

# Section 7

## General Safety Rules

The following general safety rules apply to all County personnel. These rules do not prohibit departments and divisions from promulgating more stringent or specific rules and regulations relevant to their particular operation. Each and every employee has an obligation to perform his/her duties in a safe and efficient manner and to report any and all unsafe acts or situations to his/her supervisor immediately.

In addition to these general safety rules, all state, local and federal rules and regulations apply.

### General Housekeeping

All employees will be responsible for good housekeeping. The rules listed below will be followed by all employees:

- (a) Aisles, passageways, stairways and stairwells will be kept clear of tools, hoses and trash, and shall not be used for storage.
- (b) Oil, grease, or other liquids when spilled on the floor or work surfaces shall immediately be wiped up or sprinkled with absorbent floor material. Spill areas should be marked and barricaded when appropriate.
- (c) All employees are required to keep their work area clean and neat.
- (d) Welding leads, electric, steam, and air lines should be kept off floors by use of trees and hooks wherever possible.
- (e) Scrap material and rubbish shall be placed in containers provided for that purpose.
- (f) Metal stock, lumber, and cased or crated goods shall be stored in a neat, safe, and orderly manner so as not to protrude into aisle or walking areas. Round stock shall be blocked to prevent rolling; gas cylinders secured by chains in an upright position; and tiered material cross tied.
- (g) Mechanical rooms, HVAC rooms, and electrical closets shall not be used for storage and shall be maintained in a clean condition.

## Walking/Working Surfaces

In general, every hole or chute/hatch that an employee can fall through, trip or get caught in, will be guarded by a cover of standard strength or by standard railings, mid rails and toe boards.

Walkways, aisles, stairways and/or platforms will remain clear of tools, hoses, cables and trash and sufficient safe clearances shall be maintained.

Walking-Working  
Surfaces

Maintenance activities should be roped off if they present any potential tripping, electrical, or falling object hazard. These areas are to be entered by authorized personnel only. Barricades and caution tape can be used instead of rope if that affords enough protection to safeguard other employees.

Sliding down handrails of stairs and ladders is prohibited. Always ascend and descend ladders and stairs one rung or step at a time. Maintain a three-point contact at all times.

Exhibit M

Every open sided floor or platform 4 feet or more above an adjacent floor or ground level will be guarded by standard railings or equivalent. *Platform: Any elevated surface designed or used primarily as a walking or working surface, and any other elevated surfaces upon which employees are required or allowed to walk or work while performing assigned tasks on a predictable and regular basis.*

Storage or material handling on floors above another shall be marked with the loading capacity set by the building official.

## Ladder Safety

The primary safety hazard involved with using a ladder is falling. A poorly designed, damaged, or improperly used ladder may cause the worker to fall.

Ladder safety rules include, but are not limited to the following:

- (a) Never exceed the rated weight limits of the ladder.
- (b) All ladders shall be checked before using to make certain that rungs and side rails are in sound condition and free of grease, oil, etc.
- (c) All wood parts shall have no sharp edges or splinters.
- (d) Ladders with broken or missing steps, rungs, or cleats, broken side rails or other faulty parts shall not be used and be withdrawn from service for repair or destruction. They shall be tagged or marked "Dangerous—Do Not Use."
- (e) Portable ladders shall be firmly placed on secure footing. If there is a danger of slipping, the ladder shall be held by a fellow worker or tied in place.

Rating of ladders		
Rating	Type	Weight Limit
Heavy duty		
Industrial	IA	300 lbs
Heavy duty	I	250 lbs
Medium duty	II	225 lbs
Light duty	III	200 lbs

- (f) Both hands shall be kept on the ladder while ascending or descending.
- (g) The employee shall always face the ladder when climbing up or down.
- (h) If a ladder must be placed in front of a blind doorway, the door shall be locked or guarded by a fellow employee.
- (i) Barrels, boxes, chairs, or crates, etc., shall not be used in place of stepladders or used as bases to obtain additional height.
- (j) Short ladders shall not be spliced together to provide long sections.
- (k) Straight ladders shall not be used unless equipped with safety shoes.
- (l) Stepladders shall be fully extended and in sound condition before using. They shall be equipped with a metal spreader or locking device to hold the front and back sections in the open position.
- (m) The top two steps of a stepladder shall not be used as a step or to sit on.
- (n) Extension ladders longer than 60 feet shall not be used.
- (o) Extension ladders, when extended, shall have at least 30" of overlap.
- (p) Metal ladders shall never be used near electrical equipment, wires or cables.
- (q) Ladders used to gain access to a roof or other area shall extend at least 3 feet above the top point of support.
- (r) Never step on the top four rungs of an extension ladder.
- (s) Never reposition the ladder while on it or from above.
- (t) Ladders shall be equipped with a line near the top rung and shall be secured to support where possible.
- (u) The foot of a ladder shall, when possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the support).

**Fixed Ladders:**

Usually designed  
for 250 lbs weight  
concentrated in  
middle

- (a) Fixed ladders shall be maintained and inspected regularly.
- (b) Ladders with broken or missing rungs, broken side rails or sharp protruding edges will be tagged or marked "Dangerous—Do Not Use" and fixed immediately.
- (c) Fixed ladders that are exposed to the elements should be painted to prevent rusting and deterioration.

- (d) Fixed ladders with a length of more than 20 feet to a maximum unbroken length of 30 feet shall be equipped with cages or a ladder safety device.
- (e) Ladder safety devices may be used on tower, water tank and chimney ladders over 20 feet in unbroken length in lieu of cage protection. No landing platform is required in these cases. All ladder safety devices such as those that incorporate lifebelts, friction brakes, and sliding attachments shall meet the design requirements of the ladders that they serve.

## **Stairs**

Stair safety rules include, but are not limited to the following:

- (a) Use handrails and maintain a three-point contact at all times.
- (b) Immediately clear from stairs spills or objects that could cause a fall.
- (c) Packages or other materials carried on stairways shall be held so that vision is not obscured.
- (d) All stairways, catwalks, gangways, and open work areas above the ground or floor shall be well lit and be provided with substantial guardrails.
- (e) Stair strips shall be kept in place and in good condition.

## **Scaffolding**

Never sit, lean, or rest on or against any railing lifeline.

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

Scaffolding  
E-Tools

Tools and equipment shall not be left unsecured in any elevated scaffold.

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

Scaffold planks shall extend over their end supports not less than 6 inches and no more than 18 inches.

PumpJack

Scaffold planking shall be overlapped a minimum of 12 inches or secured from movement.

Guardrails, midrails, and toe boards shall be installed on all open sides and ends of platforms more than 10 feet above the floor or ground level.

Where persons are required to work or pass under a scaffold, there shall be a screen with a 2-inch maximum opening between toe boards and the guardrails.

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

Employees shall not work on scaffolds during storms or high winds.

Aerial Lifts

Only employees that are qualified as competent can erect and inspect scaffolds.

## **Electrical Safety**

Hand tools, electrical cords and outlets will be inspected periodically to check for reversed polarity, grounding terminals and devices.

Ground fault circuit interrupter (GFCI) will be used where there are water operations that could pose a potential hazard.

Only authorized and qualified persons shall make repairs to or work on electrical equipment.

All electrical equipment shall be grounded or double insulated.

Hands shall be dry when using any electrical equipment and the user shall not be standing in, or too close to, water.

Working surfaces shall be kept dry when working with or near an electrical apparatus.

Steam, water, or oil leaks near electrical equipment shall be reported immediately to the supervisor in charge.

Carefully examine all electrical equipment, including extension cords, every time they are used. Check for frayed, torn, or split cords, cracked or broken insulation, damaged plugs, etc.

All electrical wires shall be considered live until proven otherwise. Test all circuits prior to working on such wires.

Follow required lockout/tagout procedures.

The use of makeshift and over capacity fuses is prohibited.

Never yank a cord to disconnect it from the receptacle.

Know where and how to shut down the electrical power in the event of an emergency.

