

Supervisor's Safety Manual



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Supervisor's Safety Manual

Introduction

A key element to maintaining a safe work place is applicable safety training for the workers. Workers may include - along with full-time employees - temporary workers, student workers, volunteers, faculty, or visiting faculty. A person is initially hired based on their past experience and education, but each new work place or newly assigned job task will have a variety of specific safety details that must be relayed.

The ***New Employee Safety Topics*** form is a list of general safety topics to guide the supervisor in safety discussions and training that may be needed with a new worker. Keep in mind, the information in the following pages is only the highlights of each topic. These general precautions should be used in conjunction with specific job-tasks related details - make the list fit the work area and assignments the worker will be given. Communicate the specifics - who, what, when, where and how should be addressed for each applicable topic.

The ***Safety Training*** form, on the final page, is to be used for documenting additional safety training after an employee's initial training. It can be used to record attendance in group meetings and document specific topics addressed.

The most important part of any training is open, two-way communication. The supervisor does not need to do all the talking. Give the worker a chance to ask questions and voice concerns. Encourage workers to come back and ask questions later, especially if they come across a situation where they are not sure how to perform a task safely or have apprehensions about the job task. Work together to establish safe working procedures if a hazardous situation is encountered.

Document all training – if it is not documented, it did not happen!

If you have any questions or need more information, please feel free to email or give me call:

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MSU MAFES/ES
NEW EMPLOYEE SAFETY TOPICS

1. _____ Emergency Action
 - Have a plan ahead of time
 - Existing MSU policies & documents
2. _____ Fire Prevention
 - General precautions
 - Hot work
 - Open burning
 - Fireworks, pyrotechnics & flame effects displays
 - Should there be a fire
3. _____ Personal Protective Equipment (PPE)
 - Communicate - What specifically needed; Where & when to use; How to inspect, maintain & replace; How to wear, adjust & use; Limitations.
 - PPE options categorized by body part to protect.
 - PPE hazard assessment tool
4. _____ Hazard Communications
 - Existing MSU policies & documents (haz waste, transportation, pesticides, lab safety)
 - Safety Data Sheets
 - Labels
 - Spill prevention & control
5. _____ Vehicles & Equipment
 - General precautions
 - UTV/carts/ATV
 - Industrial trucks
 - Tractors
 - Skid steers
 - MSU vehicles
 - *Vehicle & Equipment Operator Evaluation form*
6. _____ Hand & Power Tools
7. _____ Lockout / Tagout
 - Responsibilities
 - Procedures
 - Removal of locks/tags
 - Group locks
 - Specifications of locks/tags
 - Training required
8. _____ Machine/Equipment Guards
9. _____ Asbestos Awareness
10. _____ Working Alone
11. _____ Good Housekeeping
12. _____ If in doubt, ask first

Other topics or any questions from employee: _____

Job title & dept/station: _____ Date: _____

Employee name: _____ signature: _____

Conducted by: _____ signature: _____

Emergency Action

Have a Plan Ahead of Time

- Stay Informed – Be observant, monitor conditions, have emergency alerts (maroon alert, weather radio, text warnings, etc.), understand safety data sheet information.
- Be Prepared - Emergency supplies such as first aid kit/AED, fire extinguisher, flashlight, batteries, phone charger/power supply, emergency showers/eyewash stations, spill containment/clean-up supplies should be kept on-hand. Take classes and become trained on how to use these supplies.
- Know the Action Plan – Know specifics of how to react in accordance with your daily work areas - what to do, where to go, and how to communicate with others and contact emergency personnel in the event of both natural and man-made emergency situations.

Within MSU, there are several documents and policies that address emergency action:

- **Emergency Operations**, Policy 1.04 - <https://www.policies.msstate.edu/policypdfs/0104.pdf>
- **Campus Emergency Management Plan** - (referenced in policy 1.04)
<https://www.emergency.msstate.edu/files/cemp.pdf>
- **MSU Emergency Guidelines** - <https://www.emergency.msstate.edu/guidelines/>
Good source with easy to read information & video related to evacuations, earthquake, severe weather, shelter in place, fire, suspicious devices/substance, violence, and preparedness.
- **Employee Use of Automated External Defibrillators**, Policy 91.352 -
<https://www.policies.msstate.edu/policypdfs/91352.pdf>

Fire Prevention

While fire prevention is a very broad subject, listed below are only some general precautions and areas to be aware of that are commonly encountered at MSU. Mississippi State University is subject to the International Fire Code as adopted by the Mississippi Department of Insurance State Fire Marshal's Office.

Extension Cords

- Extension cords are not to be substituted for permanent wiring.
- Use appropriately sized extension cords.
- Extension cords should never be run through walls, above ceiling tiles, or under carpet/rugs.
- Extension cords must be plugged directly into an approved receptacle, not a power strip.

Multi-plug Adapters

- Cube adapters, unfused power strips, or any other device not approved must not be used.
- Power strips that are UL listed (marking on the power strip) can be used. Power strips must be plugged directly into a receptacle – NOT another power strip or an extension cord.

Storage

- Storage of materials must be orderly and in stable stacks.
- Do not allow combustible waste materials to accumulate in buildings, structures or on the premises.
- Combustibles should not be stored under/in stairways, in mechanical/electrical rooms, egress pathways, or exits.
- Storage must be maintained 2 feet below the ceiling in nonsprinklered areas, or minimum of 18 inches below sprinkler head deflectors in sprinklered areas.
- Chemical and flammable liquid storage requirements are to be based on quantity by fire zone, segregated by type, and other items as noted in its safety data sheets. Storage may include special containers or storage cabinets.

Portable, Electric Space Heaters - See MSU policy 95.502 <https://www.policies.msstate.edu/policypdfs/95502.pdf>

- All portable, electric space heaters utilized must be Underwriter's Laboratory (UL) labeled.
- Never operate a heater you suspect is damaged.
- Position a minimum of 3 feet from any combustible material. Keep combustible material such as beds, sofas, curtains, papers, and clothes at least 3 feet from the front, sides, and rear of the heater.
- The heater must never be left unattended. It must be unplugged, not just turned off, anytime you leave your work area.

Keep Equipment Clean

- Harvesters, cutters, mowers, conveyors and other such equipment should be cleaned off daily to prevent accumulation of a fuel source should a fire start from component failure or other incidents. The same is true for tractors, vehicles, UTVs, ATVs, and other rolling stock that may accumulate debris in skid-plates, undercarriage, or around exhaust and other heat producing areas.

