibility of each individual and housekeeping hazards on the worksite are not tolerated. Work locations, vehicles, and the inside and outside of buildings should be kept clean and orderly at all times. Good housekeeping practices help ensure a safe work environment and fewer emergencies.

Housekeeping guidelines are listed below:

1. Keep stairways, ramps, aisles, permanent roadways, walkways and platforms, and material storage areas clear and free of obstructions and debris. **DO NOT BLOCK OR IMPEDE.**

2. Do not let paper and other combustible materials accumulate. Never store combustible materials in equipment rooms or electrical closets. Maintain a minimum 36" clearance around electrical panels and breaker boxes.
3. Care should be taken when storing boxes and other materials on shelves or racks. Boxes should not be stacked more than one level high on the top shelf and a minimum clearance of 18 inches must be maintained between top layer of storage and any lighting or sprinkler heads.
4. All flammable liquids must be stored in an U.L. approved flammable liquid storage cabinet.
5. Clean up all scrap and spills to avoid trips, falls, and fire.
6. Do not remove, deface or destroy any warning or danger sign/device.
7. Keep floors and platforms free of dangerous projections or obstructions and maintain them free of oil, grease, and water. If the type of operation produces slippery conditions, use mats, grates, cleats or other methods to reduce the slipping hazard.
8. There should be no general storage in rooms housing boilers, furnaces or HVAC systems.

## **Ladders**

The following guidelines apply to the use of ladders:

1. Do not use metal or aluminum ladders near live electrical lines.
2. Inspect all ladders daily for defects before use. Make sure the safety feet are in proper working order and in place. Use ladders only for climbing.
3. Tag defective ladders as "Out-of-Service" or "Defective". Arrange for proper disposal as soon as possible to prevent any further use. Under no circumstances should a defective ladder be given to anyone, employee or otherwise for their personal use. A defective ladder should be disassembled or cut apart in such a manner as to make it no longer useable as a climbing device.

4. When climbing or descending, always face the ladder and do not carry any items that prevent you from maintaining a secure grip with both hands at all times.
5. Ladders must be free of grease and oil and should not be painted except for numbering purposes.
6. When using straight and extension ladders to access raised platforms or floors, they must extend at least three feet above the raised platform or floor. Ladders must be tied off when used to access raised areas.
7. Make sure safety dogs/latches are engaged on extension ladders.
8. Only one person at a time on ladders! Do not jump from ladders! Use common sense at all times and never take shortcuts.
9. Do not use the top two steps of a stepladder. Level all four feet and lock spreaders in place. Do not place tools or other materials on the steps or platforms of a stepladder.

## **Lockout/Tagging**

Locking and tagging is used to prevent operation of a switch, valve, or piece of equipment to prevent injury or damage. Adhere to all OSHA regulations.

The following guidelines apply to lockout/tagging:

1. Electrical switches and other electrical devices must have fuses or heating elements removed, and be locked, tagged, and tried by an electrician to ensure the correct device is locked out or that an interlock is not back-feeding. Then, other people involved in a job must attach locks/tags to the same device. The electrician must not remove his lock/tag or operate the device until all tags have been removed.
2. If several individuals are working with a locked and tagged piece of equipment, each must attach his/her own lock and tag with signature and date.
3. If lockouts are required beyond one shift, the first shift must remove their locks at the end of the shift, and the second shift must attach their own locks. The same applies to the third shift.
4. Lines dealing with acids, flammable fluids, high pressure steam, and all electrical lines (regardless of voltage) must be locked as well as tagged.

5. Only the person whose signature is on a tag may remove it.
6. Only one person may sign a tag. Any number of tags may be attached to a valve, switch, or device to properly protect people. Operation is prohibited under all circumstances until all locks and tags are removed. Anyone who removes a lock and tag is responsible for satisfactory completion of the work including reinstallation of guards and warning all affected people that the lockout is being removed.

**WARNING:** Anyone who operates a valve, switch, or device with an attached lock or tag is subject to immediate disciplinary action.

## Machines

Moving machine parts have the potential to cause severe workplace injuries, such as crushed fingers or hands, amputations, burns, and blindness. Safeguards are essential to protect workers from these preventable injuries. The following topics are discussed as they relate to the use of machines:

- Mechanical Hazards
- Non-Mechanical Hazards
- Machine Training Overview
- Use of Protective Clothing and Equipment

## Mechanical Hazards

A wide variety of mechanical motions and actions may present hazards to the worker. Dangerous moving parts in the following areas need safeguarding:

1. The point of operation

The point of operation is the point where work is performed on the material, such as cutting, shaping, boring, or forming of stock.

