Safety Briefings

General Industry Topics

NCDOL
N.C. Department of Labor

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Commissioner of Labor

Occupational Safety and Health Division
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I hope that this safety briefings booklet will help lead job safety and health discussions that will raise awareness, reduce injuries and illness, and prevent fatalities.

This informational booklet is intended to provide a generic, non-exhaustive overview of particular standards-related topics. This publication does not itself alter or determine compliance responsibilities, which are set forth in standards themselves and the Occupational Safety and Health Act of North Carolina.

Moreover, because interpretations and enforcement policy may change over time, for additional guidance on occupational safety and health compliance requirements, the reader should consult current administrative interpretations and decisions by the Occupational Safety and Health Review Commission of North Carolina and the courts.

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Asbestos

Hazards: Exposure to asbestos has been shown to cause lung cancer, mesothelioma, and cancer of the stomach and colon. Smoking increases the health risk.

How Does Asbestos Exposure Occur?

Asbestos fibers are very small. If you inhale them, they go deep into your lungs and cause disease up to 40 years later. Asbestos products can release fibers into the air when they are friable, abraded, cut or disturbed. Asbestos products are called friable when you can crush them with finger and hand pressure alone. Exposure is most likely when renovating or demolishing older structures.

Common Sources:

Asbestos may be in roofing felt, roof patch material, vinyl, tile, linoleum backing, transite, asbestos cement pipe and sheet, pipe insulation, fireproofing, and spray-on decorative acoustical ceiling material. Most new products don't contain asbestos (but foreign materials may contain it).

Safe Practices:

- Assign a competent person to administer the company's exposure control plan.
- Send suspected materials for testing.
- Conduct daily or periodic air monitoring depending on the class of work performed.
- Train crews who work with asbestos.
- Have workers get regular medical exams.

Controls:

- Restrict access to the asbestos area.
- Post warning signs.
- Use HEPA filtered respirators (not just dust masks) and full body coverings.
- Wet down the asbestos to reduce dust.
- Use power tools with special exhaust filters.
- Material containing asbestos (e.g., waste, scrap and contaminated clothing that is removed from buildings) must be disposed of in leak-tight 6-mil thick plastic bags, plastic-lined cardboard containers or plastic-lined metal containers.

Bloodborne Pathogens/First Aid

Hazards: Delayed medical treatment; infection from bloodborne pathogens.

In work environments where employees are exposed to blood or other bodily fluids:

- Establish a written exposure control plan identifying at-risk workers.
- Implement engineering/work practice controls.
- In absence of medical professional or facility that is reasonably located, ensure trained first aid providers are available.
- Ensure first aid and CPR providers are certified by an accredited trainer.
- Ensure first aid supplies are available in a weatherproof container and checked weekly for replacement of expended items.
- Specify means to protect (providing PPE) and train employees.
- Offer hepatitis B vaccination and post-exposure follow-up.
- Ensure emergency numbers are available and communication systems are working.
- Provide an automatic external defibrillator (AED) at your worksite and train first responders on its use.

Compressed Gases

Hazards: Burns and poisoning.

Storage:

- Mark empty cylinders and close valves.
- Always keep gas cylinders secured properly and in a vertical position.
- Keep valve protection caps in place whenever cylinders are not in use.

Safe Practices:

- Do not use cylinders as rollers or supports.
- Keep all cylinders, cylinder valves, couplings, regulators, hoses and apparatuses free of oily or greasy substances.
- Unless secured on special trucks, regulators must be removed and valve-protection caps put in place before moving cylinders.
- Never crack a fuel gas cylinder valve near sources of ignition.
- Close valve and release gas from the regulator before a regulator is removed.
- Examine compressed gas cylinders regularly for signs of defects, deep rusting or leakage.
- Only use pressure-reducing regulators for the gas and pressures for which they are intended.
- Open cylinder valves slowly and carefully.
- When a cylinder wrench is needed on the valve, keep the wrench nearby to turn off the valve quickly if necessary.
- Use red to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose.
- Only qualified technicians should clean or repair a regulator.
- Do not tamper with the relief valve or remove it from a regulator.
- Read MSDSs and train employees about fuel gases.
- Never allow oxygen to contact oil, grease or other flammable substances.
- Never use oxygen as a substitute for compressed air.
- Never use oxygen to dust off clothing, in pneumatic tools or for ventilation.