Spontaneous Combustion

- **Oily Rags:** Carbon-based animal or vegetable oils, such as linseed oil, cooking oil, cottonseed oil, corn oil, soybean oil, lard and margarine, can undergo spontaneous combustion when in contact with rags, cardboard, paper or other combustibles. A common example is with linseed oil used to finish wood, including some exterior deck sealers and wood stains. . Heat is generated during the drying process and therefor a pile of oil-soaked rags act as an insulator, allowing the oxidizing oil to become hot enough to cause the cloth to smoke and eventually ignite. The bigger the pile, the greater the possible heat and the greater the risk. Petroleum based oils like motor oil, grease, diesel & gasoline on rags are not a concerns for spontaneous combustion (although don't forget to keep them away from sparks).
 - ✓ Large quantities of oily rags should be dispose in an approved enclosed, metal container to await pickup by an industrial cleaning company.
 - ✓ When you have a single or small amount of oily rags, allow the rags to dry before disposal. Spread the soiled rags in a single layer outdoors on concrete or a metal rack to prevent the buildup of heat and allow the rags to become hard and brittle. Place the rags out of direct sunlight and secure the corners to prevent movement by wind. Once dry they are safe for disposal.
- **Hay:** The principal way to avoid fire is to bale hay at proper moisture levels. Hay in round bales should contain no more than 18% moisture when placed inside a barn, while hay in small rectangular bales should contain no more than 20% moisture.
 - ✓ Whether stacked in the field or placed in a barn, new hay should be checked frequently for possible heating. At first, check in the morning and afternoon. If no signs of abnormal heating are found, the intervals may be lengthened. If the temperature reaches 130°F, move the hay to allow increased air circulation and cooling.
 - ✓ Protect the bales from ground moisture and runoff by placing them on a bed of gravel, old tires, poles or pallets. If storing hay inside, be sure the barn roof and any plumbing do not leak. Likewise, provide adequate drainage so water will not enter the barn during storms. Hay may be at the proper moisture content when baled and stored, but wetting from a leak can allow bacterial activity to increase and result in a fire.

Hot Work

Hot work is any operation that involves open flames or sparks or produces sufficient heat to ignite flammable or combustible materials. Examples of hot work includes, but is not limited to: cutting, welding, soldering, brazing, grinding, thawing pipe, and torch applied roofing.

A fire watch shall be provided during the hot work activities and shall continue for not less than 30 minutes after the conclusion of the work. The fire watch shall include the entire hot work area. Individuals designated to fire watch duty shall have fire-extinguishing equipment readily available and shall be trained in the use of the equipment. Individuals assigned to fire watch duty shall be responsible for extinguishing spot fires and communicating an alarm. The individuals responsible for performing the hot work and individuals responsible for providing the fire watch shall be trained in the use of portable fire extinguishers.

A pre-hot-work check shall be conducted prior to work to ensure that all equipment is safe and hazards are recognized and protected. A report of the check shall be kept at the work site during the work and available upon request. The pre-hot-work check shall determine all of the following:

1. Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
2. Hot work site is clear of combustibles or combustibles are protected.
3. Exposed construction is of noncombustible materials or, if combustible, then protected.
4. Openings are protected.
5. Floors are kept cleaned.
6. No exposed combustibles are located on the opposite side of partitions, walls, ceilings, or floors.
7. Fire watches are assigned.
8. Fire extinguishers are operable and available.

If hot work is to be conducted inside a building on the main campus, contact the EH&S department for a hot work permit. <https://www.ehs.msstate.edu//pdfs/fireandexplosion.pdf>

Open Burning

Always notify the proper authorities – Calling the fire department, city hall (for guidance when inside city limits), campus/local law enforcement officials, and/or forestry office non-emergency phone at these offices will help you contact the correct person. A burn permit may be necessary in some circumstances. Notifying your close neighbors is also a good practice.

Burning Permits are required for any fire set for a recognized agricultural and/or forestry purpose, these are issued by The Mississippi Forestry Commission based on the daily fire weather forecast. Contact the appropriate [MFC district office](https://www.mfc.ms.gov/burning-permits) to obtain a permit. <https://www.mfc.ms.gov/burning-permits>

Important Steps to Prevent Wildfires from Open Burning:

- ✓ Check the conditions. Don't burn when windy or vegetation is dry.
- ✓ Check local regulations.
- ✓ Burn this, not that ... Most places allow burning of dry, natural vegetation grown on the property. Household trash, plastics, or tires are not good to burn and even illegal to burn in some areas.
- ✓ Look up ... Choose a safe burning spot away from power lines, overhanging limbs and buildings. You'll need at least 3xs the height of the pile of vertical clearance.
- ✓ Look around ... Burn site should be surrounded by gravel or dirt of at least 10 ft. in all directions. Keep the surrounding watered down and have a shovel close by.
- ✓ Prepare your pile ... Keep it small and manageable. Add additional debris as the fire burns down.
- ✓ Have a cell phone within reach to request help quickly in case of an emergency.
- ✓ Have a contingency plan in case the wind shifts, the fire gets out of control, someone gets injured, equipment breaks down, or smoke creates severe visibility problems.
- ✓ Stay with the fire until it is completely out ... Drown the fire with water, turn over the ashes with shovel, and repeat to ensure it's put out completely.

Fireworks Displays - <https://www.ehs.msstate.edu/pdf/fireworks.pdf>

Pyrotechnics - <https://www.ehs.msstate.edu/pdf/pyrotechnics.pdf>

Flame Effects Displays - <https://www.ehs.msstate.edu/pdf/flame.pdf>

Should there be a fire ...

- **ACTIVATE** the building alarm system or notify the fire department by calling 911.
Or, have someone else do this for you.
- **ASSIST** any persons in immediate danger, or those incapable on their own, to exit the building, without risk to yourself.
- (Only after these two are completed should you) **ATTEMPT** to extinguish the fire.

Only fight a fire if:

- ✓ The fire is small and contained.
- ✓ You are safe from toxic smoke.
- ✓ You have a means of escape.
- ✓ Your instincts tell you it's OK.

When it is time to use the extinguisher on a fire, just remember **PASS!**

1. **Pull** the pin.
2. **Aim** the nozzle or hose at the base of the fire from the recommended safe distance.
3. **Squeeze** the operating lever to discharge the fire extinguishing agent.
4. Starting at the recommended distance (about 10 ft.) **Sweep** the nozzle or hose from side to side until the fire is out. Move forward or around the fire area as the fire diminishes. Watch the area in case of re-ignition.

Personal Protective Equipment (PPE)

Individual clothing and personal protective equipment (PPE) requirements are determined by a hazard assessment of the job tasks being performed and workplace environment, review of applicable safety data sheets, facility signage, and other suitable information.

PPE is to be used for protection only after instituting all feasible engineering and work practice controls to eliminate and reduce hazards.

Before starting work, check that your PPE is suitable for the purpose, in good condition, worn correctly, and does not impede movement. Avoid loose-fitting jackets, scarfs, neckties, jewelry, flared or cuffed pants, unconfined long hair or anything that could become entangled with machinery or caught on objects.

PPE and clothing exposed to infectious materials, designated for animal areas, or contaminated with any other harmful substance must not be worn in public areas or taken home.

For effective PPE use, ensure employees are told and understand ...

- Which specific PPE is required for their job task.
- Where to obtain PPE – initial and replacement.
- How to inspect PPE for damage and identify when replacement is necessary.
- How to clean/disinfect as necessary and store PPE.
- How to wear, adjust, and use PPE for proper fitment and protection.
- Limitations of that particular PPE.

To help ensure employee usage of PPE ..

- Maintain an easily accessible supply -keep PPE close by in the shop, office, lab or work truck.
- Let your employees have a choice on comfort, fit, & style if there are options.

The following pages contain information that is grouped by body part.

It is not all inclusive, but intended to highlight areas of importance related to personal protective equipment.

Proper PPE selection, fitting, and training is necessary before use; always ask for safety professional guidance if unsure about anything.

Note: This information does not include PPE required for electric power and high voltage workers.

Eye / Face Protection

Employee uses appropriate eye or face protection when exposed to eye or face hazards from impact or contact with flying particles, molten metal, liquid splashes, or potentially injurious light radiation.