2. Power transmission apparatus

Power transmission apparatus refers to all components of the mechanical system that transmit energy to the machine part performing the work. These

components include flywheels, pulleys, belts, connecting rods, couplings, cams, spindles, chains, cranks, and gears.

### 3. Other moving parts

Other moving parts refer to all machine parts that move while the machine is working. These can include reciprocating, rotating, and transverse moving parts, as well as feed mechanisms and auxiliary parts of the machine.

Mechanical hazards can include the movement of rotating members, reciprocating arms, moving belts, meshing gears, cutting teeth, and any part that impacts or shears. These different types of hazardous mechanical motions and actions are basic to nearly all machines and recognizing them is the first step toward protecting workers from danger.

The basic types of hazardous mechanical motions and actions are:

- Motions
  - Rotating (including in-running nip points)
  - Reciprocating
  - Transverse
- Actions
  - Cutting
  - Punching
  - Shearing
  - Bending

## **Motions**

### **Rotating Motion**

Rotating motion can be dangerous. Even smooth, slowly rotating shafts can grip clothing and through mere skin contact force an arm or hand into a dangerous position. Injuries due to contact with rotating parts can be severe.

Collars, couplings, cams, clutches, flywheels, shaft ends, spindles, and horizontal or vertical shafting are some examples of common rotating mechanisms that may

be hazardous. The danger increases when bolts, nicks, abrasions, and projecting keys or setscrews are exposed on rotating parts.

The rotating parts on machinery can cause in-running nip point hazards. There are three main types of in-running nips:

1. Parts can rotate in opposite directions while their axes are parallel to each other. These parts may be in contact (producing a nip point) or in close proximity to each other. In the latter case, the stock fed between the rolls produces the nip points. This danger is common on machinery with intermeshing gears, rolling mills, and calendars.
2. Nip points can be created between rotating and tangentially moving parts. Some examples include the point of contact between a power transmission belt and its pulley, a chain and a sprocket, or a rack and pinion.
3. Nip points can occur between rotating and fixed parts that create a shearing, crushing, or abrading action. Examples include spoked hand wheels or flywheels, screw conveyors, or the periphery of an abrasive wheel and an incorrectly adjusted work rest.

### **Reciprocating Motion**

Reciprocating motions may be hazardous because during the back-and-forth or up-and-down motion, a worker may be struck by or caught between a moving and stationary part.

### **Transverse Motion**

Transverse motion (movement in a straight, continuous line) creates a hazard because a worker may be struck or caught in a pinch or shear point by the moving part.

### **Actions**

#### **Cutting Action**

Cutting action involves rotating, reciprocating, or transverse motion. The danger of cutting action exists at the point of operation where finger, head, and arm injuries can occur and where flying chips or scrap material can strike the eyes or face. Such hazards are present at the point of operation in cutting wood, metal, or other materials. Typical examples of mechanisms involving cutting hazards include band saws, circular saws, boring or drilling machines, turning machines (lathes), or milling machines.

#### **Punching Action**

Punching action results when power is applied to a slide (ram) for the purpose of blanking, drawing, or stamping metal or other materials. The danger of this type of action occurs at the point of operation where stock is inserted, held, and withdrawn by hand. Typical machinery used for punching operations is power presses and ironworkers.

### **Shearing Action**

Shearing action involves applying power to a slide or knife to trim or shear metal or other materials. A hazard occurs at the point of operation where stock is inserted, held, and withdrawn. Typical examples of machinery used for shearing operations are mechanically, hydraulically, or pneumatically powered shears.

### **Bending Action**

Bending action results when power is applied to a slide to draw or stamp metal or other materials. A hazard occurs at the point of operation where stock is inserted, held, and withdrawn. Equipment that uses bending action includes power presses, press brakes, and tubing benders.

### **Requirements for Safeguards**

Safeguards must meet the following minimum general requirements to protect workers against mechanical hazards:

1. Prevent contact

The safeguard must prevent hands, arms, or any other part of a worker's body from making contact with dangerous moving parts. A good safeguarding system eliminates the possibility of the operator or another worker placing their hands near hazardous moving parts.

2. Be Secure

Workers should not be able to easily remove or tamper with a safeguard since a safeguard that can easily be made ineffective is no safeguard at all. Guards and safety devices should be made of durable materials that withstand conditions of normal use. They must be firmly secured to the machine.