Personal space heaters are prohibited.

All electrical switches and panels will be identified and legible.

Circuit breaker boxes will be closed and all spaces filled or blanked. All circuit breaker boxes will have the breakers identified, and employees will be informed of their use if it pertains to their job functions.

Sufficient access and working space shall be provided and maintained around switches and circuit breaker boxes. An area of 30-36" clearance and an access will be maintained not only for service but also as a means of disconnecting a power source.

## **Lockout/Tagout**

OSHA 29 CFR Part 1910.147, the Control of Hazardous Energy (Lockout/Tagout) standard covers the servicing and maintenance of machines and equipment for which the unexpected energization or start-up could cause injury to employees.

According to OSHA, an energy source is any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

The lockout/tagout rule requires the employer to establish a written Energy Control Program that includes:

- (a) A listing of employees and job titles authorized to lockout/tagout.
- (b) Documented energy control procedures.
- (c) An employee-training program.
- (d) Periodic inspections of the procedures.

Each applicable department must establish an Energy Control Program and utilize procedures for affixing appropriate lockout and tagout devices.

Lockout/Tagout  
E-Tools

The Energy Control Program must include:

- (a) A specific statement of the intended use of the procedure.
- (b) A specific statement to ensure that machines and equipment are isolated and inoperative before any employee performs service or maintenance where the unexpected energization, start-up, or release of stored energy could occur and cause injury.
- (c) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy.
- (d) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout energy control measures.

Exhibit L

(Refer to the Department's Energy Control Program for specifics.)

An employee having the need to secure an energy source shall:

- (a) Utilize tags that are legible and understandable by all authorized employees.
- (b) Utilize dedicated lockout devices substantial enough to prevent accidental removal.
- (c) Utilize lockout and tagout devices that indicate the identity of the employee applying the device.
- (d) Utilize specific procedures during shift or personnel changes to ensure the continuity of lockout/tagout protection.

Before lockout/tagout devices are removed and energy is restored to the machine or equipment, employees shall:

- (a) Inspect the work area, machines/equipment to ensure nonessential items have been removed and to ensure machine or equipment components are operationally intact.
- (b) Check that all employees have been safely positioned or removed.
- (c) Only remove lockout/tagout devices from each energy-isolating device by the employee who applied the device.

The employee, and an authorized employee other than the one(s) utilizing the Energy Control Program should complete periodic inspections during the year.

## **Battery Charging**

Battery charging installations shall be located in areas designated for that purpose.

According to OSHA 1910.151, where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.

Battery charging shall be done in a well-ventilated area.

Facilities for flushing and neutralizing spilled electrolyte shall be provided.

Battery Safety

Personal protective equipment shall be worn as needed/required (safety glasses, goggles, face shields, gloves, etc.).

Because there is a possibility of hydrogen gas being produced by the charging of the battery: NO SMOKING signs shall be posted in battery charging areas. No smoking rules should be enforced.

Tools and other metallic objects shall be kept away from the tops of uncovered batteries.

## **Machinery**

Employees shall never operate machinery or equipment without authorization, and then only after receiving full instructions on its safe operation from their supervisor.

All gears, belts, pulleys, nip points or other power transmission equipment shall be adequately guarded.

Guards and safety devices shall be kept in place at all times when machinery is in use.

Machine  
Guarding

Lockout and tagout procedures shall be followed when adjusting, oiling, clearing, or repairing equipment that falls under the lockout regulations.

A brush shall be used for clearing chips away from machinery, equipment, or workbenches. Never use compressed air to blow down & clean machinery, equipment & workbenches.

Abrasive Wheels

Never apply a tool to moving machinery. Stop the machine; then, carefully remove all tools before restarting.

Tool rests, tongue guards, and eye shields shall be kept in adjustment on grinding wheels at all times.

Do not leave machines unattended while in operation.

Power shut off switches should be within the operator's reach and clearly identified and legible.

## **Power Tools**

Hazard Control #4  
Control of Wood dust  
from Horizontal Belt  
sanders

Carefully examine all electrical equipment, including extension cords, every time they are used.

Safety glasses/goggles shall be worn when operating power tools.

Hazard Control #5  
Control of Wood dust  
from Shapers

All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use."

Never carry a tool by the cord or hose.

Hazard Control #10  
Control of Wood dust  
from Table Saws

Hazard Control #7  
Control of Wood  
dust from large  
diameter Disc  
Sanders

Never yank the cord or the hose to disconnect it from the receptacle.

Avoid accidental starting. Do not hold a finger on the switch button while carrying a plugged-in tool.

Hazard Control #8  
Control of Wood dust  
from Random Orbital  
Hand Sanders

Tools shall be maintained with care. They shall be sharp and clean for the best performance. Follow instructions in the user's manual for operating, lubricating and changing accessories.



Grinders, saws and similar equipment shall have appropriate guards in place.

All cord connected, electrically operated tools and equipment shall be grounded or approved double insulated.

Hands shall be dry before using any electrical equipment and the user shall not be standing in, or be too close to, water. (Use portable GFCI where necessary).

## **Powder Actuated Tools**

A Powder Actuated Tool (P.A.T.) operates like a loaded gun and shall be treated with the same respect and precautions. They shall only be operated by specially trained employees and only according to the manufacturer's directions.

### Cartridge Tools

P.A.T. and cartridges shall be stored in a safe, locked container and/or area when not in use.

These tools shall not be used in explosive or flammable atmospheres.

The tool shall be inspected prior to each use.

A P.A.T., loaded or unloaded, shall never be pointed at anyone, including the employee using it.

Appropriate eye protection shall be worn when using any P.A.T.

The tool shall not be loaded unless it is to be used immediately. A loaded tool and/or its cartridges shall not be left unattended.

Fasteners shall not be driven into very hard or brittle materials that might chip or splatter.

Proper use of PPE is required.

## **Hand Tools**

Always use the proper tool for the job. Inspect tools for flaws, correct sizes, and cutting edges, etc., before using. If tools are found to be defective, return them for replacements.

Proper tools shall be used for the purpose they were designed.

Keep hand tools clean and in proper working order at all times.

Tools with mushroomed heads or hammers with split or loose handles shall not be used until repaired.

### OSHA 3080 Hand & Power Tools

Files shall be used only when equipped with handles.

Only spark-proof tools shall be used around explosives or flammable/combustible material.

Sharp and pointed tools shall be carried in sheaths.

Keep hands out of the path of sharp tools. When using knives or chisels, cut away from, instead of toward the body.

Do not leave tools laying where others may slip or trip over them.

Remove all tools before starting/testing equipment with moving parts.

When using air power equipment, always shut off air at manifold and bleed air hose before disconnecting machine, hand tools or air hose.

All portable air drills, air hammers, etc., shall be equipped with a handgrip switch, which will shut off the supply of air when the grip is released.

All hand tools will have release type actuating devices.

## **Compressors, Compressed Air and Pneumatic Tools**

Compressors shall be equipped with pressure relief valves and pressure gauges.

Air intakes shall be located so that only clean air enters the compressor.

Never direct compressed air toward a person.

Compressed air used & designed for cleaning purposes shall be reduced to 30 psi.

Signs shall be posted warning of the automatic starting features of any air compressor.

Compressors shall be drained periodically, as recommended by the manufacturer. Pneumatic tools shall be used at the manufacturer's listed pressure. Tool retainers shall be used.

Compressed air shall not be used to blow dust out of hair, off skin or to clean clothes while being worn, etc.

## **Handling Materials**

All personnel engaged in handling materials shall be instructed in the proper method of lifting heavy objects. Employees are required to follow all safe work practices involved with lifting and material handling.

If the load is too heavy, get help. **DO NOT** strain.

When working with another person and carrying loads such as pipe, etc., let your partner know before dropping an end or doing anything which might create an accident.

Wear proper Personal Protective Equipment, i.e. gloves, when moving objects to avoid nicks and scratches.