All eye/face protection (safety glasses, goggles, face shields) should meet ANSI (American National Standards Institute) requirements of ANSI Z87.1. These will be indicated by the Z87.1 marking on inside of the lens, shield or ear piece. Prescription glasses or sunglasses without the ANSI markings are not to be used in place of safety glasses.

Ensure compatibility with prescription eyewear – Some employees need corrective lens prescriptions. The eye/face protection of these employees must be compatible with the prescription eyewear with two options:

- Incorporate the employee's prescription into the lens of the eye protection equipment or,
- Supply eye protection equipment to be worn over the prescription eyewear – if this is the case, ensure that the prescription lenses are compatible and do not obstruct the positioning or functioning of the other.

Safety glasses /Goggles - Primary protectors for the eyes.

Face shields - Secondary protectors for the eyes and intended to protect the entire face against exposure to impact hazards. Always wear safety glasses under the face shield because the bottom and sides of face shields typically have gaps; liquid or debris passing through these gaps can contact your eyes, potentially causing an injury.

Verify that filtered lenses have the appropriate shade number - Certain operations, such as welding/cutting, require the use of filtered lenses to shield the eyes against potentially harmful light radiation. These filters are defined by shade numbers. The higher the number the darker the shading and more filtering.

Several common operation and the shade lens needed (*reference [29 CFR 1926.102](#) for a complete list*):

- Stick welding: 1/16 to 5/32" electrode – shade 10; 3/16 to 1/4" electrode – shade 12
- MIG/TIG welding: 1/16 to 5/32" electrode (nonferrous/aluminum) shade 11, (ferrous) shade 12.
- Soldering – shade 2
- Cutting – shade 5

Head Protection

Head protection (hard hat, bump cap) is needed for employees if objects might fall from above and strike them on the head, if they might bump their heads against fixed objects, such as exposed pipes or beams, or if they work near exposed electrical conductors. A cap or hard hat with a full brim is advantageous for sun protection or deflecting rain/snow.

Hard hats are designed with high quality, wear-resistant materials but it will not last forever. The protective properties of the helmet will be degraded by exposure to many common work environments, such as temperature extremes, chemical exposure, sunlight and normal daily wear and tear. In general, it is recommended to replace a hard hat suspension every 12 months and the entire hard hat after no more than 5 years; or service life as recommended by the manufacture. Earlier replacement is necessary when damaged or if has withstood impact or penetration.

Bump caps are designed to protect the wearer from minor head bumps and lacerations, but are not intended to protect from falling or flying objects. Bump caps should be used when there is a risk of impact between the head and stationary objects - like low ceilings, overhead piping, or hanging items. When there's a risk of impact with moving objects of any type, a hard hat must be used.

Hands / Arms

Protective gloves are the primary means of protecting hands. When the risk of injury includes the arm, protective sleeves, often attached to the gloves, may be appropriate too.

There is a large variety of glove/sleeve materials, protective features, and sizes available. Selections should be based on the nature of the hazard.

Disposable, single use gloves may be necessary to avoid cross contaminations or protection from biohazard materials. In these cases, special precautions must be taken to avoid bare skin contact with the contaminates during glove/sleeve removal when the job task is finished. Specific waste disposal regulations may apply.

Feet / Legs

Good footing is most important in any work area. Proper footwear may include steel toes, chemical resistance, cold protection or variety of other features to prevent injury from the hazards present. Proper footwear can also help eliminate slips, trips, and falls, as well as fatigue.

There are very few to no laboratory, animal facilities or labor-type work areas where sandals or open toed/slip-on type shoes are permissible. Wear disposable shoe covers whenever working with an infected animals, their waste, or other infectious hazards to prevent cross contamination.

Some of the potential hazards that would require feet/leg protection include:

- Heavy objects that might roll onto or fall onto employees' feet
- Sharp objects such as nails or fish fins that might pierce the soles or uppers of ordinary shoes
- Chemicals or molten metal that might splash on feet or legs
- Laceration from chainsaw operation
- Legs struck by objects thrown during weed trimmer/edger operation
- Falls from slipping on wet or unexpected surfaces

Body – Skin / Whole Body

Hazards to your body/skin can vary from physical hazards found in a laboratory (chemical splashes), a shop (hot work sparks), or a kitchen (hot grease); but can also come from extreme weather when working outdoors. Proper body/skin protection can help prevent everything from sunburn and frost bite to heat stroke and hypothermia.

In animal facilities and laboratories, wear dedicated work clothes or outer protective clothing (e.g., lab coat, scrubs, gown, Tyvek suit), especially when in contact with infected animals, their waste or bodily fluids, and infectious or chemical hazard.

High Visibility Clothing – necessary when working along roadways, construction areas, or where heavy equipment is in operation. All highly visible clothing whether it's a vest, jacket or shirt should be bright fluorescent orange or lime/yellow and have visible reflective material when working at night. Keep in mind that this clothing can fade over time from sun exposure and the washing machine; get new when this happens.

Life Jackets (or Personal Flotation Device -PFD) – necessary when working near water. The selection of life jacket design should be based on the work, boating activity and water conditions that will be encountered for the specific job task. Each PFD has its own maximum buoyancy, performance level, and limitations. Life jackets must be Coast Guard-approved, in serviceable condition and the appropriate size for the intended user.

Fall Arrest/Restraints

Precautions need to be taken whenever there are elevated surfaces over 4 feet in general workplaces or over 6 feet high in construction (heights vary depending on the job task).

Fall protection can include hand rails, safety nets, stair railings, personal fall arrest harness and restraint systems to name a few. Each component of the fall protection must meet strength/weight criteria based on the work conditions, environment, and individual using it. End users must be trained so that they understand the limitations and proper use of their equipment. If there is a job task where you need a personal fall arrest system, having the correct and compatible components is critical, ask for professional guidance before making these purchases and for training.

Lungs / Respiratory

When employees must work with harmful dusts, fogs, smokes, mists, fumes, gases, vapors, sprays or insufficient oxygen, work practice and engineering controls should be implemented first to create a nonhazardous atmosphere. When measures such as enclosing or confining the contaminant-producing operation, exhausting the contaminant, or substituting with less toxic materials does not eliminate the hazard completely or reduce it to below the permissible exposure limits, the employee will need a respirator.

A respirator guards the wearer against hazardous atmospheres by covering the nose and mouth or the entire face or head. Respirators have their limitations; different hazards require different respirators and specific components. When the hazard results from a known chemical or substance, the safety data sheet is a reliable source for information to help with respirator selection.

If there is a specific job task where a respirator is necessary, ask for safety professional guidance to ensure proper selection, training, fit testing, and medical evaluation forms, before use.

Ears / Hearing

Hearing protection is usually in the form of ear plugs or ear muffs. It is necessary, by regulatory definition, when the employee's noise exposure exceeds an 8-hour time-weighted average sound level (TWA) of 90 dBA (dose of 100 percent). However, even short-term exposure to loud noise can hurt. After just 15 minutes, you're potentially damaging your hearing. Exposure to the sound of just one gunshot without ear protection can permanently damage your hearing. So take precaution and wear hearing protection.

Do not allow ear plugs & muffs to become dirty to avoid ear infection. Ear plugs are disposable & should be replaced often as needed. Ear muffs may become soiled from sweat and should be properly cleaned & foam/cushions replaced if necessary.