3. Protect from falling objects

The safeguard should ensure that no objects could fall into moving parts. A small tool that is dropped into a cycling machine could easily become a projectile that could strike and injure yourself or someone else.

#### 4. Create no new hazards

A safeguard defeats its own purpose if it creates a hazard of its own such as a shear point, a jagged edge, or an unfinished surface that can cause a laceration. The edges of guards, for instance, should be rolled or bolted to eliminate sharp edges.

#### 5. Create no interference

A safeguard that impedes a worker from performing a job quickly and comfortably is of no real value. Proper safeguarding can actually enhance efficiency since it can relieve the worker's apprehensions about injury.

#### 6. Allow safe lubrication

If possible, one should be able to lubricate a machine without removing the safeguards. Locating oil reservoirs outside the guard with a line leading to the lubrication point reduces the need for the operator or maintenance worker to enter the hazardous area.

## **Non-Mechanical Hazards**

Although this manual emphasizes concepts and techniques for safeguarding mechanical motion, machines obviously present a variety of other hazards that cannot be ignored. Although a full discussion of these hazards is beyond the scope of this publication, some non-mechanical hazards that can affect the safe operation of machinery, such as electrical hazards, noise, and chemical hazards are described below.

### **Electrical Hazards**

All power sources for machinery are potential sources of danger. When using electrically powered or controlled machines, for instance, the equipment as well as the electrical system must be properly grounded. Replacing frayed, exposed, or old wiring also helps protect the operator and others from electrical shocks or electrocution. High-pressure systems also require careful inspection and maintenance to prevent possible failure from pulsation, vibration, or leaks. Such a failure could cause explosions or flying objects.

### **Noise**

Machines often produce noise that can result in a number of hazards to workers. Not only can noise startle and disrupt concentration, it can interfere with communications and hinder the worker's safe job performance. Research has linked noise to a whole range of harmful health effects from hearing loss and aural pain, to nausea, fatigue, reduced muscle control, and emotional disturbances.

Engineering controls, such as the use of sound-dampening materials, and less sophisticated hearing protection, such as earplugs and muffs, are suggested methods to control the harmful effects of noise. Vibration, a related hazard that can cause noise and result in worker fatigue and illness, may be avoided if machines are properly aligned, supported, and if necessary anchored.

### **Chemical Hazards**

Because some machines require the use of cutting fluids, coolants, and other potentially harmful substances, operators, maintenance workers, and others in the vicinity may need protection. These substances can cause ailments ranging from dermatitis to serious illnesses and disease. Specially constructed safeguards, ventilation, protective equipment and clothing are possible temporary solutions to the problem of machine-related chemical hazards until hazards can be better controlled or eliminated from the workplace.

### **Machine Training Overview**

Even the most elaborate safeguarding system cannot offer effective protection unless the worker knows how to use it and why. Specific and detailed training is therefore a crucial part of any effort to provide safeguarding against machine-related hazards. Thorough operator training should involve instruction or hands-on training on the following:

- Description and identification of hazards associated with particular machines
- Description of safeguards, how they provide protection, and the hazards for which they provide protection
- How to use the safeguards and why
- How and under what circumstances safeguards can be removed and by whom (in most cases, repair or maintenance personnel only)
- What to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection

This kind of safety training is necessary for new operators, maintenance, and setup personnel when any new or altered safeguards are put in service or when workers are assigned to a new machine or operation.

Documented training must be on file to operate the following machines:

- Grinders
- Chopsaw
- Chainsaw
- Tablesaw
- Trencher

## Materials Handling

The following guidelines are intended to help avoid incident pitfalls and injuries. Remember the ground rule - Avoid manual material movement, especially lifting from the ground/floor. Engineer the job to minimize material handling.

If materials must be moved by hand, heed the following suggestions:

1. Be in good physical shape. Employees should not attempt difficult lifting tasks if they are not used to lifting and doing vigorous exercise.
2. Think before acting. Place materials conveniently and have handling aids available. Make sure sufficient space is cleared for action. Wear safety shoes providing metatarsal protection.
3. Test the object's weight before handling. If it appears to be too heavy or bulky, get a mechanical lifting aid, somebody to help, or both.
4. Get a good grip on the load. Use the palm of the hands and use gloves.
5. Place the load close to the body and pull the load in before lifting. **This is the most important lifting rule.**
6. Place the feet close to the load. Place feet far enough apart for stability and have one foot ahead of the other. Let them point in the direction of movement.
7. Lift primarily by straightening your legs and by slightly unbending your back.
8. Do not twist the back or bend sideways.

