

Environmental Services Safety Procedures

Purpose: To provide basic safety culture, increase safety awareness, reduce job accidents and to have safety become a permanent commitment for the Environmental Services Department.

Discussion: Personnel in the Environmental Services Department will be thoroughly familiar with equipment, devices, controls, machine and work procedures. It is the constant responsibility of all concerned to maintain the University in a clean and safe environment. Each individual shall be on constant vigil for hazards involving fire, electrical, mechanical, chemical, and plumbing situations, which will directly affect the operation to meet its mission. Each individual will be qualified in their assigned duties or responsibilities. Each employee is expected to be knowledgeable in the fundamentals of safety and emergency procedures. The primary function is to be one of preventive rather than corrective maintenance.

STORAGE POLICIES

The following policies pertain to storage of miscellaneous materials. These policies were established to ensure that fire hazards are minimized in all storage areas. Mechanical rooms **will not** be used for storage. The University has designated other areas for storage; items in mechanical rooms will need to be removed. These policies are to prevent misuse of storage areas at the University.

1. All storage areas shall have a means of egress with a distance of two and a half feet wide to prevent people from tripping over materials being stored in these rooms.
2. Designated storage areas shall be clean and organized at all times.
3. No items should be stored underneath open staircases.
4. No large boxes or heavy objects shall be stored higher than six feet from the ground. This will prevent objects or boxes from falling on persons and prevent unnecessary muscle strain within normal reaching distance above the head. Boxes and objects can be stored higher than six feet upon approval from the Health and Safety Manager.
5. Chemical containers shall be stored on wooden pallets or shelves, not on the floor.
6. All flammable and corrosive liquids shall be stored in approved storage containers and cabinets.
7. All flammable liquids shall be stored in well ventilated and cool areas, away from any possible ignition sources.
8. The Health and Safety Manager should be contacted for pick up of unused paint that needs to be discarded.
9. Homecoming decorations with no future intended use shall be discarded immediately.
10. Furniture that has no future intended use should be sent to surplus as soon as possible. Contact the moving crew for pick up.
11. Storage of mattresses shall be coordinated through the Health and Safety Manager.
12. All items in designated storage areas shall be labeled with the contact person, contents, date (xx-xx-xxxx) the storage began.
13. All designated storage areas shall be inspected at least twice each fiscal year to minimize improper storage.
14. Paper documents need to be discarded after seven years from the storage date. The Health and Safety Manager should be contacted for documents that need to be stored longer than seven years.

Six Principles of Safety:

1. Have the correct equipment for the job, do not use substitutions.
2. Use the equipment correctly.
3. Maintain equipment in good operating condition.
4. Put away all equipment properly and the appropriate storage area.
5. Personal Protective Equipment (safety goggles, shields, respirators, and protective clothing) will be worn as required.
6. Environmental Services personnel will be trained on proper lifting and carrying of heavy materials.

Personal Protective Equipment

The following guidelines are the minimum requirements for personal protective equipment. Though not all inclusive, it is expected that these guidelines will be followed to the best extent possible, any deviation must be approved in writing.

1. Face or eye protection must be worn when the possibility of flying debris is present, i.e.: power saw, drill grinding, etc. Protection must be worn when injurious gases, vapors or liquids are present. Protection must also be worn when thermal and radiation hazards are present.
2. Hand Protection provides protection to fingers, hands, wrists and forearms. Rubber, vinyl or neoprene gloves are to be used when handling caustic chemicals, cleansers, or petroleum products, Leather gloves will be used in handling rough, abrasive or hot materials.
3. Head protection is required when the potential of head injury is present. Any maintenance more than four feet above the head or the possibility of falling objects exists requires use of head protection.
4. Ear protection is required when intensity of sounds exceeds eighty-five dB.
5. Respiratory protection prevents harmful fumes, dust, vapors and gases from entering the respiratory system, when such conditions exist a respirator must be worn.

Hand Tools and Equipment

All Environmental Services personnel will be trained and documented in the proper and safe use of hand tools and equipment by the Director, Associate Directors and Supervisors.