Hazard Assessment for Personal Protective Equipment (PPE)

Use this tool to help you with a hazard assessment to see if the employees need to use personal protective equipment (PPE) by identifying activities that may create hazards for your employees. The activities are grouped according to what part of the body might need PPE.

1. Do a walk through survey of each work area and job task. Read through the list of work activities in the first column, putting a check next to the activities performed in that work area or job.
2. Read through the list of hazards in the second column, putting a check next to the hazards to which employees may be exposed while performing the work activities or while present in the work area. (for e.g., work activity: chopping wood; work-related exposure: flying particles).
3. Decide how you are going to control the hazards. Try considering engineering, work place, and/or administrative controls to eliminate or reduce the hazards before resorting to using PPE. If the hazard cannot be eliminated without using PPE, indicate which type(s) of PPE will be required to protect your employee from the hazard.
4. Feel free to write in on the "other" line concerns that are not already listed.

PPE Hazard Assessment

Department / Station: _____ **Conducted by:** _____
Job/Task(s): _____ **Date:** _____
Work area(s): _____

Use a separate sheet for each job/task or work area

EYES / FACE			
Work activities, such as: <input type="checkbox"/> abrasive blasting <input type="checkbox"/> handling chemicals <input type="checkbox"/> cutting <input type="checkbox"/> drilling <input type="checkbox"/> welding <input type="checkbox"/> cleaning <input type="checkbox"/> other: _____	<input type="checkbox"/> sanding <input type="checkbox"/> sawing <input type="checkbox"/> grinding <input type="checkbox"/> hammering <input type="checkbox"/> mixing	Work-related exposure to: <input type="checkbox"/> airborne dust <input type="checkbox"/> flying particles <input type="checkbox"/> biohazard splashes <input type="checkbox"/> hazardous liquid chemicals <input type="checkbox"/> intense light or lasers <input type="checkbox"/> extreme heat/cold <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Safety glasses <input type="checkbox"/> Safety goggles <input type="checkbox"/> Face shield <input type="checkbox"/> Other: _____ <input type="checkbox"/> Dust-tight <input type="checkbox"/> Shading/Filter (# _____)
HEAD			
Work activities, such as: <input type="checkbox"/> building maintenance/construction <input type="checkbox"/> electrical wiring <input type="checkbox"/> walking/working under catwalks/conveyor belts <input type="checkbox"/> walking/working under crane loads <input type="checkbox"/> confined space operations <input type="checkbox"/> other: _____	<input type="checkbox"/> falling objects <input type="checkbox"/> machine parts <input type="checkbox"/> beams/pipes <input type="checkbox"/> exposed electrical wiring or components <input type="checkbox"/> other: _____	Work-related exposure to: <input type="checkbox"/> falling objects <input type="checkbox"/> machine parts <input type="checkbox"/> beams/pipes <input type="checkbox"/> exposed electrical wiring or components <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Hard Hat <input type="checkbox"/> Type I & II (general service/ falling objects) <input type="checkbox"/> Class E/G/C (electrical shock hazard) <input type="checkbox"/> Bump cap <input type="checkbox"/> Other: _____
HANDS/ARMS			
Work activities, such as: <input type="checkbox"/> material handling <input type="checkbox"/> handling chemicals <input type="checkbox"/> sawing <input type="checkbox"/> infectious materials <input type="checkbox"/> using knives <input type="checkbox"/> other: _____	<input type="checkbox"/> cooking <input type="checkbox"/> grinding <input type="checkbox"/> welding <input type="checkbox"/> working with glass <input type="checkbox"/> cleaning	Work-related exposure to: <input type="checkbox"/> biohazards/infectious materials <input type="checkbox"/> irritating chemicals <input type="checkbox"/> tools or materials that could scrape, bruise, irritate or cut <input type="checkbox"/> extreme heat/cold <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Gloves <input type="checkbox"/> Chemical resistance <input type="checkbox"/> Temperature resistance <input type="checkbox"/> Abrasion/cut resistance <input type="checkbox"/> Slip resistance <input type="checkbox"/> Protective sleeves <input type="checkbox"/> Long sleeved shirt

		<input type="checkbox"/> Other: _____
FEET/LEGS		
Work activities, such as: <input type="checkbox"/> building maintenance <input type="checkbox"/> construction <input type="checkbox"/> demolition <input type="checkbox"/> aquaculture <input type="checkbox"/> hot work / welding <input type="checkbox"/> chain sawing <input type="checkbox"/> laboratory <input type="checkbox"/> landscaping/trimmer <input type="checkbox"/> use of highly flammable materials <input type="checkbox"/> other: _____	Work-related exposure to: <input type="checkbox"/> puncture from debris/fish fins <input type="checkbox"/> stepping on debris/hazards <input type="checkbox"/> exposed electrical wiring or components <input type="checkbox"/> heavy equipment <input type="checkbox"/> objects striking feet/legs <input type="checkbox"/> slippery surfaces <input type="checkbox"/> tools <input type="checkbox"/> infectious materials/contamination <input type="checkbox"/> explosive atmospheres <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Safety shoes or boots <input type="checkbox"/> Toe protection <input type="checkbox"/> Electrical protection <input type="checkbox"/> Puncture resistance <input type="checkbox"/> Anti-slip soles <input type="checkbox"/> Metatarsal protection <input type="checkbox"/> Heat/cold protection <input type="checkbox"/> Chemical resistance <input type="checkbox"/> Saw chaps <input type="checkbox"/> Long pants <input type="checkbox"/> Foot-Leg guards <input type="checkbox"/> Close-toed shoes <input type="checkbox"/> Disposable shoe covers <input type="checkbox"/> Other: _____
BODY/SKIN		
Work activities such as: <input type="checkbox"/> laboratory <input type="checkbox"/> hot work / welding <input type="checkbox"/> irritating chemicals/materials <input type="checkbox"/> baking or frying <input type="checkbox"/> sawing <input type="checkbox"/> outside for extended periods <input type="checkbox"/> other: _____	Work-related exposure to: <input type="checkbox"/> chemical splashes <input type="checkbox"/> extreme heat/cold <input type="checkbox"/> sharp or rough edges <input type="checkbox"/> outdoor weather <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Coveralls, lab coat, apron <input type="checkbox"/> Welding leathers <input type="checkbox"/> Abrasion/cut resistance <input type="checkbox"/> Protective hat/appropriate clothing <input type="checkbox"/> Raingear/rubber boots <input type="checkbox"/> Other: _____
BODY/WHOLE		
Work activities such as: <input type="checkbox"/> building maintenance/ construction <input type="checkbox"/> heavy equipment work zones <input type="checkbox"/> along roadway <input type="checkbox"/> boat, seining, or other water activities <input type="checkbox"/> utility work <input type="checkbox"/> other: _____	Work-related exposure to: <input type="checkbox"/> working from heights of 10 feet or more <input type="checkbox"/> confined space <input type="checkbox"/> struck by traffic/equipment <input type="checkbox"/> working near water <input type="checkbox"/> other: _____	Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/> If no, use: <input type="checkbox"/> Fall Arrest/Restraint: Type: _____ <input type="checkbox"/> High visibility clothing <input type="checkbox"/> PFD/ life jacket Type: _____ <input type="checkbox"/> Other: _____