Permit-required Confined Spaces

Hazards: Suffocation, poisoning, burns, entanglement.

OSHA uses the term "permit-required confined space" (permit space) to describe a confined space that has one or more of the following characteristics: contains or has the potential to contain a hazardous atmosphere; contains a material that has the potential to engulf an entrant; has walls that converge inward or floors that slope downward and taper into a smaller area that could trap or asphyxiate an entrant; or contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires or heat stress.

Safe Practices:

- Instruct all employees of the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment.
- Ensure confined spaces are emptied of any corrosive or hazardous substances or vapors, such as acids or flammables, before entry.
- Ensure all lines to the confined space that contain inert, toxic, flammable or corrosive materials are valved off and blanked or disconnected and separated before entry.
- Ensure all impellers, agitators or other moving parts inside confined spaces are locked out.
- Provide either natural or mechanical ventilation before confined space entry.
- Test the atmosphere for oxygen deficiency, explosive concentrations and toxic substances before entry.
- Test atmosphere frequently or continuously during the work.
- Check the confined space for possible industrial waste that could contain toxic properties.
- Check space for animal matter or decaying vegetation that may produce methane.

Permit-required Confined Spaces (continued)

- Provide approved respiratory equipment if the atmosphere inside the confined space cannot be made acceptable for breathing.
- Provide adequate illumination for the work to be performed in the confined space.
- Assign a safety standby person outside of the confined space who will be responsible to watch the work in progress, sound an alarm if necessary and render assistance.
- Ensure the standby employee is trained and equipped to handle an emergency.
- Ensure rescue equipment and personnel are available.
- Provide means of communication for the standby person to summon emergency help.
- Ensure all portable electrical equipment used is either grounded and insulated, or equipped with ground fault protection.
- Ensure hot work permits are provided for any hot work conducted in a confined space.
- Before gas welding or burning is started in a confined space, ensure hoses are checked for leaks, compressed gas bottles are forbidden inside of the space, torches are lighted outside of the space area, and the confined area is tested for an explosive atmosphere each time before a lighted torch is taken into the confined space.
- Ensure employees who will be using oxygen-consuming equipment (e.g., salamanders, torches and furnaces in a confined space) are provided with sufficient air to ensure combustion without reducing the oxygen concentration of the atmosphere below 19.5 percent by volume or creating a toxic atmosphere.
- Whenever combustion-type equipment is used, make provisions to exhaust gases to outside of the enclosure.
- Check for carbon monoxide if the space is below the ground or near areas where motor vehicles will be operating.

Electrical

Hazards: Burns, shock and electrocutions.

Inspections:

- Ensure all tools and equipment (both company and employee owned) are in good condition.
- Prohibit work on energized electrical circuits.
- Prohibit the use of frayed or worn electrical cords or cables.
- Ensure the minimum clear working space is at least 3 feet for electrical equipment of 150 volts or less.
- Ensure the width of working space in front of electrical equipment is the width of the equipment or 30 inches, whichever is greater.
- Check portable electric tools before use to ensure that the cord and plug are in good condition.
- Ensure broken or damaged tools and equipment are removed from service.
- Ensure that portable electrical tools and equipment are either grounded or of the double insulated type.
- Ensure employees are performing activities using temporary wiring, use a ground-fault circuit-interrupter (GFCI) with every power tool to protect against electrical shock hazards.
- Ensure that electrical equipment and cords used in wet or damp locations are approved for wet and damp locations.
- Ensure that listed, labeled or certified equipment is used in accordance with the instructions included in the listing, labeling or certification.
- Ensure that when a circuit breaker is removed from a circuit breaker panel, it is replaced with either a breaker or a blank.
- Ensure unused openings in electrical boxes are effectively closed.
- Prohibit bypassing any protective system or device designed to protect employees from contact with electrical current.
- Ensure that electrical cords are protected from physical damage.
- Ensure electrical equipment is used only as approved and listed.
- When employees are exposed to areas of **arc flash potential**, always perform a flash hazard analysis and acquire the appropriate flame resistant clothing.