Proper lifting involves: using the large muscles of your legs rather than the small muscles of your back. Always, take a firm grip, secure a good footing, place the feet at a comfortable distance apart, keep the load close to your body, keep your back straight, bend your knees and lift with your legs. Always plan the lift and placement of the load.

Fingers and toes shall be kept in the clear before setting down any materials or equipment.

Materials shall be stored or placed only in authorized areas. Air handler rooms, mechanical rooms and electrical rooms are not to be used for storage according to NFPA regulations.

Defective or broken strapping on materials shall be removed, repaired, or replaced before handling.

Materials shall not be thrown from elevated places to the floor or ground. Suitable lowering equipment should always be used for this purpose.

Lifting and lowering operations being performed by several persons shall be done on signal from one person chosen to be the group coordinator and only after everyone's hands and feet are in the clear.

Wheelbarrows, hand trucks and other similar devices shall not be over loaded or unbalanced and shall be in safe operating condition. All stacked materials, cargo, etc. shall be examined for sharp edges, protruding points, signs of damage, or other factors likely to cause injury to persons handling these objects. These defects should be corrected before proceeding.

Trailers, carts and trucks shall be secured from movement during loading and unloading.

## **Slings**

No individual is permitted to ride on hooks or slings.

Safe Rigging

Before using a sling, all its fastenings and attachments shall be inspected for damage or defects by a competent person designated by the department. Damaged or defective slings will be removed immediately.

No sling will be used with loads in excess of its rated capacity. The sling should be marked or tagged indicating its rated capacity.

Double slings should be used on any horizontal load over 12 feet long if the load includes two or more pieces of material.

Chain slings shall be inspected for sharp corners, cracks in the links, link binding and elongation of links. If any defect is noticed, discard the chain sling.

Rope slings will be discarded if there is evidence of broken or rotten fiber or deformation.

Shackles and eyehooks will be discarded if during an inspection for deformities, there is evidence of twisting and signs of over straining.

Wire rope clips and thimbles will be placed in accordance with the following:

- (a) Thimbles will be used in eye splices to reduce wear on wire rope.
- (b) U bolt wire rope clips will be placed apart to give adequate holding power and the u of the bolt pressing against the dead end (never saddle a dead horse).

## **Forklifts**

Only authorized and trained personnel may operate a powered industrial truck (forklift).

**Seat belts shall be worn on all forklifts where rollover protection is provided.**

Read and/or understand the information in the forklift manufacturer's manual.

Forklifts shall not be driven up to anyone standing in front of a fixed object.

Under all travel conditions the forklift shall be operated at a safe speed that will allow it to be brought to a stop in a safe manner. Never exceed 3mph in a closed-in area or 6mph outside.

No one is allowed to stand or pass under the elevated portion of the forklift, whether it is loaded or not.

Forklifts shall not be used for opening or shutting freight doors.

A safe distance shall be maintained from the edge of ramps and platforms while on any elevated dock.

Powered Lift  
Trucks

There shall be sufficient headroom under overhead installations, lights, pipes and sprinkler systems for a forklift to operate safely.

Horseplay is prohibited.

Only stable and safely arranged loads shall be handled.

Only loads within the rated capacity of the forklift shall be handled.

Powered Lift  
Truck  
Evaluation

If at any time a powered industrial truck is found to be in need of repair, defective or in any way unsafe, it shall be taken out of service.

The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the truck from rolling when boarding with forklift trucks.

A powered industrial truck is considered to be unattended when the driver is dismounted; over 25 feet from the vehicle, or can not see the vehicle from where he/she is standing. Therefore, when leaving the forklift, the operator will lower the fork of his truck to the ground, set the parking brake, turn off the engine and take the key with him/her.

No modifications shall be made to the forklift without the expressed written permission from the manufacturer.

Do not turn the forklift on any hill, ramp or incline. Never park a forklift on an incline.

When ascending or descending grades in excess of 10%, loaded trucks shall be driven with the load positioned toward the upgrade.

Forklifts shall be equipped with an audible warning device. Horns should work and a backup warning device should be operational. All instruction plates and limit signs shall be legible. Accelerator, brake and clutch pads will be maintained, serviceable and replaced if missing.

## **Overhead Hoists and Cranes**

In general, never operate a crane or hoist within 10 feet of overhead electric lines.

Never load a hoist or crane beyond the rated load (except during testing and in accordance with applicable regulations).

The rated load must be visible.

The hoist controls must be plainly marked indicating the direction of travel.

Load hoist drum capacity should be adequate to handle rope of the recommended size and moving for crane service throughout the range of boom lengths, operating radii and vertical lifts stipulated.

No load will be carried over personnel.

An inspection sheet showing the date of inspection and who inspected the crane must be visibly posted. (Note: There are requirements for frequent and periodic inspections. See the appropriate regulation.)

Overhead cranes with a power traveling mechanism will be equipped with a gong or other effective warning signal.

Make sure that stops, bumpers, rail sweeps and guards are inspected and serviceable as required by the regulations.

Cranes, Derricks,  
Hoists, Elevators &  
conveyors

## Construction Safety

Construction  
Fatality E-Tool

It is important that the reader understand what construction is defined as. Construction by definition under OSHA is the work for construction, alteration, and/or repair, including painting and decorating. Construction safety is covered under 29 CFR 1926. Some standards are identical to the General Industry Standards of 29 CFR 1910, e.g. Access to employee exposure and medical records and Hazard Communication.

Electrical shock  
incidents in  
construction

It must be remembered that when repair (including painting) and alterations are being performed on equipment the individual employee at a site may be required to comply not only with the General Industry Standards but also with the Construction Standards.

## Excavations

Excavation and Trenching presents a serious Risk to employees that work in and around these areas. Besides cave-ins (number one), flooding, falls, struck by, caught in between, and asphyxiation are some of the serious hazards that could confront an employee. Specific means of evaluating and preparing an excavation or trench for entry must be adhered to. Some of the tasks are:

Excavation Safety

- Surface encumbrances will be removed or supported if they could create a hazard to the employee(s)
- Underground utilities must be located also overhead power lines identified
- Access and safe egress established for excavations or trenches and lateral travel that is restricted to not more than 25 feet when 4 feet or more in depth
- Employees must be visible to vehicular traffic
- Employees must be protected from falling objects
- Employees must be protected from working where water is accumulating
- Employees must be protected from loose soil and rock
- Adequate barriers must be used
- Fall protection available where applicable
- Stability of adjacent structures ensured
- Testing of Hazardous atmospheres
- Emergency rescue equipment readily available, reliable and in good condition
- Operators of heavy equipment must have clear and direct view of the edge of the excavation or trench
- Competent person or persons on site

Excavation Slides

## Confined Space Entry

OSHA 29 CFR Part 1910.146 provides guidelines for the practice and performance of entry procedures for **Permit-required confined spaces**. There is a distinction between a non-permit required confined space and a permit-required confined space.

First, the definition of a confined space is one which has limited access or egress, is large enough and so configured that an employee can bodily enter and perform the assigned work and is not normally used for employee occupancy.

Confined Space

A permit-required confined space is a confined space that contains or has the potential to contain a hazardous atmosphere, an engulfing hazard or a configuration such that an entrant can get trapped or asphyxiated.

A non-permit required confined space does not contain or have the potential to contain any hazard capable of causing serious harm or death.

A hazardous atmosphere is defined as one that contains one or more of the following:

- (a) Oxygen deficiency or excess where the atmosphere contains less than 19.5% oxygen or more than 23.5%.
- (b) Combustible gases or vapors in excess of 10% of the lower explosive limit (LEL) for those gases or vapors.
- (c) Toxic gases or vapors present in a quantity that exceeds the threshold limit value (TLV).

The standard requires a written program, employee training, rescue plans, record keeping, etc. if applicable. Refer to your Department Confined Space Entry Program for specific procedures.

The standard also requires that there will be an initial written evaluation of the workplaces to determine and identify permit required confined spaces and the procedures that will be used to inform employees (e.g., through signs) and an effective means to prevent unauthorized entry.