LUNGS/RESPIRATORY		
<p>Work activities such as:</p> <input type="checkbox"/> cleaning <input type="checkbox"/> mixing/pouring/spraying chemicals <input type="checkbox"/> laboratory <input type="checkbox"/> painting <input type="checkbox"/> grinding/sanding <input type="checkbox"/> other: _____	<p>Work-related exposure to:</p> <input type="checkbox"/> irritating dust or particulate <input type="checkbox"/> irritating or toxic gas/vapor/chemicals <input type="checkbox"/> infectious agents <input type="checkbox"/> asbestos <input type="checkbox"/> other: _____	<p>Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If no, use: <input type="checkbox"/> N, R, or P disposable respirator (filter-mask, non-cartridge type only). <input type="checkbox"/> Air purifying, filtered face mask <input type="checkbox"/> _____ half _____ full-face type <input type="checkbox"/> Supplied-air respirator <input type="checkbox"/> Self-contained breathing apparatus</p>
EARS/HEARING		
<p>Work activities such as:</p> <input type="checkbox"/> generator/ motors <input type="checkbox"/> equipment <input type="checkbox"/> power tools <input type="checkbox"/> other: _____	<p>Work-related exposure to:</p> <input type="checkbox"/> loud noises <input type="checkbox"/> loud work environment <input type="checkbox"/> noisy machines/tools <input type="checkbox"/> other: _____	<p>Can hazard be eliminated without the use of PPE? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>If no, use: <input type="checkbox"/> Ear plugs or earmuffs (with appropriate NRR rating)</p>

(1) Respirator fit testing & medical evaluation is required. Selection of appropriate filter is critical.

Hazard Communications

The purpose of hazard communications is to inform of the potential hazards of chemicals and other products. Understanding appropriate protective measures, maintaining containers, reading safety data sheets, and knowing proper cleanup and disposal methods is all part of ensuring employees are informed of the proper information and trained appropriately.

Within MSU, there are several documents and policies that have hazard communication elements within them. Read and understand about the ones that are applicable to your job tasks.

- **Hazardous Waste Guidance Manual** <https://www.ehs.msstate.edu/pdfs/hazardous.pdf> (as referenced in MSU policy 79.01 Hazardous Waste) This includes info on how to dispose items such as chemicals, used oil, fluorescent light bulbs and used oil.
- **Transportation of Hazardous Materials & Dangerous Goods**, MSU policy 79.09 <https://www.policies.msstate.edu/policypdfs/7909.pdf>
- **Guidelines for Pesticide Shipping, Storage, and Handling** <http://www.dafvm.msstate.edu/resources/policies/dafvm-guidelines-for-pesticide-final-draft.pdf>
- **Chemical Hygiene Plan & Laboratory Safety Manual** <https://www.ehs.msstate.edu/pdfs/chemical.pdf>
- **Biosafety**, MSU policy 79.02 <https://www.policies.msstate.edu/policypdfs/7902.pdf>
- **Radiation Safety Manual** (as referenced in MSU policy 79.08) https://www.ehs.msstate.edu/safety/radiation/library/docs/radiation_safety_manual.pdf

It is the responsibility of supervisors and lab principle investigators to communicate hazards to their workers and students this is not limited to, but should include, safety data sheet information & access to them, hazards as mentioned in the above documents and policies, steps for preventions and emergency action plans.

Safety Data Sheets (SDS)

Chemical manufacturers/distributors of hazardous materials are required to provide SDS upon initial shipment, when updated, and upon request (also commonly found on their website). Have these SDS readily available for review and read and understand the SDS for products used within your work area.

Labels

All bottles, jugs, drums, tanks and other type containers should be clearly labeled with their contents and hazard warnings. If factory labels are missing or no longer legible, re-label the container with something such as a permanent marker, paint or other appropriate signage.

Spill Prevention & Control

To prevent accidental spills and pollution issues, proper precautions must be taken seriously:

- Keep containers closed when not in use (example - caps on tight, bung plugs in drums).
- Do not leave funnels in containers/tanks.
- Place drip trays under leaky machines/equipment.
- When maintenance is performed, all fluids should be caught in drain pans and properly disposed of or poured into appropriate tanks/drums by end of the day. If saving for later use, place in container that can be sealed to prevent spills.
- When re-fueling vehicles/equipment, never leave them unattended while pump is on.
- Keep hazardous chemicals and pesticides stored in secondary containment pans. Keep drain valve to tank containment dikes closed.
- Monitor containers for leaks or spills.

Having the ability to contain spills at or near their source helps minimize the potential for discharge into the outdoor ground or waters, or can prevent the spread of fire and flammable vapors, or can prevent health or physical hazards potentially resulting in a variety of bad scenarios. Spill controls is the key is preventing small accidents from becoming a danger to people, facilities, and the environment:

- In the event of injury or serious chemical exposure to a person contact 911 for medical assistance. Use the emergency eyewash and shower to remove contaminants as needed.
- Begin cleanup of the spilled material ONLY if you have proper personal protective equipment and can safely do so.
- Keep a spill containment kit nearby. Include items such as disposable gloves, absorbent mats/pillows/socks, containment barriers, absorbent granule material (oil dry) or any other such product that will help contain / cleanup the specific problem that could occur in the work area.
- Special control & cleanup precautions may be necessary for certain chemicals and situations; always read SDS before initial use to be prepared should a spill incident occur.
 - Radioactive <https://www.ehs.msstate.edu/safety/radiation/workers/spills/>
 - Biological <https://www.biosafety.msstate.edu/nihguidelines/accidentreporting/>

All employees have the responsibility to notify their supervisor when any hazardous material spill occurs or potential problem is recognized. Should anything more than a small spill occur contact MAFES/ES Risk Management or the MSU Hazardous Waste Officer or for assistance with cleanup response, guidance on proper waste disposal, and remediation.

The MSU Environmental Health & Safety department provides basic emergency training in spill response (~ 1 hour) on request and advanced hands-on training (8 & 24 hours) occasionally.

Vehicles & Equipment

This material is intended to serve as a summary of basic safety requirements for operating vehicles & equipment. Owner's manual from the manufacturer must be read for specific items.

Written training material or verbal instruction from an experienced operator cannot replace the value of allowing a new operator hands-on, seat time in a safe area for the person to become familiar with and comfortable operating their specific equipment in a safe manner ... ensure new operators are trained in all 3 ways.

General Precautions:

- * Speed appropriate for full control is dependent on vehicle/equipment setup, cargo load, terrain, weather, visibility & driver skill.
- * Every vehicle and piece of equipment is different & reacts differently; know & understand the capabilities of the one you are operating.
- * Operate controls smoothly. Avoid jerky starts, turns and stops that cause the equipment to become unstable. No abrupt maneuvers; smooth & slow = predictable.
- * Stay off cell phones and avoid anything that can be distractive to operating the vehicle/equipment and maintaining focus.
- * Daily inspections must be performed before the operator can use the vehicle/equipment. This is an assurance that the everything is in good operating condition. Report any damage to your supervisor immediately. Damage to some items may deem the vehicle/equipment un-safe to operate and should be taken out of service until repairs are completed.
- * Keep operator's cab clean of trash & free of debris that could effect operation of controls.
- * Be aware what's above – power lines, shop doors, overhangs.
- * Be aware what's below – water & gas lines, electrical – call before you dig MS 811 (or Facilities Management if on MSU main campus).