Emergency Action Plans

Purpose: Ensure employees evacuate safely in the event of emergency.

Applicable when an emergency action plan is required by an OSHA standard. The plan must be kept in the workplace and be written when there are 10 or more employees.

Elements of an emergency action plan:

- Procedures for reporting fires and other emergencies
- Emergency evacuation procedures, type of evacuation and evacuation route assignments
- Procedures for staff remaining to operate critical plant operations before evacuating
- Procedures to account for all employees after evacuation
- Rescue and medical duties for employees who are supposed to perform the duties
- Names/job titles of every employee to contact for more information about the plan or an explanation of assigned job duties
- The employer shall establish an employee alarm system that is:
  - Heard above ambient noise or light levels
  - Distinctive or recognizable
  - Tested every two months
  - Unobstructed and readily available
- The employer shall establish procedures for sounding alarms in workplace
- Each affected employee must be trained:
  - Initially upon employment
  - Whenever duties change
  - Whenever the plan changes

Fire Prevention

Hazards: Burns and smoke inhalation.

Safe Practices:

- Ensure that fire extinguishers are provided near all welding, soldering and other sources of ignition.
- Ensure that fire extinguishers are available and readily accessible in case of an emergency.
- Ensure that portable fire extinguishers are periodically inspected and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA 10A.
- Ensure that flammable and combustible materials are not stored in stairways or exits.
- Ensure that adequate ventilation is provided in areas where paints, solvents or other flammable materials are being applied.
- Ensure that gasoline and other flammable liquids are stored in safety cans or in an approved flammable storage facility.
- Ensure that flammable liquid leaks or spills are cleaned up immediately.
- Prohibit smoking in the vicinity of operations that constitute a fire hazard, and conspicuously post “No Smoking or Open Flames” signs.
- Prohibit the use of solid fuel salamanders in buildings and on scaffolding.
- Ensure that space heaters are set horizontally level and used according to the manufacturer’s instructions.
- Ensure that an alarm system is established, so that employees and the local fire department can be alerted for an emergency.

Flammable and Combustible Materials

Hazards: Fire, explosion and burns.

Safe Practices:

- Ensure combustible debris, waste materials (oily rags, etc.) and waste solvents are stored in covered metal receptacles.
- Remove waste materials from the worksite promptly.
- Provide approved containers and tanks for the storage and handling of flammable and combustible liquids.
- Use safety cans for dispensing flammable or combustible liquids at a point of use.
- Make connections on drums and piping tight to prevent leaks.
- Ensure all flammable liquids are kept in closed containers when not in use.
- Bond and ground drums of flammable liquids to containers being filled.
- Ensure storage rooms have explosion-proof lights and mechanical or gravity ventilation.
- Where flammables or combustibles are used or stored, post “No Smoking or Open Flames” signs.
- Physically guard liquefied petroleum storage tanks to prevent damage from vehicles.
- To ensure support and stability, place firm separators between combustibles or flammables containers when stacked.
- Separate fuel gas cylinders and oxygen cylinders by distance and fire-resistant barriers while in storage.
- Do not block or obstruct fire extinguishers.
- Keep fire extinguishers serviced, maintained and tagged at intervals not to exceed one year.
- Clean up all spills promptly.
- Ensure storage tanks are adequately vented to prevent an excessive vacuum or pressure as a result of filling, emptying or atmosphere temperature changes.
- Ensure tanks are equipped with emergency venting.

Hazard Communication

Purpose: Ensure hazards of chemicals are conveyed to employers and employees.

Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and material safety data sheets (MSDSs) to convey the hazard information to their downstream customers.

Written Program: Employers must develop a written program that includes:

- Company chemical inventory
- MSDSs location
- How and where employees get information on new chemicals
- Who to ask questions about chemical safety
- How to perform nonroutine tasks safely

Employee Training: Ensure each employee is trained in the following:

- How to use hazardous chemicals safely.
- What safety equipment is required.
- Not to remove or deface labels on incoming containers of hazardous chemicals.
- Where MSDSs are maintained and how they should be used during emergency situations.
- Electronic access to MSDSs is acceptable as long as employer can ensure employees are competent to access the information and adequate back-up is provided in the event of a power failure.
- How to identify chemical hazards using warning label and MSDSs.
- How to identify any operation on the jobsite where hazardous chemicals are present.
- Post hazard warnings (physical and health), protective measures, equipment requirements or prohibited activity.
- All employers with hazardous chemicals in their workplaces must have labels and MSDSs for their exposed workers, and train them to handle the chemicals appropriately.
- A consumer product that is used in a workplace in such a way that the duration and frequency of use are the same as that of a consumer is not required to be included in an employer's hazard communication program.