The following general procedure will be used at a minimum when entering a confined space (permit, non-permit):

- (a) Lockout/tagout procedures will be completed before testing and entering.
- (b) The confined space will be purged by steaming, washing, venting or otherwise be cleaned unless oxygen, explosive and gas indications show that purging is unnecessary. After purging the confined space, it shall be tested and if necessary re-purged and retested as often as necessary to ensure that conditions remain acceptable.
- (c) The area to be entered shall be tested for hazards prior to each entry and periodically during the time in the confined space, using an approved device. The tests will be made by the entry supervisor or his representative and only in the following order: the oxygen readings must be between 19.5 and 23.5, the combustible gas indicator must show less than 10% of the LEL and the contaminant must be below the PEL, or if the PEL has not been established then below the level that is immediately dangerous to life and health (IDLH). A record of each test shall be completed and turned into the supervisor each day. The record will indicate the time, date, location and name of person testing the confined space. Additionally, oxygen content, any gases present, and the serial number of the testing unit will be noted on the entry permit. (See [Exhibit F](#))

## **Welding, Cutting and Brazing**

In general welding, cutting and brazing is prohibited within 35' of combustible materials. Fire watches will be used if closer than 35' where possible fires may start due to sparks. Fire watches will remain for at least 30 minutes after the completion of welding, cutting and brazing to detect and extinguish possible smoldering fires (the welder may also be the fire watch in certain circumstances).

Only authorized and trained personnel shall operate welding equipment.

Fact Sheets 21  
Resistance Spot Welding

Arc Welding

Compressed gas cylinders shall be examined regularly for signs of defects, deep rusting or leakage.

Fact Sheets 24  
Fluxes

Only approved apparatus (torches, regulators, safety valves) shall be used.

All equipment shall be inspected prior to use; and defective equipment shall not be used.

Welders shall be certain approved fire fighting equipment is nearby before commencing welding operations.

Fact Sheets 25  
Metal Fume  
Fever

Fact Sheets 01  
Fumes & Gases

Metal workbenches or other metal surfaces shall be grounded during welding operations.

Fact Sheets 02  
Radiation

Welders must be properly protected by PPE (full sleeves, fire protective clothing and gloves, etc., no joggers).

Fact Sheets 04  
Chromium &  
Nickel

There shall be adequate ventilation where welding or cutting is performed.

Helmets or head shields, gloves, etc. shall be used during all welding or cutting operations.

All filters, lenses and plates shall meet ANSI Z87.1 standards for transmission of radiant energy.

## **Handling of Compressed Gas Cylinders**

Follow all safety procedures for the specific cylinder being used.

Compressed gas cylinders shall not be stored in direct sunlight or any hot place.

Employees shall not use a cylinder of compressed gas without reducing the pressure through an approved regulator attached to the cylinder valve.

Oil and grease shall not be used as a lubricant on valves or attachments of oxygen cylinders. Keep oxygen cylinders and fittings away from oil and grease, and do not handle such cylinders or apparatus with oily hands, gloves, or clothing.

Oxygen shall not be used as a substitute for compressed air in pneumatic tools, in oil preheating burners, to start internal combustion engines, or to dust clothing.



Oxygen cylinders shall be kept in areas separate from flammable gases, oils & combustibles or no closer than 20 feet.

Cylinders shall be kept in racks or stands, set in an upright position, and chained or otherwise secured, to prevent their being knocked over.

The valve protection cap shall be kept in place whenever cylinders are not in use.

Open valves slowly and with the proper tools.

Cylinders shall never be used for other than their designated kind of gas.

Do not tamper with safety devices in valves or cylinders.

Handling of cylinders by cranes shall be done only when the proper racks are used. Rope or wire slings are prohibited.

It is prohibited to use cylinders as rollers or supports.

Never lift a cylinder by its valve-protection cap.

Cylinders shall be stored at a minimum of 25 feet from any source of heat, such as radiators, furnaces, or flammable substances.

Store empty and full cylinders separately, with empty cylinders identified by a tag or sign.

All cylinders shall be hydrostatically tested at least once every five years and the test date stamped on the cylinder. Cylinders shall never be dropped or treated roughly.

Inspect hose lines and cylinders frequently for leaks and report any leaks immediately.

Prior to removing a regulator from the cylinder, close the valve and release the gas from the regulator.

## **Ventilation**

Airborne contaminants in workplaces can be controlled by either of two basic mechanical ventilation methods: (1) General Ventilation (sometimes referred to as dilution), (2) Local Exhaust Ventilation (the classic method of control).

General ventilation systems supply and exhaust large volumes of air from workspaces. They are used to control humidity and temperature and to dilute airborne contaminants below hazardous levels. General ventilation usually is not as effective as local exhaust ventilation in controlling hazardous levels of airborne contaminants. However, in a lot of cases general ventilation is suitable. The following are advantages and disadvantages of general ventilation:

Advantages:

1. Low initial installation cost.
2. Ventilates many processes at the same time.
3. Easy maintenance.
4. Removes widely dispersed heat and humidity.
5. Appropriate for several small sources generating uniform volumes of airborne contaminants.

Disadvantages:

1. Adequate for low—toxicity contaminants.
2. Requires more make-up air.
3. Is not effective in controlling airborne dusts.
4. Works if the contaminant is generated at a uniform rate.

Local Exhaust Ventilation captures or contains contaminants at their source before they escape into the work environment. Local Exhaust removes air contaminants rather than dilutes. The following are some advantages and disadvantages of Local Exhaust:

Advantages:

1. System's effectiveness not reduced by employees working nearby.
2. Improves housekeeping.
3. Requires relatively low volumes of air.
4. Prevents escape of air contaminants into the work environment if properly designed and maintained.

Disadvantages:

1. High initial costs.
2. Requires detailed maintenance and operational evaluations.
3. Does not readily adapt to transient operations.

## **Bloodborne Pathogens Standard**

OSHA 29 CFR Part 1910.1030--Occupational Exposure to Bloodborne Pathogens Standard requires employers to determine who has occupational exposure and to establish methods to reduce workplace exposure to bloodborne pathogens.

To comply with the standard each department with this exposure must develop and maintain an Exposure Control Plan. The information in the Exposure Control Plan will help to ensure limited occupational exposure to blood and other potentially infectious materials.

The employer must make the Hepatitis B vaccination series available, at no cost to all employees who may have occupational exposure.

Employees shall:

Bloodborne

- (a) Observe Universal Precautions set forth by the CDC (Center of Disease Control) to prevent contact with blood or any other potentially infectious materials.
- (b) Utilize/wear any personal protective equipment required for any task outlined in the Exposure Control Plan.

2001 Revised BBP

- (c) Be familiar with warning labels, signs, and color-coding that may indicate bio-hazardous wastes.
- (d) Use established engineering methods to control exposures as instructed in the Exposure Control Plan.
- (e) Do not eat, drink, smoke, apply cosmetics or lip balm, handle contact lenses where blood or other potentially infectious materials are kept.
- (f) Do not recap or bend any needles or sharps.
- (g) Dispose of needles and sharps only in special containers.
- (h) Dispose of other contaminated materials in accordance with the standard and other applicable regulations.
- (i) Do not wash or decontaminate “disposable” gloves for reuse.
- (j) Clean and decontaminate all equipment and work surfaces that have been contaminated with blood or other potentially infectious materials.

Exposure Plan

Refer to your department’s Exposure Control Plan for additional information.

## **Infectious Diseases**

Hepatitis A

Hepatitis B

Hepatitis C

Hepatitis D

Hepatitis E

Tuberculosis  
Q&A

Some of the infectious diseases such as, hepatitis A are old diseases that have been known to humans and that continue to be a problem, not only in developing countries but also in the US. Meningitis, an inflammation of the fluid layers of membrane that surround the brain and spinal cord, results from viral or bacterial infection. Viral is less severe and resolves without special treatment (spread person to person orally). Bacterial is quite severe (spread in settings of close or prolonged contact with infected persons, person to person transmission through respiratory and throat secretions) and is common in the winter and early spring, treatment should be early and is with antibiotics. Eastern Encephalitis and West Nile Virus are mosquito-borne diseases that can be avoided by wearing long pants and sleeves when outdoors at dusk and dawn (mosquitoes are more active during these times), using mosquito repellent and removing trash from yards and gardens that could hold water. Tuberculosis and the other hepatitis B, C, D, and E are other concerns and are discussed in the attachments.