Power Tool Safety

1. Power tools will be operated by authorized personnel only. Such tools will be inspected before being used.
2. Any defect, such as a frayed cord or broken plug, will be reported immediately and repaired as soon as possible. In the interim, the equipment will be tagged-out "DO NOT USE".
3. Never use ordinary hand tools in explosive or extremely dusty atmospheres; use only non-sparking tools, including explosion-proof flashlights.
4. Never use an ungrounded tool, especially in a wet location or when in contact with metal. Ungrounded tools are only permitted if double-insulate under standards of OSHA.
5. Extension cords will be used in a safe manner. Cords will be suspended overhead if there is traffic that might cause a hazard, they will be yellow in color, and of proper amperage for the tool being used.
6. Guards will be kept in place on all equipment including portable equipment such as grinders and saws.
7. Safety glasses will be worn when using portable power equipment as well as when using shop equipment.
8. Power tools will be cleaned with high flash solvents. When using compressed air, the line will have less than thirty PSI. Facial protection will be worn at all times when cleaning power tools.
9. Use Lock-out/Tag-out and disconnect the plug from the receptacle when changing guards or accessories on equipment being maintained or repaired.
10. Power tools will be used and maintained in strict accordance with the manufacturer's instructions. The instructions will be maintained on file in the shop office and should be referred to as needed. Repairs on equipment will be made only by qualified persons or by the manufacturer.
11. Extra caution will be used when tools of any kind are being used on a ladder or scaffolding. Only fiberglass UL approved ladders will be used when doing electrical or lighting repairs. Personnel must be certified by the Director prior to using the bucket truck.
12. When working on electrical switches or systems, the valves or switches will be de-energized at the source and tagged to prevent the system from being re-energized.

13. Electrical wiring will be accomplished by qualified maintenance electricians who follow recommended codes and use material and techniques approved by the UL.
14. Other types of power equipment will be handled and maintained in accordance with manufacturer's specifications.
15. Proper procedures will be used when operating a lift or bucket truck.

Ladder and Scaffold Safety

1. Portable ladders will be equipped with non-slip bases. The bottom should be held, tied or otherwise secured to prevent slipping. If a step ladder is used on a polished floor, a non-slip material should be applied to the front feet.
2. Extension ladders will be placed so that the horizontal distance from the base of the plane of the support is about one-fourth the ladder length between the ground and the top support. A minimum of the three feet should extend above the support, in accordance with the OSHA requirements.
3. Ladders will never be used as runways or scaffolds.
4. Ladders will not be placed in front of a door that opens towards the ladder unless the door is locked, blocked or guarded.
5. Never lean ladders against glass or plastic objects.
6. Ladders will have solid footing and should be equalized on both sides so that they cannot sink or overturn.
7. If at all possible extension ladders should be secured at the top.
8. Ladders will be climbed with both hands on the rails and rungs. If materials must be handled, they will be hauled up by rope and bucket. Paint buckets will be held to the ladder rung by "S" hooks rather than by one hand.
9. The user will always face the ladder. The worker will not lean too far out to the side of the ladder or too far overhead; the worker will never stand higher than the third highest rung of a single or extension ladder.
10. Routines for ladder inspections will be maintained and ladders will be inspected before each use. Defective ladders will be tagged for immediate repair or destruction.
11. Short ladders will never be spliced to provide additional length.
12. Loose tools and materials will not be placed on the top step of folding ladders, but on a folding shelf. Screwdrivers and small tools can be set in holes drilled into the top of folding ladders, where they are handy but will not roll off.
13. Public areas where ladders are being used will have warning signs or will be roped off.
14. Harnesses will be used for work being done over 4 feet.

Machine Guards

Too frequently, the purpose of a machine guard is misunderstood in that it is thought to concern only the point of operation or a power transmission part. However, guarding is also necessary to prevent injuries from other causes on and around machines. Specifically, machine guarding protects against or prevents injury from these sources:

1. Direct contact with the moving parts of a machine.
2. Work in process (kickbacks on a circular rip saw, metal chips from a machine tool, splashing of hot metals or chemicals, etc.)
3. Mechanical failure.
4. Electrical failure.
5. Structural failure.
6. Human failure, prompted by such things as curiosity, zeal, distraction, fatigue, indolence, worry, anger, illness and deliberate chance taking.

Any Guard must:

1. Conform to the standards of OSHA or the state inspection department that has jurisdiction.
2. Be considered a permanent part of a machine or equipment.
3. Afford maximum positive protection.
4. Prevent access to the danger zone during operation.
5. Not weaken the structure of the machine.
6. Be convenient, not interfere with efficient operation of the machine, and cause no discomfort to the operator.
7. Be designed for the specific job and specific machine, with provision for oiling, inspection, adjustment, and repair of the machine parts.
8. Be durable, resistant to fire and corrosion and easily repaired.
9. Be constructed strongly enough to resist normal wear and shock, and withstand long use with a minimum of maintenance. The guard should not itself present hazards, such as splinters, pinch point, shear points, sharp corners, or rough edges.