In case of a rollover:

- Never jump out
- Grab hand holds or steering wheel/controls; keep arms inside; do not grab ROP.
- Plant feet firmly against floorboard.
- Ride it out until vehicle/equipment comes to a complete stop.

Transporting vehicles & equipment:

- Matching tow vehicle, trailer & load weight and ratings.
- Loading precautions – secure ramps; driving up vs winching up.
- Securing loads – appropriate straps/chains & anchor points.
- Lights, brakes & other safety features in working order.

UTVs / ATVs / Carts

In light of the popularity of ATVs, UTVs, and carts for recreational purposes, remember that when at work these vehicles are to be used as a tool, not a toy – Keep speeds reasonable and no horseplay!

UTV/Carts - Commonly known as side-by-sides, Rangers, Mules, golf carts, etc.

Always wear the seatbelt.

Request from MAFES/ES Risk Management - UTV/Cart Safety Training handout sheet & video sheet.

ATV - Commonly known as 4-wheelers.

Always wear a helmet.

Tips & Practice Guide for the ATV Rider

<https://atvsafety.org/wp-content/uploads/2018/03/ASI-ATV-Tips-Guide-2018.pdf>

MSU Extension ATV Resources

<http://extension.msstate.edu/atv-links-resources>

Industrial Trucks

Commonly known as forklifts, variable reach lifts (like JLG type), aisle trucks, and powered pallet jacks.

Hazards for each industrial truck is dependent on the equipment configuration itself and the environment where it is operated.

Request from MAFES/ES Risk Management - Industrial Trucks program sheet

Tractors

The most common farm tractor and machinery related accidents result in approximately 20 fatalities annually in Mississippi.

Request from MAFES/ES Risk Management - Tractor Safety program sheet

National Ag Safety Database

<http://nasdonline.org/1919/d001874/tractor-safety.html>

MSU Extension Farm Safety/Tractor videos

<https://www.youtube.com/playlist?list=PLv0hyvcm4p77FYBM7r6hgZXiVmQ7rY-5U>

Skid Steers

A common piece of rolling stock used in agriculture is a skid steer loader. While they are compact enough to get in tight spaces and stout enough to handle different material and attachments, sometimes workers do not fully appreciate their potential hazards.

Workplace fatalities from skid steer involvement is overwhelmingly from being pinned between the bucket and frame or between the lift arm and frame. These skid steer accidents result in a tragedy because of activities such as ...

- Working or standing under a raised lift arm or attachment without proper support device.
- Leaning out of the operator's compartment into the path of the moving lift arm.
- Bypassing or removing safety interlocks and equipment installed by the manufacturer.

The following safe practices will minimize hazardous situations with a skid steer loader:

- ✓ Always read and understand the operator's manual & follow the manufacturer's recommendations.
- ✓ Inspect the skid-steer loader to ensure that all safety systems are functioning properly prior to operating the equipment.
- ✓ Never permit riders on the skid-steer loader, in the bucket or attachment.
- ✓ Always keep bystanders a safe distance away from the work area.

- ✓ Always lower the bucket or attachment so that it is flat on the ground and set the parking brake before exiting.
- ✓ Do not leave the operator's seat while the engine is on. Never attempt to activate the controls unless properly seated with the seatbelt fastened and the seat bar (if equipped) lowered.
- ✓ Keep all body parts inside the cab while operating a skid-steer loader.
- ✓ Never modify, bypass, disable, or override safety systems.
- ✓ Travel and turn with the bucket in the lowest position possible. Carry the load low.
- ✓ Plan to load, unload, and turn on level ground, when possible.
- ✓ Never attempt maintenance or other work while lift arms or attachments are raised without using an approved lift arm support device. Replace protective guards and shields after repairs or service

MSU Vehicles

Administered by Procurement & Contracts department.

Fleet Management Guidelines

<https://www.procurement.msstate.edu/pdf/FleetManagementGuidelines.pdf>

Vehicle & Equipment Operator

Evaluation

Operator's name: _____ Dept. /Station: _____

Type of vehicle/equipment: _____ Date: _____

_____ Understands and follows general safety rules & specific controls for this vehicle/equipment.

_____ Can perform a pre-operation check of the vehicle/equipment and familiar with the owner's manual.

_____ Cautious and aware of surrounding activity.

_____ Overall, observed to be a competent operator.

Comments:

Evaluated by: _____ Title: _____

Date: _____

Hand and Power Tools

Employees should be trained in the proper use and be provided with the appropriate personal protective equipment for the specific tools that will be used during their job tasks.

Five basic safety rules can help prevent hazards associated with the use of hand and power tools:

1. Keep all tools in good condition with regular maintenance.
2. Use the right tool for the job.
3. Examine each tool for damage before use and do not use damaged tools.
4. Operate tools according to the manufacturers' instructions.
5. Provide and use properly the right personal protective equipment.

Hand Tools

Hand tools are tools that are powered manually (wrench, ax). Misuse and improper maintenance are the greatest hazards from hand tools.

- Use the proper tool for the job (for example, don't substitute a screwdriver for a chisel).
- Knives and scissors must be sharp; dull tools can cause more hazards than sharp ones.
- Cut in a direction away from your body.
- Wrenches must not be used when jaws are sprung to the point that slippage occurs.
- Impact tools such as drift pins, wedges, and chisels must be kept free of mushroomed heads.
- The wooden handles of tools must not be splintered.
- Iron or steel hand tools may produce sparks that can be an ignition source around flammable substances. Where this hazard exists, spark-resistant tools made of non-ferrous materials should be used where flammable gases, highly volatile liquids, and other explosive substances are stored or used.
- Never carry sharp or pointed tools in your pocket.

Power Tools

Power tools are categorized by their power source: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated. Guards & safety switches that are adjusted properly and in place will protect against many hazards encountered.

To prevent hazards associated with the use of power tools, workers should observe the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil, and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
- Keep all people not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vise, freeing both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care; keep them sharp and clean for best performance.
- Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Wear proper apparel for the task. Loose clothing, ties, or jewelry can become caught in moving parts.
- Do not use electric tools in damp or wet locations unless they are approved for that purpose.
- Ensure abrasive wheel are not damaged and appropriate speed rating to match the tool they are used on.
- When using pneumatic tools, a safety clip or retainer must be installed to prevent attachments such as chisels on a chipping hammer from being ejected during tool operation. Pneumatic tools that shoot nails, rivets, staples, or similar fasteners and operate at pressures more than 100 pounds per square inch (6,890 kPa), must be equipped with a special device to keep fasteners from being ejected, unless the muzzle is pressed against the work surface.
- Fuel-powered tool hazards comes from fuel vapors that can burn or explode and also give off dangerous exhaust fumes. The worker must be careful to handle, transport, and store gas appropriately and be aware of carbon monoxide dangers if using these tools indoors.

Source: <https://www.osha.gov/Publications/osh3080.html>

Lockout/Tagout Control of Hazardous Energy

The purpose of lockout/tagout guidelines is to control the unsafe release of energy during maintenance and repair procedures. Before any employee services equipment where the potential exists for unexpected energization, start-up of the equipment, or the release of stored energy the machine or equipment must be isolated from the energy source, rendered inoperative, and locked or tagged out as appropriate.