TB

Tuberculosis

Anthrax

Hepatitis  
Introduction

Meningitis

Viral  
Meningitis

Encephalitis  
Schematic

Building  
Protection

## **Hazard Communication**

Hazard Communication: OSHA 29 CFR Part 1910.1200 HAZARD COMMUNICATION (Right-To-Know) requires employers to have a written Hazard Communication Program and to communicate to employees information concerning hazardous materials the employees may be exposed to in the workplace during routine and non-routine work assignments. Each affected department must have a written program and provide information about hazardous materials to all employees who use or who could be exposed to such materials. The information must be maintained in a location identified to all employees, and must include:

- (a) How to read and understand chemical labeling from manufacturers and understand in-house labeling. Know the location of chemicals.
- (b) How to read and understand material safety data sheets.
- (c) The proper use of Personal Protective Equipment as necessary.
- (d) Employee training on safe use and handling.
- (e) Emergency response.

Refer to your departments written Hazard Communication Program for program specifics. The following are basic safe work practices to utilize when working with hazardous materials:

Hazard  
Communication

- (a) Know where the written hazard communication program is kept for employee access. Read it. The written program clearly outlines the purpose and intent of the hazard policy.
- (b) Know where the material safety data sheets (MSDS) are located. Read and use the MSDS for each product to understand the hazards and the safety precautions associated with the use and storage of the material.
- (c) Read warning labels to identify hazardous materials and the hazards associated with them.
- (d) Read all labels carefully to determine the recommended safety precautions.
- (e) Wear all required personal protective equipment when working with hazardous materials.
- (f) Use established engineering methods to control exposures as instructed. Engineering controls help reduce exposure to hazardous materials.
- (g) Follow all safe work practices when using or handling hazardous chemicals. If in doubt, ask supervisors for help.

Exhibit N

## **Lab Safety**

OSHA 29 CFR Part 1910.1450 requires employers to provide a safe workplace in various types of laboratories.

Laboratory means a facility where “laboratory use of hazardous chemicals” occurs. It is a workplace where relatively small chemicals are used in a non-production basis.

Where hazardous chemicals defined by the standard are used in the workplace, each department shall develop and carry out the provisions of a written Chemical Hygiene Plan that is:

- (a) Capable of protecting employees from health hazards associated with hazardous chemicals in that laboratory.
- (b) Capable of keeping exposures below the limits specified within the standard.

The Chemical Hygiene Plan shall be readily available to all employees and employee representatives upon request.

The Chemical Hygiene Plan shall include each of the following elements and shall indicate specific measures that the employer will take to ensure laboratory employee protection:

- (a) Standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals.
- (b) Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals including engineering controls, the use of personal protective equipment and hygiene practices; and particular attention shall be given to the selection of control measures for chemicals that are known to be extremely hazardous.
- (c) A requirement that fume hoods and other protective equipment are functioning properly and specific measures that shall be taken to ensure proper and adequate performance of such equipment.
- (d) Provisions for employee information and training specified in the standard.
- (e) The circumstances under which a particular laboratory operation, procedure or activity shall require prior approval from the employer or the employer’s designee before implementation.
- (f) Provisions for medical consultant and medical examinations in accordance with the standard.
- (g) Designation of personnel responsible for implementation of the Chemical Hygiene Plan including the assignment of a Chemical Hygiene Officer and, if appropriate, establishment of a Chemical Hygiene Committee.

The Chemical Hygiene Plan shall be reviewed and evaluated at least annually and updated as necessary.

## **Flammable and Combustible Liquids**

The storage of flammable and combustible liquids will be maintained free of combustibles (i.e., rags, trash, weeds, etc.).

All outside areas that store flammable and combustible liquids will be secured when unattended. The storage area shall be protected against tampering or trespassing.

In general, proper ventilation must be maintained at all times for storage of flammables and combustible liquids.

Flammable and combustible liquids will be stored in tanks or closed containers. The transfer of any liquid from one container to another will include grounding and bonding the containers.

All containers will be labeled properly and there should be no smoking, open flames or sparks around flammable and combustible liquids.

### Flammables

Inside storage cabinets will be grounded.

## **Roadway Operations**

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 responsible for the safety of both the public and the employees. The supervisor must spend time before, during and after the work to protect employees and the public from the hazards created by this work. The following procedures shall be followed:

- (a) 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.
- (b) If traffic is affected by the operation, proper signage shall be used to warn in advance of the work area. Traffic control signs in and around the affected area shall be correctly placed and maintained throughout the period when work is being performed. Follow D.O.T. regulations for Traffic Control.
- (c) Where barricades and signs are used overnight, supervisors shall examine the work area for proper placement at the end of the workday and at the beginning of the next day's work.
- (d) Lighted barricades shall be used whenever possible for overnight protection.
- (e) Where traffic must be periodically stopped or obstructed by workers or equipment in the traveled portion of a roadway, a flagman wearing a reflective vest shall be stationed appropriately and shall use a paddleboard.

- (f) Flagmen shall be used to slow and/or direct traffic where the approach to the work area does not provide adequate visibility to drivers and/or where traffic poses a threat to the safety of the public or County employees.
- (g) All plates used to cover holes in the street on a temporary basis shall be “spiked” in place.
- (h) In any case where streets are significantly obstructed or closed for any period of time, the Police Department, Fire Department, and any other affected department or organization shall be notified of the situation and told approximately how long the closure will be in effect.
- (i) Employees shall be equipped with approved flotation devices and lifelines as appropriate when working on elevated areas near or over bodies of water.
- (j) The location of utility systems shall be determined prior to starting work, and appropriate measure shall be taken to protect these systems as well as the public, employees, and equipment from these systems.
- (k) When pedestrian traffic is impeded by work operations; barricades, restrictive tape, rope or other restraints will be used to keep pedestrians from the work site.
- (l) If pedestrian traffic must be routed off sidewalks and into the street, protection shall be provided by cones, barricades and/or signs to guard pedestrians from vehicular traffic.
- (m) Holes in the sidewalk or roadway, which must be left open, shall have perimeter protection and be obviously identified.
- (n) All employees during roadway operations shall wear a reflective vest or other appropriate attire that enhances the employee’s visibility.
- (o) All employees during roadway operations should be alert to weather conditions and know how to protect themselves during adverse weather conditions. (See [Exhibit G](#) for more information.)

## **Heavy Equipment Operations**

Heavy equipment such as scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors and haulage vehicles will be equipped with safety belts, employees instructed in the proper use and the wearing of the safety belt enforced (unless equipment do not have roll over protective structures). Cab glass will be of safety glass and not obscured with no distortions or breaks so that the operator has clear view of their working area.

Audible backup alarms will be heard above the surrounding construction noise. No vehicle will be backed unless an observer signals it safe to do so or when the driver has a clear unobstructed view to the rear, no employees are on the ground in the vicinity and the back up alarm is functioning properly and can be overheard above the construction noise.

Heavy  
Equipment  
Dangers

Just like all vehicles the equipment will be inspected at the beginning of each shift for proper lighting and operation. The access or road will be inspected to ensure it is constructed and maintained properly to safely accommodate equipment and vehicles involved. Equipment will be properly loaded or will not be transported until such time as the load is stable and not over the weight limit.

The operator will inspect the site so that they can familiarize themselves with their work area. The supervisor will ensure the work area is secure and safe for operations and all employees working at the site are trained and aware of all safety functions and any hazards.