Heat Illnesses

Symptoms: Headaches, dizziness, lightheadedness, weakness, mood changes (e.g., irritability or confusion), upset stomach, vomiting, decreased or dark-colored urine, fainting or passing out, and pale, clammy skin.

First Aid:

- Act immediately because heat exhaustion may advance quickly to heat stroke or death.
- Move the victim to a cool, shaded area to rest and stay with the person.
- If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise his or her legs 6 to 8 inches.
- If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.
- Heat stroke is a medical emergency.

Safe Practices:

- Do heaviest work during coolest part of day.
- Build up tolerance to the heat and the work activity over a two-week period.
- Work people in pairs.
- Drink plenty of cool water, about a cup every 15 minutes.
- Wear light, loose-fitting, breathable clothing.
- Take frequent short breaks in cool shaded areas to allow the body to cool down.
- Avoid eating large meals before hot work.
- Avoid alcoholic and caffeinated beverages.

Risk Factors:

- Certain medications increase sensitivity to heat so check with your pharmacist to see if any medicines you are taking affect you during hot work.
- A previous heat-induced illness.
- Personal protective equipment can add to physical stress.

Industrial Trucks (Forklifts)

Hazards: Rollover injuries and struck-by injuries.

Safe Practices:

- Only trained personnel are allowed to operate industrial trucks.
- Ensure substantial overhead protective equipment is provided on high lift rider equipment.
- Use of fall protection (harness, lanyard, etc.) while operating specialty lift equipment such as cherry pickers.
- Post and enforce lift truck operating rules.
- Ensure directional lighting (head lights) is provided on each industrial truck that operates in dark areas.
- Ensure each industrial truck has a functioning warning horn, whistle or other device that can be clearly heard above the normal noise in the area.
- Ensure the brakes on each industrial truck are capable of bringing the vehicle to a complete and safe stop when fully loaded.
- Ensure the truck's parking brake will prevent the vehicle from moving when unattended.
- Ensure that industrial trucks operating in hazardous areas (e.g., where flammable gases or vapors, combustible dust, or ignitable fibers may be present) are approved for such locations.
- If industrial trucks with internal combustion engines operate in buildings or enclosed areas, carefully check to ensure such operations do not cause harmful concentrations of dangerous gases or fumes.
- Use seatbelts.
- Do not remove passenger compartment guards or rollover protection devices.
- Do not allow riders on sides or forks.
- Do not alter the truck in any way without the authorization of the manufacturer.

Industrial Trucks (Forklifts)
continued

- When transferring LP-gas from the storage containers to the fuel container of industrial trucks:
  - (i) the vented gas from the gauge must not exceed the maximum flow provided from a No. 54 drill orifice;
  - (ii) the filling operation must be performed outdoors, not less than 10 feet from the nearest masonry-walled building or not less than 25 feet from the nearest nonmasonry-walled building or building opening;
  - (iii) the engine of the industrial truck must be shut off and the operator must get out of the truck during refueling; and
  - (iv) only trained and designated personnel may refill LP-gas containers.

Ladder Safety

Falls from portable ladders (step, straight, combination and extension) are one of the leading causes of occupational fatalities and injuries.

Hazards: Broken or missing parts, energized electrical lines or equipment, too short for work height, weight limit rating too low, not the correct equipment for job.

Loads: Self-supporting (foldout) and non-self-supporting (leaning) portable ladders must support four times the maximum intended load; extra-heavy-duty metal or plastic ladders must sustain 3.3 times the maximum intended load.

Angle: The base of a non-self-supporting commercially manufactured ladder should be one-quarter its length away from the wall or supporting structure; the base of a job-made wooden ladder should be one-eighth its length away from the wall.