Any individual working on machines/equipment without the protection of a lockout/tagout device, the unauthorized removal of a lock/tag, or operating any part of the machine that has been locked/tagged out of service without all parties removing their locks/tags may result in disciplinary action up to and including dismissal.

Responsibilities

Supervisors:

- Stress the importance of lockout/tagout procedures.
- Train or coordinate training for employees in lockout/tagout procedures prior to any repairs, service, adjustment, or inspections on machinery or equipment.
- Initiate discussion and agreement on lockout procedures with contractors or outside service personnel when working with them or in close proximity.
- Keep employees informed of any procedure changes and ensure their understanding
- Supply employees with needed hardware.
- If employee seems unsure of machinery/equipment hazards or expresses any concerns, find a knowledgeable person to assist them before any work is started.

Employees:

- follow the procedures as outlined in this document
- maintain lockout/tagout supplies needed on a regular basis
- if not comfortable about machine/equipment and its hazards, seek assistance from your supervisor

General

Lockout/tagout procedures will be used whenever a piece of machinery or equipment is being repaired, serviced, adjusted or inspected unless for troubleshooting purposes that equipment must be left in the energized state to determine the cause of a problem. Once the cause has been identified and prior to any repairs being made, the machine/equipment will be locked/tagged out.

Only if an energy isolating device is not capable of being locked out, must the tagout system be used.

Lockout/tagout hardware should be kept in a separate box in a convenient location (service truck, toolbox) for the individual using it. Extra devices and hardware should be kept in a common location designated by the supervisor along with other safety equipment. Locks must be physically different in appearance from other common lock types used in the area to designate them as lockout locks.

Procedures

The following is a base-line procedure for all lockout/tagout operations. It is recommended to have a specific procedure developed for each machine/equipment in the work area.

1. Scene survey – Identify all potential hazards associated with the job and locate which switches, valves, etc. need to be locked or tagged out. Be aware that electricity may not be the only source of energy. Other sources of energy may include things such as compressed air, hydraulic pressure, capacitors, or springs under pressure. If you do not have the appropriate tools/supplies or knowledge to do the job safely, do not attempt to do the job!
2. Notify all affected people of the lockout/tagout and the reason for it.
3. If the machine/equipment is operating, shut it down by normal stopping procedures.
4. Operate the switch, valve, or other energy isolating device so that the machine/equipment is isolated from its source. Stored energy (such as springs, elevated machine parts, rotating flywheels, hydraulic systems, and air/gas/steam/water pressure) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
5. Lockout/tagout the energy isolating device with an assigned, individual lock or tag. The key must remain with the person who applied the lock. Because tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock, use additional safety measures to provide a level of equivalent safety. This might include removing and isolating a circuit element, blocking a controlling switch, opening an extra disconnecting device, or removing a valve handle to reduce the potential for any inadvertent energization while the tags are attached.
6. Test
 - A. Operate the push button or other normal operating controls to make certain the machine/equipment will not operate.
CAUTION: Always return operating controls back to the neutral or off position.
 - B. For electrical work, verify the component and/or circuits in close proximity are de-energized using an appropriate electrical test device before start of work.
7. The machine/equipment is now locked/tagged out. Proceed with repairs/work.
8. When all repairs/work is completed, remove all tools from work area, reinstall any guards or covers, and be sure everybody is clear of machine/equipment.
9. Take locks/tags off and restore energy. Each lock/tag must be removed from the energy-isolating device by the employee who applied it.
10. Proceed with a normal start-up.

Temporary Removal of Lockout/Tagout Devices

In some circumstances, employees need to temporarily restore energy to a machine or piece of equipment during servicing or maintenance to test and /or reposition the machine or piece of equipment. Lockout or tagout devices may be removed temporarily in order to perform these tasks under the following procedures:

1. The machine or equipment must be cleared of tools and materials.
2. Employees must be removed from the machine or equipment area & clear of possible hazards.
3. All lockout or tagout devices may then be removed.
4. Authorized employees may then proceed to energize and test or position the equipment or machinery.
5. Following testing or positioning, all systems must be deenergized and energy control measures reapplied to continue the servicing and /or maintenance.

Who Can Remove a Lockout/Tagout Device

A lockout/tagout device should only be removed by the person who applied it. Only in unusual circumstances and under the direction of the supervisor, may that device be removed by someone other than the applier. The following must be ensured:

1. Verify that the authorized employee who applied the device is not at the facility.
2. Make all reasonable efforts to contact the authorized employee to inform that his lockout/tagout device will be removed.
3. Ensure that the authorized employee knows that the lockout/tagout device has been removed before he resumes work.

Maintenance Requiring an Energy Source or Supply

Where maintenance, service, adjustment, or inspection operations cannot be accomplished with the energy source disconnected, such operations may only be performed under the following conditions:

- * The control panel or where the equipment may be activated must at all times be under the control of a qualified technician.
- * All participants must be in clear view of the technician or in positive communication with each other.
- * All participants must be beyond the reach of equipment elements which may move rapidly and present a hazard.

Group Lockout

Each person working on the machine/equipment must have his lock in the group lockout hasp. This way no energy is restored until each individual has removed his lock and is therefore aware start-up is about to begin. Or, primary responsibility is vested in an authorized employee for a set number of employees working under the protection of this authorized employee's lock. This authorized employee must ensure continuity of protection for his assigned employees and not take the lock off until each individual on the job gives permission and #8 of the above Procedures is completed. NOTE: This option can not be used while working with contractor or outside service personnel.

Tags

Each tag must be legible and understandable by all employees. It should identify the person who installed it, the date, and the time. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

Locks

Locks used for a lockout procedure must be physically different in appearance from other common lock types used in the area. Each lock must always be identifiable as to who installed it. This can easily be done with a personalized tag given when each lock is issued & available with other LO hardware when replacement is needed. This personalized tag must stay on the lock itself.

Training

Employees directly involved in the placement of lockout/tagout devices must receive training on the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control specific to the areas of their job tasks.

Affected employees should be informed on the purpose and use of the energy control procedures.

Other employees (those whose work activities are or may be in an area where energy control procedures may be utilized) must be instructed about the procedure and about the prohibition relating to attempts to restart or reenergize machines or equipment that are locked out or tagged out.

Retraining should occur when there is a change in job assignment requiring such, a change in machinery/equipment that presents a new hazard, a change in energy control procedures, or a recognized hazard.

Machine/Equipment Guards

Guards are essential to protect from accidental contact or unauthorized access to machines/equipment or their components with hazardous moving parts during operation. Machines/equipment must only be operated with all guards intact and in operable condition as intended by the manufacturer.

Guards come in a variety of configurations and serve different purposes. They will not guard against the hazard if not installed, adjusted, and used as designed.

Safeguards must meet these minimum requirements:

- Prevent contact
- Prevent objects from falling into machine
- Be secure and not easily removed
- Allow for safe, efficient lubrication
- Create no interference with job function
- Create no additional hazards

Steps to remain safe around machinery and equipment include:

- Never start a machine without guards in place. After routine maintenance or repairs, double check to see that all guards have been properly replaced.
- Make sure the following points are guarded:
 - Blades
 - Rotating parts
 - Points of operation
 - Areas where chips, sparks or other debris may fly out
- Never wear loose clothing or jewelry when working around machinery.
- Make sure you know how to turn the power off should an emergency arise.
- For machines that require “feeding”, always use a push block or stick. Never use your hands.
- Never reach around or under a machine guard.
- Before guards are removed for repair or adjustment, the power should be turned off, all devices de-energized and lockout procedures followed.
- Report missing or defective guards immediately to your supervisor.
- Pay attention at all times when operating or around machinery.