9. Do not perform awkward lifts.
10. Do not hesitate to get help.
11. Do not lift at arms length.
12. Do not continue heaving when the load is too heavy.

## **Noise**

Exposure to excessive noise over prolonged periods of time can lead to hearing loss. Employees exposed to noise for 8 or more hours with a weighted average of 85 dBA (the action level) must be included in the Hearing Conservation Program.

FairPoint Communications, Inc. makes noise protection available for employees who work near diesels or machinery or in high noise areas. Hearing protection must be worn whenever a loud noise exists, even for short periods of time.

Refer to Section 22, Hearing Conservation, for more information on noise and hearing.

## **Power Tools**

The following guidelines apply to the use of power tools:

1. Keep tools and other materials away from edges and openings to prevent accidental head or other injuries to those below. Tie off tools to your tool belt.
2. Portable power tools must not be operated unless the employee is trained in their use.
3. Electrical power tools must be double insulated or must be an approved system that contains three wires with a ground. Check for ground plugs daily before use. Always use a GFCI (Ground Fault Circuit Interrupter) device when using power tools.
4. Inspect daily for signs of worn or damaged cords and replace/repair before use if damage is detected. **ELECTRICAL SHOCK IS DEADLY!**
5. To prevent loss of body parts, make sure all guards are in place and operative before use.

6. Know the proper use of tools and use the correct tool for each job. Ask if you don't know. Do not use any power tools or equipment unless you have been trained and authorized by your supervisor.
7. Report all defective power tools to the supervisor and take them out of use.
8. Be aware of the surroundings when operating power tools. Do not stand in water and be aware of fellow employees.
9. THINK. When the power tool is operating, you cannot hear warnings from others. **You must be responsible for your actions and the consequences to others... Work Safely!**

## Private Property

The following guidelines apply to working on private property:

1. When entering private property, always announce your presence and state your business. Be aware that you may be required to have a customer's representative escort you onto the job site.
2. When performing work on private property, always consider the customer's safety as well as your own.
3. Work must be done carefully and safely leaving equipment and premises as neat and clean as it was found. Customer satisfaction is key to our success.
4. Report to the customer and your supervisor any unsafe or potentially dangerous conditions that may exist prior to beginning any work.
5. Employees should not enter a customer premises if aggressive animals are present.
6. Employees may not enter a customer premises or do work on customer property if a minor (under age 18) is present without adult supervision.

## Rigging and Hoisting Equipment

Rigging and hoisting equipment must be used in a safe manner. The equipment used must meet OSHA requirements and construction standards. The most important task in rigging is the proper inspection of ropes, slings, and blocks. Ropes and blocks must be handled with great care to ensure good shape when needed.

### Rope

The following guidelines apply to the use of rope:

1. When removing rope from the coil, make sure it unwinds in a counterclockwise direction. Lay coil down flat with the inside end at the bottom. Pull end of rope up through the center of the coil. Always take new rope from the center of the coil. After use, coil rope in a clockwise direction.
2. Store rope in a dry place with free air circulation. Never store rope near exhaust steam or where it may come in contact with sharp objects.
3. Wet rope should never be stored. Always properly dry rope if it is wet to avoid premature loss of rope life and strength.
4. Use dry rope whenever possible. **If wet rope must be used, use rubber gloves when working near energized lines or equipment.**
5. Keep rope away from oil, sand, mud and grit, and keep it away from acids or surfaces upon which acid has been spilled.
6. Inspect rope frequently and do not use rope if it is worn or shows signs of deterioration. Inspect rope for broken strands, rot, and excessive wear.
7. All rope ends should be taped, whipped or woven to prevent unraveling.
8. Make sure all tag lines, hand lines, etc. are properly done up and hung up.
9. Select the appropriate knot for each particular job.
10. Do not use frozen rope.