Inspection: Check to ensure shoes and ladder are free of oil, grease, wet paint and other slipping hazards; warning labels are legible; spreader device can be locked in place; and area around the top and bottom of ladder is cleared of material.

Safe Practices and Use:

- Read and follow all labels/markings on the ladder.
- Look for overhead power lines before handling a ladder and avoid using a metal ladder near power lines or exposed energized electrical equipment.
- Always inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose.

Ladder Safety
continued

- Always maintain a three-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing. Keep your body near the middle of the step and always face the ladder while climbing.
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Ladders must be free of any slippery material on the rungs, steps or feet.
- Use a ladder only on a stable and level surface, unless it has been secured (top or bottom) to prevent displacement.
- Do not place a ladder on boxes, barrels or other unstable bases to obtain additional height.
- Do not move or shift a ladder while a person or equipment is on the ladder.
- An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support. Do not stand on the three top rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface.
- A ladder placed in any location where it can be displaced by other work activities must be secured to prevent displacement or a barricade must be erected to keep traffic away from the ladder.
- Store ladder so it will not warp, sag or be damaged; secure during transport.
- Be sure that all locks on an extension ladder are properly engaged.
- Do not exceed the maximum load rating of a ladder. Be aware of the ladder's load rating and of the weight it is supporting, including the weight of any tools or equipment.

Lockout/Tagout

Hazards: Amputations, fractures, electrocution and death.

What Is Lockout/Tagout? (LOTO): A way to make sure electricity or other energy is not turned on (or released) while someone is working on machinery. Turning off a power switch is not enough. You must de-energize (prevent equipment from starting or moving), lock it out, release stored energy (for instance, bleed air from a pneumatic hose), and test to make sure the energy is off.

Lockout/Tagout Procedures:

- Each piece of equipment or machinery should have its own LOTO procedures.
- Notify operators and supervisors that power is being disconnected or isolated.
- Review specific written procedures that explain the shutdown and restart process.
- Shut down by turning off the equipment (depress the stop button, open switch, close valve, etc.)
- Separate all energy sources using proper isolating devices (manual circuit breakers or disconnect switches).
- Equipment will likely have more than one type of energy that needs to be isolated; push buttons or selector switches cannot be the only way to de-energize.
- Each employee who can be exposed to hazardous energy must be part of the LOTO process.
- Control stored energy or residual energy (e.g., discharge capacitors or drain hydraulic lines, release spring, air, gas, steam, or water pressure, etc.)
- Verify equipment has been de-energized by trying to restart and using testing equipment (such as an electric circuit tester).
- Only the worker who puts on a lockout or tagout device may remove it.
- When the work is finished, inspect to ensure all tools, mechanical restraints and electrical devices have been removed before you turn on power.

Lockout/Tagout
continued

- Warn affected employees that power will be restored.
- If the LOTO job is interrupted for testing or positioning equipment, the procedures must start over from the beginning.
- Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Material Handling

Hazards: Falling material and struck-by injuries.

Safe Practices:

- Inspect motorized vehicles and mechanized equipment daily or prior to use.
- Shut off vehicles and set brakes before manually loading or unloading.
- Secure trucks and trailers from movement during loading and unloading operations.
- Before unloading, inspect load for shift, displacement or instability.
- Do not store material under energized electrical lines or in emergency exit ways.
- Keep hand trucks in safe operating condition.
- Ensure safe clearance for equipment through aisles, doorways and roadways.
- Equip chutes with sideboards of sufficient height to prevent materials from free-falling.
- Equip hooks with safety latches when hoisting materials so that slings or load attachments will not slip off the hoist hooks accidentally.
- Ensure securing chains, ropes, chokers and slings are adequate for the job.
- Ensure no one will be passing under the suspended loads.
- Prohibit employees from riding on top of any load that can shift, topple or otherwise become unstable.
- Ensure personnel do not ride in material hoist; post “No Riders Allowed” at hoist.
- Ensure entrances to hoistways are protected with caution gates or bars.
- Ensure operators of vehicles on public roads have valid licenses.
- Ensure cutting tools or tools with sharp edges are placed in closed boxes or containers that are secured in place when tools are carried in passenger compartments of employee transport vehicles.
- Ensure material safety data sheets are available to employees handling hazardous substances.