Supervisors/instructors are responsible for ensuring their employees/students are trained in the safe operation of the machines which will be used in the performance of their duties. Employees/students are responsible for notifying their supervisor if a guard is damaged or missing, for not operating a machine without operable guards as originally designed, and for not removing or otherwise modifying a guard.

Asbestos Awareness

Asbestos is a natural occurring mineral that was discovered to have excellent fiber strength and heat resistance. Because of these qualities, it has been used in a variety of building construction materials for insulation and as a fire retardant. Asbestos began being used in the 1940s after World War II. But since the early 1970s, it has become heavily regulated by many different agencies, including EPA, DOT, OSHA, and the state of Mississippi. Though the use of asbestos is heavily restricted, it is not completely banned in the United States and still use in some products today.

In general, exposure may occur only when the asbestos-containing material is disturbed or damaged in some way to release particles and fibers into the air. Asbestos exposure occurs from inhaling these tiny fibers. Exposure to asbestos increases your risk of developing lung disease. That risk is made worse by smoking. Health effects may not be apparent for 15 to 30 years or longer after the initial exposure. Asbestos exposure may cause lung cancer, mesothelioma (a rare form of cancer that is found in the thin lining of the lung, chest and the abdomen and heart) or asbestosis (a serious progressive, long-term, non-cancer disease of the lungs).

Many buildings built before 1980 contain asbestos in old floor tiles, ceiling tiles, roof shingles and flashing, siding, insulation (around boilers, ducts, pipes, sheeting, fireplaces), pipe cement, and joint compound used on seams between pieces of sheetrock. If you suspect material contains asbestos, don't touch it. Look for signs of wear or damage such as tears, abrasions, or water damage. Damaged material may release asbestos fibers. This is particularly true if you often disturb it by hitting, rubbing or handling, or if it is exposed to extreme vibration or air flow. Sealing, encapsulation, or covering with an enclosure may be a good solution for these damaged areas.

You cannot tell whether a material contains asbestos simply by looking at it. A trained asbestos professional should take samples for analysis. In fact, if done incorrectly, sampling can be more hazardous than leaving the material alone. Do not take samples yourself.

If you are going to make changes in a building that might disturb asbestos, repair or removal by a trained and accredited asbestos professional is needed.

If building materials aren't damaged and won't be disturbed, you do not need to have them tested for asbestos. Material that is in good condition and will not be disturbed (by remodeling, for example) should be left alone.

- ✓ Don't dust, sweep, or vacuum debris that may contain asbestos.
- ✓ Don't saw, sand, scrape, or drill holes in asbestos-containing materials.
- ✓ Don't use abrasive pads or brushes on power strippers to strip wax from asbestos flooring. Never use a power stripper on flooring that may contain asbestos.
- ✓ Don't sand or try to level asbestos flooring or its backing. When asbestos flooring needs replacing install new floor covering over it, if possible.

Working Alone

There is a responsibility to protect workers whether they're surrounded by colleagues or alone on an assignment. A lone worker could be someone out checking desolate forest roads, someone on a tractor in a back pasture, someone coming into the office/lab at night when the building is not occupied by others, or even traveling workers that are away from their home base. While performing work using at least the "buddy system" is always best, it is not always possible. The following tips can help make working alone or in an unfamiliar environment safer.

As a supervisor...

- Conduct a risk assessment to determine if work may be done safely by lone workers.
- Ensure the lone worker is very qualified and has experience in the task being performed.
- Set limits for what is permissible during lone work.
- Train lone workers on emergency response & establish a clear action plan in the event of an emergency.
- Provide information on high risk geographical areas if travel there is required.
- Know your lone worker's daily plan, including where they will be when.
- Ensure regular contact through periodic visits or via phone/ radio contact.
- Verify that lone workers have returned to fixed base or home after completing a task.

As a lone worker...

- Do not enter any situation, location, or perform a task where you feel threatened or unsafe.
- Tell your supervisor about any feelings of discomfort or apprehension about an upcoming job task, meeting, or travel arrangement.
- Prepare a daily work plan so everyone knows where and when you are expected somewhere. Share this with your supervisor and family member/friend.
- If traveling, be aware of potential weather conditions & effects it could have.
- Be prepared – have correct tools needed, personal protective equipment, 1st aid kit, etc. on hand.
- Always take your cell phone with you and keep it in a place you can access quickly.
- Be alert and observant of your surroundings at all times.

Certain work should NOT be done alone...

- In labs with hazardous chemicals or high-risk experiments.
- At heights.
- In confined spaces (such as tanks, grain bins or elevators, culverts, etc.).
- With electricity.
- With hazardous substances or materials.

Sources: <http://www.safetyandhealthmagazine.com/articles/12628-lone-worker-safety>;
https://www.ccohs.ca/oshanswers/hsprograms/workingalone_offsite.html

Housekeeping

Good housekeeping is crucial to workplaces safety. It can help prevent injuries, improve productivity and morale, or even help prevent potential problems from non-compliance. All workers should participate in housekeeping, especially in terms of keeping their own work areas tidy. Supervisors need to encourage reporting safety hazards, repairs needed, or items for disposal found while doing workplace housekeeping.

Tips for Effective Housekeeping:

Slips, trips and falls are a leading cause of injuries and days away from work.

Floors should be clean and dry.

- If you spill coffee in the hallway, stop to wipe it up. If you need to mop a large area (entrance or hallway) place a sign warning other of the wet floor.
- Equipment leaking oil or mess created from making a repair - clean it up.
- Use the right cleaning product. Oils and grease take more than a rag & water; be careful not to spread slipperiness around, rather than getting it up and off the floor.

Drainage should be present where wet processes are used.

- If drains are clogged and allowing standing water, get them fixed.

Keep walk ways and exits clear of items.

- Replace worn, ripped or damage flooring.
- Consider installing anti-slip flooring in areas that can't always be cleaned.
- Ensure floor mats don't slip or have curled up corners.

Avoid tracking materials.

- Work area mats should be kept clean. This may even help prevent the spread of hazardous materials to other work areas or keep from tracking it home.
- Separate cleaning protocols may be needed for different areas to prevent cross-contamination.
- If the materials are toxic, industrial hygiene testing, uniforms and showering facilities might be needed. Employees who work with toxic materials should not wear their work clothes home.

Clear clutter.

- Allow enough area for proper work station setup. This will help be more ergonomic or comfortable, and effective for work productivity.
- Everything should have a place – organize.
- Return tools and other materials to their designated place after using them.
- Keep aisles, stairways, emergency exits, electrical panels and mechanical rooms clear of clutter. These areas cannot be used for storage.
- Dispose of things no longer useable – unrepairable equipment, out dated chemicals, empty containers, & trash.

Clean, inspect, and make needed repairs to your...

- Personal protective equipment
- Tools and equipment
- Vehicles

Housekeeping should be more than a one-time initiative. The amount of debris or contaminants the workplace creates can help determine the frequency of housekeeping.

Sources: <http://www.safetyandhealthmagazine.com/articles/12470-tips-for-effective-workplace-housekeeping>