11. Avoid kinks in rope. Kinks pulled through a block shear the fibers and weaken the rope.
12. When ropes are used as guys and other supports and are exposed to bad weather, they should be slacked off to prevent overstrain due to shortening from wetting.
13. When moving from one location to another, do not allow rope to drag on the ground or over sharp objects.
14. Avoid sudden jerks when raising or lowering a load.
15. A sharp bend reduces the strength of a rope by putting extra strain on the outer fibers. Do not tie or snub rope to objects of relatively small diameter if rope is placed under tension. Select a reasonably smooth-rounded surface for this purpose.
16. Never straddle or stand unnecessarily close to rope under tension. Do not stand in the inside angle or in the path of rope being paid out or under tension.
17. Do not lubricate manila rope. The manufacturer has lubricated the rope for its service life.
18. Splice rope correctly to prolong the rope's life and service. Splices are better and stronger than knots for permanent connection.
19. Always allow an ample margin of safety in the strength of rope. For general industrial work using first quality rope, a safety factor of 5 to 1 is usual for new manila rope, and 6 to 1 for new polypropylene rope. Use higher safety factors for older rope.

## **Slings**

The following guidelines apply to the use of slings:

1. Replace slings that show signs of wear.
2. Place pads on sharp corners between the load and sling.
3. Make sure slings are of adequate size and length.
4. When slings are used at sharp angles, their strength is greatly reduced.

## **Blocks**

The following guidelines apply to the use of blocks:

1. Do not drop or hammer blocks unnecessarily.
2. Check blocks to ensure they are made up properly (properly reeved).
3. Inspect blocks for bent shafts, bent housings, split sides or shells, and damaged or hard running sheaves.
4. Use the proper size rope and blocks for the job. Make sure the block size is correct for the size of rope used.
5. Lubricate blocks regularly.
6. Never place a load on the point end of a block hook.

## **Scaffolds**

The following guidelines apply to the use of scaffolds:

1. Inspect all scaffolding to ensure guardrails, toe boards, and planking are secure. Make sure locking pins are in place. Make sure wheels are locked on movable scaffolds. Repair or replace any weakened or damaged components or accessories of scaffolding before use.
2. Erect scaffolding level and plumb on sound, rigid footing.
3. Planking must extend over end supports at least six (6) and no more than twelve (12) inches. Platforms must be at least eighteen (18) inches wide.
4. Provide ladders for access and descent. Climbing the side of scaffolding is not permitted.

## **Self-Inspection Program**

While accident investigation is an important safety tool, it has one serious drawback: it cannot take effect until after an accident occurs. The purpose of a self-inspection program is to detect, report, and correct hazards before accidents happen. All manned locations must be inspected quarterly and unmanned

locations are to be inspected semi-annually. Refer to the safety inspection forms in the Forms Appendix.

To help ensure a safe work environment and reduce emergency situations, inspect departments on an informal basis daily. Instruct and encourage all employees to report hazards immediately. Take prompt corrective action on reported hazards.

The Local Manager should keep copies on file of all formal inspection reports.

Self-inspection is a critical component of an overall safety program and should be used by all entities as an effective method of risk management and loss prevention. Identifying, reporting, and correcting hazards before accidents happen are functions of an effective self-inspection program.

## **Conducting Inspections**

Follow the guidelines below to conduct inspections:

1. Prior to an inspection, review the previous inspection and accident investigation reports and pay special attention to hazards previously noted.
2. Forward a copy of the completed inspection form to the Local Manager with recommendations for corrective action. When possible, inspectors should take immediate corrective action to eliminate or minimize hazards. Management should then initiate permanent corrective action.
3. Conduct inspections either quarterly or semi-annually depending upon whether site is manned or unmanned.
4. Inspect certain areas more frequently, if necessary.
5. Examples of items to be inspected include fire extinguishing equipment, exits, stairs, signs, material storage, lighting and ventilation, yards, parking lots, and scaffolds.
6. Inspect automatic sprinkler systems on an annual basis. Inspect wet pipes quarterly and dry pipes annually. Refer to the Automatic Sprinkler Systems Inspection forms in the Forms Appendix.
7. Inspect motor vehicles and certain types of facility equipment that present unusual hazards. Conduct both preventative maintenance inspections and operator inspections on vehicles. Refer to the Vehicle Inspection Reports in the Forms Appendix.

8. Employees responsible for vehicle preventative maintenance should perform preventative maintenance inspections. The vehicle driver or equipment operator at the beginning and end of each shift should perform operator inspections.