Personal Protective Equipment

Hazards: Misuse or incorrect use and improper selection of equipment for the hazard.

When to Use: Hazards should be abated through engineering or administrative controls. If those controls are infeasible or not available, use personal protective equipment to put a barrier between you and the hazards.

- Hearing protection—when exposed to noise at or above 90 decibels (dB) TWA. If you have to yell to communicate, you need hearing protection.
- Hard hats—when exposed to falling objects.
- Gloves and arm protection—when exposed to chemicals, heat, cold, radiation agents or abrasive surfaces.
- Respirators—see respirator topic page.
- Safety harnesses with lanyards—when exposed to fall hazards.
- Eye and face protection—glasses are intended to be used to protect from impact hazards; e.g., when using saws. Goggles protect the eyes from splash hazards.
- Face shields are intended to protect the face from splash hazards and should be worn with safety glasses or goggles.
- Welding hoods—when performing cutting, welding or brazing.
- Airline sand blasting hoods—used when sandblasting.
- Flame resistant (FR) protective clothing—when employees are exposed to arc flash hazards; while working within the **flash protection boundary**, all parts of the body must be protected.
- Steel-toe shoes—when exposed to heavy falling objects.

Personal Protective Equipment
continued

- ASTM International (formerly known as American Society for Testing and Materials) has replaced the ANSI Z41.1 standards. New shoes will be designed to the specifications and be stamped with the following standards:
  - ASTM F2412-05—Standard Test Methods for Foot Protection.
  - ASTM F2413-05—Standard Specification for Performance Requirements for Foot Protection.

Examples of PPE Exempted from the Employer Payment Requirements:

- Non-specialty safety toe protective footwear (e.g., steel-toe shoes/boots)
- Non-specialty prescription safety eyewear
- Sunglasses/sunscreen
- Lineman's boots
- Ordinary rain gear
- Logging boots required under 1910.266(d)(1)(v)
- Ordinary cold weather gear (coats, parkas, cold weather gloves, winter boots)
- Back belts

Examples of PPE for Which Employer Payment Is Required [If used to comply with an OSHA standard]:

- Metatarsal/toe cap foot protection
- Rubber boots with steel toes
- Non-prescription eye protection/goggles
- Prescription eyewear inserts/lenses for full face respirators and welding helmets
- Hardhat
- Hearing protection
- Welding PPE
- Face shields
- Firefighting PPE (helmet, gloves, boots, proximity suits, full gear)

Personal Protective Equipment
continued

- Items used in medical/laboratory settings to protect from exposure to infectious agents (aprons, lab coats, goggles, disposable gloves, shoe covers, etc.)
- Non-specialty gloves:
  - Payment is required if they are PPE, i.e. for protection from dermatitis, severe cuts/abrasions
  - Payment is not required if they are only for keeping clean or for cold weather (with no safety or health consideration).
- Rubber sleeves
- Rubber insulating gloves
- Barrier creams (unless used solely for weather-related protection)
- SCBA, atmosphere-supplying respirators (escape only)
- Respiratory protection
- Fall protection
- Climbing ensembles used by linemen (e.g., belts and climbing hooks)
- Personal floatation devices (life jackets)
- Window cleaners safety straps
- Encapsulating chemical protective suits
- Reflective work vests

Respirators

Hazards: Pulmonary system damage, acute or chronic.

Safe Practices: Respirators protect only the employee wearing them from a hazard, rather than reducing or eliminating the hazard from the workplace as a whole. Engineering and work practice controls are preferable because they eliminate and control the hazard.

- Ensure, on a constant basis, that respirators are properly fitted and worn.
- Conduct an exposure assessment to determine the type of respirator needed and the amount of hazardous exposure.
- Fit test annually all respirators that rely on a face to mask seal with either qualitative or quantitative methods to determine whether the mask provides an acceptable fit to a wearer.
- Ensure that a written respirator program that covers medical fitness and proper maintenance procedures be implemented when respirator use is required.
- Where a filtering face piece respirator (dust mask) is used voluntarily, the employee must still be provided a copy of Appendix D.
- Inspect respirators for basic function prior to each use.
- Clean as often as necessary to prevent occurrence of unsanitary conditions.
- Ensure there is no facial hair when fitting respirator for a face seal.
- Half-face and full-face respirators can both be used for protection against most vapors, acid gases, dust or welding fumes.
- A self-contained breathing apparatus is used for entry and escape from atmospheres that are considered immediately dangerous to life and health or oxygen deficient.