## **Outdoor/Landscaping Equipment**

When working with any landscape equipment, the following procedures shall be observed:

- (a) Only trained/qualified personnel shall operate landscape equipment.
- (b) Read the manufacturer's manual for each piece of equipment.
- (c) Follow the recommended operating procedures at all times.
- (d) Check and inspect machinery for defects.
- (e) Use proper fueling method.
- (f) Inspect equipment for proper safety features. Don't override safety devices.
- (g) Dress for safety and wear all necessary personal protective equipment.
- (h) Always clear debris, perform maintenance, etc., with the machine off.
- (i) Keep alert for adverse weather conditions and know how to protect yourself in case conditions worsen. (See [Exhibit G](#) for more information.)

Lightning

### Fueling/Refueling procedures:

- (a) Do not smoke.
- (b) Always fill on a level surface.
- (c) Do not fill while engine is running or hot. Let the engine cool.
- (d) Remove any dirt and debris from the surface of the equipment to prevent debris from entering fuel tank.
- (e) Do not overfill the tank.
- (f) Wipe off any spilled fuel after filling.
- (g) Keep fuel in an approved safety can.
- (h) Mix two cycle fuel in the safety can, not the fuel tank.



Weed Cutter procedures:

- (a) Use the correct shield for the blade in use. For plastic/nylon line use plastic shield; for metal blades use metal shields.
- (b) Utilize the proper length of nylon cord.
- (c) Make sure the lock handle is in place.
- (d) Throttle must operate freely.
- (e) Know where debris goes and always operate the weed cutter so that the debris cannot harm people or property.
- (f) Use the safety harness. It helps to distribute the weight of the machine and to balance the machine. Use the proper PPE.

Hedge/Tree Trimmer procedures:

- (a) Start tool on a firm surface, not in mid-air (drop start).
- (b) Do not overreach when using the trimmer.
- (c) Watch for power lines before the tree is trimmed and while trimming (no closer than 10 feet).

Blower procedures:

- (a) Always make sure debris from the blower will not harm people or property.
- (b) Never point the blower at anyone, including you.
- (c) Always wear the proper Personal Protective Equipment.

Riding Mower procedures:

- (a) Make sure the deflector chute or back chute is clear.
- (b) Make sure the parking brake is in good operational order.
- (c) Check and clear the area so that it is free from pets, unauthorized people, and debris.
- (d) Use blade disengagement lever when not in a mowing situation.
- (e) When cutting on a slope, go vertically up and down the slope to avoid tipping over.
- (f) Passengers are not allowed on the mower at any time.
- (g) No County employee shall operate a motor vehicle while wearing a headset, headphone, or other listening device, other than a hearing aid or instrument for the improvement of defective human hearing.

(h) When dislodging anything caught in the blade or chute:

1. Turn off engine.
2. Take the key with you.
3. Disengage spark plug wire
4. Then remove debris.

(i) When transporting the mower:

1. Raise the carriage as high as possible.
2. Engage the parking brake.

Chain Saw procedures:

- (a) Plan the work to ensure that there is an obstacle-free work area.
- (b) In the case of felling, plan a safe escape from the falling tree.
- (c) Secure a good footing.
- (d) Grip the handle firmly. The thumbs and fingers should encircle the handle.
- (e) Chain saws shall be started up on the ground and not in the cuts.
- (f) When cutting, avoid reaching above shoulder height.
- (g) Never adjust the guide bar or saw chain when the engine is operating.
- (h) Never carry a chain saw with its engine running or idling. Cut the engine and carry the chain saw with the guide bar pointing to the rear with the muffler away from the body.
- (i) Be sure that the saw chain stops moving when the throttle control trigger is released. Make sure that the release actuating type device is working and DO NOT tape the switch in the open position.

Chipper (tree or branch) procedures:

- (a) Only one person will feed material into the chipper.
- (b) Never feed the offshoots or fingers into the machine always feed the stump or stalk end in first.
- (c) Release your grip on material as quickly and safely as possible.
- (d) An emergency disconnect or stop shall be readily accessible.

## **Jacks**

All jacks (lever and ratchet jacks, screw jacks, and hydraulic jacks) shall have a device that stops them from jacking up too high. Also, the manufacturer's load limit shall be permanently marked in a prominent place on the jack and shall not be exceeded.

A jack shall never be used to support a lifted load. Once the load has been lifted, it shall immediately be blocked up.

Proper maintenance of jacks is essential for safety. All jacks shall be inspected before each use and lubricated regularly.

Remove handles from jacks when not in operation.

## **Scuba Diving**

Any employee engaged in SCUBA (Self Contained Underwater Breathing Apparatus) operations shall have the appropriate certification(s) and experience necessary for that operation. There must be a program written and in place in accordance with 29 CFR 1910.401 Subpart T. Required SCUBA safety precautions include, but are not limited to, the following:

- (a) All divers shall have medical clearance and be otherwise physically fit to dive.
- (b) All diving equipment shall be checked and be mechanically safe prior to commencing each dive.
- (c) There shall be at least two divers in the water during diving operations.
- (d) A diver's flag shall be displayed conspicuously to indicate that diving operations are in progress.
- (e) All divers shall wear buoyancy compensators while SCUBA diving.
- (f) Each diver shall keep a "diver's log" to record diving activities such as depth, water conditions, type of work done, equipment used, decompression stops, dive times, etc.
- (g) All air tanks shall be visually inspected immediately before each dive and otherwise visually inspected once a year and hydrostatically tested every five years.
- (h) Standby air tanks shall always be available.
- (i) If entrapment underwater is possible, appropriate rescue arrangements shall be in place.

## **Boat Safety**

Boating, like driving, requires that you follow certain regulations, laws and some basic safety rules. Operator awareness and preparedness is a high priority when getting behind the wheel of a boat. Just as ignorance, inattention and indifference or carelessness can cause an accident when driving a motor vehicle, boating has the same dangers.

Some of the hazardous conditions that shall be avoided are:

- (a) Overloading.
- (b) Fuel leakage.
- (c) Fuel accumulation in the boat other than the fuel tanks.
- (d) Excessive leakage or accumulation of water in the bilge.
- (e) Excessive speeds.
- (f) Too few or no personal flotation devices (PFD).
- (g) Improper wearing of PFD.
- (h) No fire extinguisher.
- (i) Operating under the influence of alcohol, drugs or prescribed medicine.
- (j) Riding on the bow, gunwale, transom or any obviously dangerous positions.
- (k) Interfering with navigation.
- (l) Polluting the waters.

Boating Safety

One of the practices that shall be performed is the use of a checklist. The following are some checks that will be accomplished:

- (a) Use Coast Guard approved PFD, Type II or Type III that are in good condition.
- (b) Ensure that you have a properly working and changed fire extinguisher.
- (c) Paddles or oars.
- (d) Visual distress signaling device.
- (e) Anchor and anchor line in good condition.
- (f) Tool kit, spare parts and flashlight.

Personal Flotation  
Devices

- (g) Appropriate foot wear.
- (h) Full fuel tanks. Tank and lines checked for leaks.
- (i) Lights and horn working.
- (j) Motor and propeller in good condition.
- (k) Overview of emergency procedures.
- (l) Weather and water conditions suitable.
- (m) Radio working properly and gear and supplies properly stowed and secure.
- (n) Operation or float plan filed with a contact person.

## **Heat Stress**

Everyone is a potential victim of heat stress either on or off the job. Heat can cause considerable stress on both the mind and the body and can affect health and safety.

There are three basic types of heat stress:

- (a) Heat cramps—Painful muscle spasms, often with heavy sweating.
- (b) Heat exhaustion—More serious than heat cramps with a variety of symptoms such as weakness, nausea and heat cramps. Results when the body loses too much water.
- (c) Heat stroke—The most serious type of heat stress in which the body's temperature regulation system just breaks down and can result in unconsciousness and death. Emergency medical intervention is mandatory (911) or (9-911) from county phones.