## Setting and Removing Poles

The following guidelines apply to setting and removing poles:

1. If any holes are left unfilled at the end of a work period, protect them with substantial coverings and have it clearly marked with neon tape.
2. Keep bystanders out of the work area.
3. Stay off a gin pole when it is being used to raise another pole.
4. While setting or removing poles between or near conductors energized above 600 volts, follow the guidelines below:
  - a. If safe clearance cannot be maintained, the conductors must be de-energized, covered with protective devices, and spread apart or a pole guard must be used to minimize accidental contact.
  - b. When handling the butt of the pole, wear rubber gloves and sleeves whether or not cant hooks, peaveys or slings are used.
  - c. Until a pole is positively secured from moving against an energized conductor, do not step on or off the truck, or let an employee standing on the ground touch any part of the truck without using rubber gloves.
5. When pikes are used to hold poles in place while holes are backfilled, they must be firmly secured until the backfill is sufficient to hold poles. When a pole is being "canted" or "hooked", the pikes should be held.
6. Never stand or pass under a suspended load or adjacent to or over or under a loaded winch line.
7. When handling or working on poles, wear suitable gloves and a shirt or jacket with the sleeves rolled down.

8. Use hoisting signals when an operator's vision is obstructed. The operator must obey a stop signal given by anyone.

## Smoking Regulations

Smoking only in approved areas helps ensure a safe work environment and fewer emergencies. Smoking regulations are listed below:

1. Smoking is permitted in approved smoking areas only. Check with the supervisor for approved smoking areas.
2. Smoking or open flames are not permitted in areas where dangerous gases might be present, such as oil rooms, hydrogen gas areas, battery rooms, acetylene storage or welding areas.
3. Smoking is not permitted in company vehicles.
4. Smoking is also not permitted in storerooms, flammable liquid storage and use areas, or in areas where quantities of combustible materials are kept.
5. The absence of "No Smoking" signs does not excuse smoking in dangerous areas.

## Specialized Equipment

Safe operating guidelines are discussed for the following types of specialized equipment. Any employee must have documented training on file before using any of the following equipment.

- Aerial Manlift Equipment
- Backhoes
- Digger Derricks
- Forklifts
- Pole Trailers
- Power Lawn Mowers, Chain Saws, Trimmers and Blowers
- Other Vehicles

## Aerial Manlift Equipment

Safe operation of an aerial manlift depends upon the operator, the mechanical condition of the unit and the assurance the unit is not used to lift loads in excess of the maximum rated capacity. This section contains safe operating principles and must be read carefully before operating an aerial manlift.

The following guidelines apply to the use of aerial manlift equipment:

1. Only trained and authorized persons should operate aerial manlifts.
2. Pay special attention and periodically review all capacity placards and caution, danger or warning decals.
3. **Always work with the boom uphill from the truck. Never park the truck uphill from the job. Always use wheel chocks.**
4. **Never leave truck unattended with the hand brake applied.**
5. Always look in the direction the bucket is traveling as you operate the machine.
6. Wear a body harness with a lanyard attached to the boom bucket.
7. **Never** operate the lower level controls unless the operator in the bucket gives permission to do so.
8. Do not move the truck unless the boom and outriggers are secured.
9. Never ride in the bucket while the truck is traveling.
10. Do not wear climbers in the bucket and always keep footwear free from grease, oil or other slippery substances.
11. Never "walk the boom" to enter or leave the bucket.
12. The aerial manlift along with the men in the bucket must maintain proper clearance from unprotected energized conductors unless insulated (15 feet minimum).

## Backhoes

1. Safe operation of this equipment is necessary to ensure operator safety and the safety of those around the equipment. Documented training is required to

be on file. The operator should know the positions and functions of all controls before attempting to operate the equipment.

2. Wear proper safety equipment and avoid loose clothing. Obtain additional safety equipment if safety is in doubt. Hard hats, safety shoes, ear protection, reflective clothing, safety goggles, and heavy gloves may be required.
3. Carry and maintain a fire extinguisher and first aid kit at all times. Know how to use them.
4. Know the location of underground cables, water mains, and gas lines. A ruptured gas line or cut electrical line could result in personal injury - **LOCATE**

### **Backhoe Operating Guidelines**

The following guidelines apply to the operation of backhoes:

1. Fasten seat belts before starting the engine. Never wear a seat belt loosely or with slack in the belt system. Never wear the belt in a twisted condition or pinched between the seat structures.
2. Use extreme care when stopping. If the loader or attachment is raised, the machine can tip. Keep all movements smooth. It is strongly suggested a new operator work with the machine in an open area until a "feel" of the machine is developed.
3. **Never** transport a loaded bucket at full height. Keep the bucket as low as possible for better machine balance and visibility. When transporting a loaded bucket over rough and uneven ground, keep travel speed within safe operating limits.
4. If the machine is operated on a grade or ramp, always back up the grade or drive down forward. Keep the bucket close to the ground for added stability.
5. Lower stabilizers to the operating position before "stretching out" the backhoe (lowering boom and extending dipper). If the stabilizers are not lowered, an unbalanced condition results and could cause the machine to tip.
6. Know and understand the traffic flow patterns of the job. Understand and obey the flagman, road signs or signals. Failure to do so can cause an accident.
7. **CAUTION:** Do not jump from the machine as a serious injury could result.