Flame-cutting, Welding, and Soldering

The following standards will prevail in the use of acetylene torches for flame-cutting and welding:

1. Acetylene gas tanks will be capped at all times when not in use. They will be stored upright and secured with a chain or other form of holding device. They will be kept from heat and flame, in a space designed for flammable gas storage. Never store with oxidizing gases.

2. Flame-cutting and welding will be accomplished in maintenance areas. If it is vital that such work be done elsewhere in the facility, adjacent areas and their equipment (pipelines, combustible structural materials, etc.) must be properly inspected beforehand. **SMOKING will be prohibited** in areas where acetylene gas tanks or flammable liquids are located. A fire watch with a portable fire extinguisher will be on scene as needed.
3. Personnel will wear proper personal protective equipment, including gloves, hoods, goggles, and aprons. Also, they will wear proper shoes with trousers secured outside them to prevent molten material from falling into the shoes.
4. Adequate screening and warning devices will be set up to prevent eye injuries to workers nearby.
5. Before welding is done on containers of flammable liquids or on empty containers that previously contained flammable liquids, the containers will be thoroughly decontaminated.
6. It is hazardous to flame-out sanitary risers used for flammable liquids. If cutting is required, personnel should flush the risers with water, restrict their use during the cutting period, and perform an explosive meter test prior to the cutting operation. If doubt exists, work should be delayed or the system should be purged with nitrogen.

Painting and Spraying

1. A "NO SMOKING" rule must be enforced in paint and wood shops and other locations where paint, thinners, lacquers, and turpentine are used or stored.
2. Proper and adequate fire extinguishers must be available in the paint shop.
3. All lacquers and thinners should be kept only in safety cans approved by UL. They will be stored in accordance with state and local fire codes.
4. Adequate personal protective equipment (face masks, goggles, gloves, etc.) will be worn by maintenance personnel when they spray paint. Tools should be nonferrous and non-sparking.

Electrical Safety

1. Before machinery is worked on, the electrical controls will be de-energized, tagged and locked. Tags and one-key locks should be removed only by the person who originated their use.
2. Electricians will not repair, service, or perform any operations on energized electrical lines or equipment except for these purposes or under these conditions:
 - a. Line voltage and current tests with suitable instruments.
 - b. Cutting of power lines when they present an immediate hazard to life.

- c. Replacement of fuses in circuits of 150 volts or less. Only journeymen electricians should replace higher-rated fuses.
 - d. After a determination that power cannot be interrupted, work on circuits of more than 440 volts should be performed by a public utility contractor; work on circuits of 440 volts or less may be performed by a qualified installation electrician and a helper.
 - e. If the voltage adjacent to equipment being worked on exceeds 250 volts, two or more electricians should be present.
 - f. If it is necessary to switch off high voltage circuit breakers or disconnect switches or other equipment to clear a supply apparatus, two qualified electricians should be present while switching is in progress.
3. All electrical workers will be trained in artificial respiration techniques.
 4. Panel board circuit identification directories will be kept current.
 5. The wattage rating for lamps will be limited to the design value. Bulbs extending past the rim of the reflector present hazards of burns, fire and shattering glass.
 6. Safe electrical equipment must be provided. Where permanent operations are to be performed an outlet will be installed directly at the site.

Boiler and Mechanical Rooms

Boilers can be operated efficiently and safely for many years, but only if the accepted rules of safety are followed; only if the boiler and piping system is kept in proper operating condition through regularly scheduled inspections, proper maintenance, and repair. A boiler will not be placed in service until an operating certificate has been obtained from the governing authority.

1. There will be ample room for proper maintenance and for any expansion required by additions to the facility.
2. Lighting will be ample for reading of the water column, pressure gauges, valves, etc.
3. Two or more exits should be provided, one at either end of the boiler. Exit doors will always be opened outward.
4. Stacks, whether of bricks, concrete or steel, should be equipped with grounded lightning arrestors. Never will a stack be mounted directly on the boiler.
5. Boiler safety valves must be set in accordance with the code specifications of the American Society of Mechanical Engineers.
6. Glass on water gauges would have guards if not made from safety glasses.
7. Boiler blow down in service should be accomplished in accordance with chemical water treatment service.