Heat  
Exhaustion

The following measure should be followed to help to prevent heat stress:

- (a) Drink plenty of water (at least one serving every half hour).
- (b) Take scheduled breaks in a cool area.
- (c) Avoid strenuous activity during the hottest part of the day.
- (d) Wear light-colored, loose fitting clothes.

Exhibit K

## **Back Safety**

Efforts to ensure employee safety shall give priority to the ergonomics principle that the employer shall establish all reasonable engineering controls and work practices to provide for employee safety.

### **Risk Assessment**

All employees who could be reasonably anticipated to sustain back injury as the result of their job duties shall be identified by the department as follows:

- (a) Employee job classification.
- (b) Tasks/procedures with risk potential for each job classification.

Activities that pose a risk to back safety include, but are not limited to:

- (a) Repetitive lifting.
- (b) Repetitive motion involving the back.
- (c) Any lifting over 30 pounds.

### **Engineering Controls**

- (a) Wherever possible, the department shall provide a physical work environment that is conducive to optimum back safety. Examples of this could include the proper height and position of shelves and work tables; re-positioning of equipment or furniture; etc.
- (b) As reasonably required, the department shall provide equipment appropriate for the job tasks that involve the potential risk to back safety. Such equipment could include forklifts, other mechanical lifting devices, hand trucks, sling devices, and automated machines that perform repetitive motion.

### **Work Practice Controls**

- (a) Where applicable, all procedures that present a risk to employee back safety should include clear warnings about the risk as well as requirements detailing the best way(s) to safely perform the procedure.
- (b) Where specific procedures are not used, the department shall instruct all supervisory personnel that they are required to have their employees utilized appropriate techniques, equipment, etc. to ensure employee back safety.

## Personal Protective Equipment

(a) Where occupational risk remains after engineering controls and work practice controls have been implemented or attempted, personal protective equipment may be used, when necessary.

(b) Back belts

1. The department may offer back belts to at-risk employees.
2. The department shall certify that all employees using back belts have been properly trained in the safe use of the belt, including correctly securing the belt; using the secured belt for only those work activities that require it; and assuring that the belt (especially the straps) does not present a hazard when worn near powered machinery that could entangle the belt.
3. Before issuing support belts and/or assigning employees to tasks that could put employees at risk for back injury, the department shall identify those employees who could be further at risk because of such conditions as circulatory problems, high blood pressure, previous back problems, obesity, etc. These employees shall receive a medical evaluation regarding their work activities and the use of the support belts for their work activities.

Lifting

## Training

(a) The department shall provide mandatory training in back safety for all employees with potential occupational risk to back injury. (The risk assessment will identify which job classifications are affected.)

(b) This training shall take place before an employee performs the risk task(s) and shall be updated at least annually.

## Record Keeping

(a) The department shall maintain the following records:

1. An updated version of the Back Safety Program.
2. The risk assessment for all job classifications.

(b) Medical records shall be kept confidential.

(c) Medical records shall be made available to employees and to their representatives (with written consent) and to other authorized personnel as required.

(d) Training records stating the employees trained and, at minimum, an outline of the training topics.

## **Ergonomics**

Ergonomics is the study of Human work. It identifies the physical and mental capabilities and limitations of a worker as they interact with tools, equipment, their workstation and their working environment.

Ergonomic principles should be practiced in order to minimize the risk of developing any work related Cumulative Trauma Disorders (CTD's). CTD's can occur in any working environment. They are the result of repetitive movements and unnatural positions of the body. The body should maintain a natural or neutral position at all times.

An evaluation of the work area or work methods can be conducted and should:

- (a) Identify tasks that require the body to move or stay stationary in unnatural positions and those that require repetitive motions.
- (b) Analyze the tasks and determine if modifications can be made.
- (c) If possible, modify the way the tasks are performed.

Modifications of the workstation or work practices are made to relieve the body of strain and stress. Costly and extensive modifications may not always be necessary.

Tasks that are repetitious or a strain on the body can be modified by using the following:

(a) **Job Enlargement**

Avoid performing the same task throughout the day. Vary tasks that do not require the use of the same muscles.

(b) **Breaks**

Breaks are essential for relieving stress and fatigue of the job.

They allow both physical and mental recovery.

Micro-breaks are essential for those who perform repetitive motion tasks. These breaks are performed by breaking for approximately 15 to 30 seconds for every 30 minutes of continuous work.

(c) **Workload Reduction**

Overworked individuals can result in low productivity, inferior quality, and employee dissatisfaction.

Reducing the workload, changing the distribution of the work or including more employees on a project can enhance the quality of work.



- (d) Each employee should be aware of their physical condition and the effects it can have on their work performance.

Poor physical condition can prohibit quality work and allow the individual to become more susceptible to work related injuries.

Exercises are important throughout the day for every individual. Those who work in static postures need to exercise and stretch unused muscles regularly.

### Sitting

Sit straight up in the chair firmly resting against the backrest. Feet should be flat on the floor with knees and hips at the same level.

When working with the hands whether at a desk or on a worktable, the work surface should be slightly above the waist level to allow arms and shoulders to relax. Arms should form a 90-degree angle at the elbows.

If sedentary work is required, a rolled towel or lumbar roll should be used on chairs that do not support the lower back.

### Standing

Stand with legs approximately shoulder width apart. If tasks require standing for long periods of time, place one foot on a box, stool or footrest and alternate often. This will reduce back pain and support the lower back. Do not stand with legs locked. Bend knees slightly to improve blood circulation.

### Bending

When bending, the back should always be straight and in line with the neck. Knees should be slightly bent. Bend over at the hips. Tighten abdominal muscles to protect the lower back.

### Turning

Avoid twisting! Twisting should not be done at any time. The move should be a turn where the feet are lifted as the turn is made to each side. Hips and feet should move with the upper body at all times.

### Driving

Drivers should adjust the seat so legs are comfortable and thighs are level with the hips. Avoid stretching to reach pedal and steering wheel. Refrain from jumping out of large trucks. Use steps available. Position body correctly to avoid twisting when entering and exiting vehicles.

## **Video Display Terminals (VDT) and Work Station Layout**

Many employees use computers. Whatever the frequency of use of the computer is, there are some basic health and safety procedures to help prevent injuries. No matter how comfortable your workstation is, sitting still for long periods of time can be tiring and stressful. Alternate different tasks throughout the workday to vary work rhythms. This will help to keep strain and tension from building up.

### **How to Adjust Your Workstation:**

Some simple adjustments can usually improve workstations.

#### **(a) Keyboard Height**

1. If the desktop is the right height, approximately 24 to 28 inches, the upper and lower arms form a comfortable angle of approximately 90 degrees. Upper arms will then hang comfortably at one's sides, taking the strain off the upper back and shoulders.
2. If the keyboard is not adjustable, and it is too high for comfort, try placing pads under the wrists to elevate them to a more comfortable position.
3. Keyboards are rarely too low, but a low keyboard can be adjusted. Try a pad of paper or flat piece of wood under the keyboard.

#### **(b) Screen Face Angle and Screen Height**

1. Adjust the angle for comfort and to reduce glare of the screen. The screen and document holder should be at or just below your eye level and about eighteen inches from your face.
2. Adjust the screen controls for brightness, contrast, etc for the best viewing possible.

#### **(c) Chair**

1. The height of the seat and the angle of the seat back should be adjustable. If possible, both the seat and the back should also be cushioned and upholstered with textured fabric that "breathes."
2. Thighs should be nearly parallel with the floor.
3. Feet should rest flat on the floor or footrest.
4. The front of the chair seat should have a "waterfall" design that slopes downward to provide more even distribution of body weight.

5. The chair back should be adjusted to provide lumbar support to your lower back. Such support can also be enhanced by use of a rolled towel or pillow.
6. Padded armrests will help reduce stress on your shoulders and neck. And for ease of movement, the chair should swivel and be mounted on five casters.