8. **DANGER:** Keep all machine parts away from live electrical lines. If work must be done close to high voltage lines, have the utility company disconnect them. It is not necessary to actually contact a power line for the electricity to ground through the machine. If power does ground through the machine, remain on the machine and **do not touch the machine structure**.
9. Check that all lights, if equipped, are functioning properly before operating at night.
10. **CAUTION:** Operate tractor and equipment controls from seat position only. Any other method could result in a serious injury.
11. **Stay alert.** Clear the operating area of all unauthorized persons. Know the location of fellow workers.
12. Do not attempt to drive the machine with the operator seat positioned for backhoe operation.
13. Never dig under the backhoe stabilizers. The machine could tip into the excavation if the bank caved in.
14. Stop engine before dismounting. Machine runaway and a serious accident could result.
15. **WARNING:** Before swinging the backhoe boom to either side, make sure there is ample room and all persons are out of the way.
16. **CAUTION:** Lock brake pedals together for road travel. There is danger of tipping the machine if either brake pedal is used alone when traveling over 5 mph.
17. **CAUTION:** Never leave the machine unattended with the engine running. Set the parking brake, lower the attachments to the ground, and stop the engine. Park the machine on level ground or sideways on a slope.
18. **WARNING:** If the clutch disconnect is not used correctly, an accident can result. Know the operation of the clutch disconnect before operating on roads.
19. Stop the engine before working on P.T.O. driven machinery or P.T.O. shaft, or performing any maintenance.

## Digger Derricks

Safe operation of a digger derrick depends upon the operator, the mechanical condition of the unit, and the assurance the unit is not used to lift loads in excess of the maximum rated capacity. This section contains safe operating principles and must be read carefully before operating the unit.

The following guidelines apply to the use of digger derricks:

1. Make sure outriggers are extended and firmly set on solid ground every time the unit is operated.
2. Always set the hand brake when the truck is positioned at the work site. Position wheel chocks before beginning operations. **Never leave truck unattended with the hand brake applied.**
3. Always look in the direction the boom is traveling as you operate the machine.
4. Whenever a polecat is working on power lines, the truck is considered energized. No personnel should approach or be near the truck under these conditions. A traffic barricade must be erected around the truck to warn traffic and pedestrians to stay clear of the work area. If the boom comes in contact with electrical lines or overhead cables, stay calm until the boom is freed or the current is cut off. Keep everyone on the ground away from the machine. If you must leave the machine, **jump - do not step off.**
5. When using the winch, make sure the rated machine capacity for a specific boom altitude is never exceeded. Check the weights of all downhaul weights, hook blocks, etc. and deduct those from the rated machine capacity placard.
6. Never leave the machine with a load in the air. If you must leave the machine, lower the load to the ground and shut down the engine.
7. Keep everyone away from suspended loads.
8. Whenever moving the truck for any distance, make sure to stow the boom to prevent road shock.
9. Never attempt to pull poles with the winch. Use a pole puller.
10. Permit no one to ride loads, slings, hooks, etc. for any reason.

## Forklifts

Forklifts move a lot of materials quickly. If misused, they can be involved in serious accidents, even fatal ones.

**Note:** Only **forklift-certified** employees should operate forklifts.

The following guidelines apply to the use of forklifts:

1. Always conduct a pre-shift or pre-use inspection of the lift truck to check hydraulics, cage, tires, brakes, steering, lights, horn, flashing warning lights, oil spots/spills, leaks, etc.
2. Drive at a safe speed for all conditions in a given situation. This includes the condition of the lift truck, road surface, load and other traffic.
3. Obey all defensive driving and highway traffic rules.
4. Whether a truck is loaded or empty, always be aware of the position of its fork tips. Lower them to not more than six inches from the floor before traveling.
5. Never permit anyone to walk or stand under the forks or elevated loads.
6. Keep to the right, but do not get too close to persons or materials along aisles.
7. Give pedestrians the right of way. Sound the horn to warn them of an approaching truck.
8. At blind intersections, slow down and stop. Sound the horn to warn cross traffic.
9. Always slow down when making a turn, even with an empty truck.
10. Allow ample time and space for stopping. Keep about three truck lengths behind the truck ahead.
11. Do not pass in blind spots or other dangerous areas.
12. Never carry passengers and do not use the lift mechanism as an elevator.
13. Do not participate in "horseplay" or stunt driving.
14. Keep arms and feet inside the truck and away from the hoist mechanism.
15. Wear the seatbelt.