Stairways

Hazards: Falls that result in fractures, strains and sprains.

Safe Practices:

- Provide fixed stairs from one structure level to another where operations necessitate regular travel between levels.
- Provide fixed stairs to access operating platforms at equipment requiring attention routinely during operations and where employees may be exposed to acids, caustics, gases or other harmful substances.
- Ensure stair rails are installed on all stairways with four or more risers.
- Ensure that stair rails are not more than 34 inches in height.
- Ensure guardrails are installed on all stairs prior to use.
- Ensure stairway platforms are no less than the width of a stairway and a minimum of 30 inches in length measured in the distance of travel.
- Ensure fixed stairways have a minimum width of 22 inches.
- Design and construct stairways to carry a load of five times the normal live load anticipated but never less strength to withstand a moving concentrated load of 1,000 pounds.
- Ensure that the unprotected sides and edges of stairway landings are protected by a standard guardrail system.
- Install stairways at least 30 degrees, and no more than 50 degrees, from the horizontal.
- Ensure that a platform is provided at all locations where doors or gates open directly into a stairway.
- Ensure that the swing of gates and doors do not reduce the effective width of the platform to less than 30 inches.
- Ensure the vertical clearance above any stair tread to an overhead obstruction be at least 7 feet.

Scaffolding

Hazards: Falls that can result in fractures or death.

Safe Practices:

- Erect scaffolds according to the manufacturer's instructions.
- Ensure safety instructions are included when renting, leasing or purchasing scaffold equipment.
- Use screw jacks, base plates and mudsills to ensure adequate support.
- Install a guardrail system or fall arrest system for scaffolds more than 10 feet above a lower level.
- Ensure that guardrails are installed on all open sides and the ends of platforms.
- Provide safe access to scaffold platform.
- Prohibit employees from climbing the cross bracing as a means of access.
- Prohibit the use of unstable objects to support scaffolds.
- Fully plank the working platform.
- Ensure that platforms do not deflect more than 1/60 of span when loaded.
- Prohibit moving a scaffold by locking the wheels while employees are on the scaffold.
- Ensure that scaffolds are inspected before each shift by a competent person who is capable of identifying scaffold hazards and who has the authority to correct the hazards.
- Ensure employees working on scaffolds are trained by a person qualified to recognize hazards associated with the type of scaffold and to understand the procedures to control or minimize hazards.
- Employees erecting, dismantling, moving or inspecting the scaffolds must be trained by a competent person to recognize any hazards.
- Retrain employees who demonstrate a lack of skill or understanding in the scaffolding requirements.

Vehicle Safety

Hazards: Struck-by and roll-over injuries.

Safety Equipment: Seat belts, rollover protective structure, brakes, horn, reverse alarm.

Inspection: Inspect vehicles before each shift to ensure that all parts and accessories are in safe operating condition. Check brakes, trailer brake connections, parking system, emergency brakes, tires, coupling devices, seatbelts, horn, steering mechanism, operating controls, safety devices (e.g., reverse signal alarm, ROPS), lights, reflectors, defrosters, windshield wipers, and fire extinguishers.

Safe Practices:

- Do not drive a vehicle in reverse gear with an obstructed rear view, unless the vehicle is equipped with an audible reverse alarm or another worker signals that it is safe.
- Drive on roadways or grades that are safely constructed and maintained.
- Make sure you and all personnel are in the clear before using dumping or lifting devices.
- While not in use, lower or block bulldozer and scraper blades, end-loader buckets, dump bodies, etc., and leave all controls in neutral position.
- Set parking brakes when vehicles and equipment are parked and chock the wheels.
- Vehicles that are loaded by cranes, power shovels, loaders, etc. must have a cab shield or canopy that protects the driver from falling materials.
- Do not exceed a vehicle's rated load or lift capacity.
- Do not carry personnel unless there is a seat available; no one should ride in buckets or on forks.
- Use traffic signs, barricades or flaggers when construction takes place near public roadways.
- Workers should wear highly visible clothing, such as red or orange vests, and reflective vests.
- Wear provided seatbelts.