(d) Glare

1. Sometimes glare and poor lighting make it difficult to read the VDT screen or the copy. To control glare:
  - (a) Adjust the screen's brightness and contrast controls to compensate for reflections on the screen.
  - (b) Close the blinds or pull the shades to block daylight coming through a window behind the terminal.
  - (c) Try to eliminate or adjust any intense light source shining directly into the eyes.
  - (d) Adjust the angle of the screen to minimize the glare.
  - (e) Use a glare screen over the VDT screen.
  - (f) Use a task light for a dimly lit work area.

## **Office Safety**

The following guidelines shall be observed by all Orange County employees.

- (a) Good housekeeping rules shall be observed and practiced in every office.
- (b) If you observe spilled liquids or objects on the floor, arrange for cleanup or pickup immediately to prevent a slip or fall.
- (c) All defective equipment or furniture should be immediately reported to a supervisor.
- (d) An open desk drawer or cabinet is a hazard. Keep drawers and cabinet doors closed.
- (e) Chairs should be used for sitting only. Do not lean back to the extent that the front legs are lifted off the floor. Do not climb up on chairs or use chairs as stepladders.
- (f) Carry pencils, scissors, and other sharp objects with the point down to prevent stabbing accidents to yourself and others.

- (g) In a four-drawer filing cabinet, open only one drawer at a time. When possible, load heavy items in the lower drawers. Always fill a cabinet from the lower drawers to the upper drawers to maintain the lowest possible center of gravity in the cabinet.
- (h) Where the possibility exists that a cabinet may tip when opened, secure the cabinet to the floor or adjacent cabinets.
- (i) Do not place two-drawer cabinets on top of each other to make a four-drawer cabinet. The cabinets should be replaced with one four-drawer unit or bolted together.
- (j) Electrical, telephone, and other cords, furniture, and equipment shall be located out of the passageways and walkways where they could create a tripping hazard or impair egress.
- (k) Extension cords are for temporary power. Use only approved strip type extension cords. If power is needed for a longer period of time, install an electrical outlet in the area.
- (l) Check that electric wires and plugs are in good condition, with no frayed or worn areas.
- (m) Electrical equipment with a ground prong requires a three-prong receptacle. Do not remove the ground prong on three-prong plugs.
- (n) Check that floor surfaces are in good condition. Report slippery areas, weak sub-flooring, torn carpets, or other damaged floor surfaces.
- (o) Keep paper cutter handle in closed/locked position when not in use and use extreme caution when using it.
- (p) Keep chemical containers such as, toners, white out, etc., closed when not in use.

## **Violence in the Workplace**

Studies suggest that during the course of a year, one of every four employees will be attacked, threatened or harassed at work. It is important to reduce the frequency, the seriousness and the impact of violence in the workplace.

### **Definitions**

#### Workplace Violence Prevention

**Assaulted employee**—Any employee who is reasonably put in fear of being imminently struck by another, either by a menacing gesture, sudden move alone, or accompanied by a threat.

**Battered employee**—Any employee who experiences actual physical contact from another (whether or not a physical injury occurred).

## **Types of Violence**

We often see homicide as the common form of violence in the workplace. However, violence also includes:

- Hitting
- Shoving
- Pushing
- Kicking
- Sexual assaulting
- Sabotaging equipment & property

Psychological and verbal forms of violence often signal more serious violence to come. They can be expressed in the following forms:

- Threats
- Abuse (physical & verbal)
- Intimidation
- Harassment
- Verbal outburst

Conditions often associated with workplace violence

### **I. Internal Conditions**

Employees may become victims because of current and former employees who are angry and frustrated, and then resort to workplace violence to “finally solve this problem.”

The conditions causing anger and frustration to grow are many:

- Economic and home financial factors
- Job layoffs, downsizing
- Rigid management style
- Perceived insensitive and difficult terminations
- Pressure to increase production
- Denied promotions or workers' compensation benefits
- Psychological instability
- Lack of individual responsibility
- Obsessive love affair issues brought into the workplace
- Domestic disputes brought into the workplace
- Chemical dependency
- Depression

## II. External Conditions

The actual workplace, work shift, the type of job responsibility, and exposure to public contact can place the employee at a higher risk of crime and violence.

Some external conditions are:

- Works alone (isolated) or in small groups
- Constantly exchanges money with the public
- Works during late night or early shift
- Responsible for valuable property
- Works in a high crime area
- Lack of or insufficient security measures or guidelines at the job site
- Sabotage
- Terrorism
- Customer violence, which is caused when:
  - i. They aren't satisfied with the service or product
  - ii. They have to wait
  - iii. Mistakes are made
  - iv. Promises aren't kept

### Warning Signs

Because a threat is often the clearest sign that violence may follow, we need to define the three basic types of threats:

1. Direct Threats—"I'll get even with Steve."
2. Veiled Threats—"This community will have to be evacuated if someone leaves the water plant's chlorine valves open."
3. Conditional Threats—"If they deny my workers' compensation case, they will hear about me real soon." "I'm not letting go easy."

Other warning signs could be

- Attendance problems
- Decreased productivity
- Inconsistent work patterns
- Safety problems
- Poor health & hygiene
- Unusual/changed behavior
- Fascination with weapons
- Evidence of serious stress
- Depression

You never know when a threat will be followed by violence. Treat all threats seriously. Don't ignore a threat. Report the threat to your supervisor. **Document all threats or assaults.** (See [Exhibit H](#) Confidential Incident Report and Violence Incident Report Form.)

### **Violent or Unusual Behavior**

For us to prevent violence in the workplace it is important to recognize violent or unusual behaviors requiring further investigation.

The following are some examples of behavior that requires further investigation:

- Any act that is physically assaultive
- Behaviors indicating potential for violence (throwing objects, shaking fists, destroying property).
- Any substantial threat to harm another individual or endanger the safety of other employees.
- Any substantial threat to destroy property.
- Aberrant behavior that might signal emotional distress.

### **Why Isn't Violence Reported**

In many cases there are warning signs such as behavior or threats given by the person before committing the violent act. However, in many cases these signs are not reported because:

- They are taken for granted.
- Fear of reprisal.
- Low credibility in management's response.
- Reporting is not important, or perceived as not important to the organization.
- Employees do not understand the warning signs for possible future violence.
- Organization lacks a program and training about workplace violence.

### **What To Do**

When an employee is faced with a potentially violent person, the following steps are recommended:

- Observe—If there is a weapon, if they are intoxicated, hallucinating or using unusual speech, remove yourself from the situation as quickly as possible. Call the police and protect yourself.

Otherwise:

- Listen—Show that you are willing to help them. Listen to their problem. Assist them in getting help.
- Avoid defensiveness—Do not place responsibility back on the person, just listen and acknowledge their emotion.
- Acknowledge—Reassure the person that you understand the problem. Ask them how you can help.

-Speak slowly, softly and clearly—Slow down your speech, be calm. This sometimes helps the person slow down their speech and reduces their anxiety.

-Ask questions—Keep control. Ask the person questions and repeat their answers so they know you are listening.

-State consequences—If the person persists with an unusual behavior, step back, and let them cool down. If they continue, tell them that you will notify the supervisor.

-Miscellaneous—Know your route of escape. Stay out of reach, but within listening range. Keep sharp objects out of sight or in a drawer. If there is danger or you feel threatened in any way, leave and get help. Call the police if necessary.

### **What To Report**

Just give the facts to your supervisor and document in writing. Explain when and where the incident happened, names of witnesses and what was said. For example:

-Mark got really close to me, closed his fist and said; “Joe will find out that it’s a mistake to treat me like he did.”

-Charles walked up to the group by the smoking area, grabbed me by the shirt and pushed me against the soda machine. He asked me, “Why didn’t you punch out for me yesterday? The boss suspended me for two days!”

### **Threat Checklist:**

-What was the threat?

-Who was threatened?

-Who made the threat?

-When, where, and how was the threat made?

-To whom was the threat reported?

-Any previous incidents between the victim/observer and the person making the threat?

**Report threats, assaults and battery immediately to your supervisor or their designated representative and document the event.**