16. Be alert and look in the direction of travel. If the load obstructs vision, travel backwards.
17. Leave plenty of operating room so panic stops and sudden turns are unnecessary.
18. Slow down on wet and slippery surfaces and avoid running over objects on the roadway. If possible, choose alternate routes when a roadway surface is rough.
19. Never drive a truck with wet or greasy hands. Also keep shoes dry to avoid slipperiness.
20. Wear personal protective equipment as appropriate or required.
21. Always check the front and back before starting a lift truck.
22. Do not move a load unless it is properly stacked and tied.
23. Never use a truck to push or tow a load.

## **Pole Trailers**

The following guidelines apply to the use of pole trailers:

1. The trailing end of a load of poles must be marked by a red flag during the day and a red light at night. As an additional precaution, warning flags or lights may be placed in the center of long loads. **Refer to applicable state laws for compliance.**
2. Always check lights, trailer brakes, tire pressure, and tire treads daily.
3. Make sure to utilize safety chains. Make sure they are properly fastened and long enough so turning is not a problem.
4. Securely fasten all ramps and loose equipment.
5. Remember that pulling a trailer increases your stopping distance. Drive accordingly.
6. Remember the maximum height is 13'6" and maximum width is 8'. Make sure to check for restrictions on highways and roadways.

7. If it is necessary to store poles at the location where they are to be set, they must be placed so they do not interfere with traffic.
8. If poles are left on or near a street, highway or walkway overnight and create a hazard, safeguard them with red lights or well-lit warning signs.
9. Do not remain on a pole pile while poles are being hoisted.
10. Securely fasten poles loaded on a truck or trailer in at least two places.
11. Never ride pole dollies or trailers.
12. Chock or securely brake the wheels of the transporting vehicle prior to loading.

## **Power Lawn Mowers, Chain Saws, Trimmers, and Blowers**

The following guidelines apply to the use of power lawn mowers, chain saws, trimmers, and blowers:

1. Safety glasses and hearing protection are required.
2. Always make sure all applicable guards are in place prior to using power lawn mowers, chain saws, trimmers, and blowers.
3. Equip all power equipment with adequate guards that must remain in place while the unit is operating.
4. Prior to making adjustments, inspections or repairs, always turn off the unit and allow the equipment to come to a complete stop.
5. Remove any loose materials from the work area.
6. Avoid standing in front of discharge openings.
7. When working on a slope or incline, work across the face of the slope.
8. Always stop a gasoline-powered unit and let it cool prior to refueling, servicing or maintenance.
9. Always know the location of other workers in the area.

## **Other Vehicles**

When operating other vehicles and equipment, such as all terrain vehicles, boats, bulldozers, snowmobiles, trac altering vehicles and tractors, it is important to follow appropriate safety guidelines. Employees operating other specialized vehicles and equipment must be familiar with the operating manual and trained on safe and proper use prior to operation.

## **Walking and Working Surfaces**

The following guidelines apply to walking and working surfaces:

1. Provide a stairway or ladder at all points of access where there is a break in elevation of 19 inches (48 cm) or more, and no ramp, runway, sloped embankment or hoist is provided.
2. Employees must not use any spiral stairways that are not a permanent part of the structure on which construction work is performed.
3. Provide a double-cleated ladder or two or more separate ladders when ladders are the only means of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic.
4. When a building or structure has only one point of access between levels, that point of access must be kept clear to permit free passage of employees. When work must be performed or equipment used and the point of access is restricted, a second point of access must be provided and used.
5. When a building or structure has two or more points of access between levels, at least one point of access must be kept clear to permit free passage of employees.
6. Provide stairway and ladder fall protection systems that comply with all pertinent requirements.

## **Water Operations**

The following guidelines apply to working around or over water:

1. Whenever it is necessary to work in a location where there is a possibility of falling into water, employees must wear a U.S. Coast Guard approved life jacket and/or body harness with an approved lifeline.
2. Discuss rescue procedures and provide necessary safety equipment prior to any work being done around water.
3. If there is danger of drowning, wear an approved personal flotation device or protect employees with a safety harness or net.