Walking/Working Surfaces

Hazards: Falls that can lead to fractures or death.

Safe Practices:

- Ensure that the workplace is assessed to determine if the walking and working surfaces have the strength and structural integrity to safely support workers.
- Ensure that workers exposed to falling 4 feet or more from an unprotected side or edge are protected by a guardrail system, safety net system or personal fall arrest system.
- A personal fall arrest system consists of an anchorage, connectors, body harness, and may include a lanyard, deceleration device, lifeline or a suitable combination.
- Skylight floor openings shall be guarded by a standard skylight screen or fixed standard railing.
- Every floor hole into which persons can accidentally walk shall be guarded by a standard railing with standard toe board on all exposed sides or a floor hole cover.
- Ensure that employees using ramps, runways and other walkways are protected from falling 4 feet or more by a guardrail system.
- Where wet processes are used, drainage shall be maintained and gratings, mats or raised platforms shall be provided.
- Where mechanical handling equipment is used, safe clearance shall be maintained in aisle-ways and passageways. (It is recommended that aisles be at least 3 feet wider than the largest piece of equipment.)

Workplace Violence

Workplace violence is predictable; it doesn't just happen. It develops like a storm. Workers see and hear events that they should report.

Workplace Violence Includes: Beatings, rapes, stabbings, suicides, shootings, psychological trauma, threatening phone calls, intimidation, harassment, stalking and verbal abuse.

Sources of Violence Include: Strangers, clients, co-workers and personal relations.

Risk Factors Include: Contact with the public, working with unstable or volatile persons, delivery of passengers or goods, working alone or in small numbers, working late at night or during early morning hours, working in high-crime areas, guarding valuable property, and money exchange.

Be Alert to Warning Signs: Fascination with weapons, alcohol or drug abuse, anguish over pending or recent demotion or termination, history of violent incidents, severe stress, social isolation, psychological deterioration, decreased or inconsistent job functioning, deterioration in personal hygiene, and major personality changes.

Safe Practices:

- Management should set a zero tolerance policy for violence, threats, harassment, intimidations and other disruptive behavior in the workplace.
- Take all reports of incidents seriously.
- Supervisors are accountable to act upon reports of violence.
- Workers will report violent behavior to _____.
- Management is committed to emotional and physical health of the employee.
- The employer can implement security measures that include locks on doors, cell phones and walkie-talkies, adequate lighting, lockers for valuables, night-time guards, identity badges, surveillance cameras, curved mirrors, and controlled access to work areas.
- Call 911 for any physical actions or threats that appear imminent, acts of physical harm, or property damage or out-of-control behavior.

General Industry References

For more information on hazards and OSHA standards, view www.osha.gov and refer to:

29 CFR Part 1904—Recording and Reporting Occupational Injuries and Illnesses

29 CFR Part 1926—Safety and Health Regulations for Construction

- Subpart A—General
- Subpart B—Adoption and Extension of Established Federal Standards
- Subpart C—Reserved
- Subpart D—Walking-Working Surfaces
- Subpart E—Exit Routes, Emergency Action Plans, and Fire Prevention Plans
- Subpart F—Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms
- Subpart G—Occupational Health and Environmental Control
- Subpart H—Hazardous Materials
- Subpart I—Personal Protective Equipment
- Subpart J—General Environmental Controls
- Subpart K—Medical and First Aid
- Subpart L—Fire Protection
- Subpart M—Compressed Gas and Compressed Air Equipment
- Subpart N—Materials Handling and Storage
- Subpart O—Machinery and Machine Guarding
- Subpart P—Hand and Portable Powered Tools and Other Hand-Held Equipment
- Subpart Q—Welding, Cutting and Brazing
- Subpart R—Special Industries
- Subpart S—Electrical
- Subpart T—Commercial Diving
- Subpart U–Y—Reserved
- Subpart Z—Toxic and Hazardous Substances