

**South Central Louisiana Technical College
YOUNG MEMORIAL CAMPUS**



**900 Youngs Road
Morgan City, LA 70380**

**EQUIPMENT
MANAGEMENT PROGRAM**

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Management Policy Statement

Regional

The measure of effectiveness of a comprehensive safety program relies heavily upon the administrative support directed toward education, implementation, and enforcement. Since the goal of a training oriented educational institute is to prepare individuals to enter the labor market, an essential element of this training must be development of safe working habits. This can only be accomplished by establishing a systematic deliberate approach toward safety facilitated by a written plan that delineates policies and procedures regarding safety.

The welfare of both students and employees is a prime consideration. Emphasis on following approved safety procedures will be followed and “short cut” or time expedient practices that abridge established safety procedures will be avoided. The total working environment will be continuously evaluated in an effort to reduce the possibility of accidents. The director and an appointed safety committee evaluate the region’s safety plan on an annual basis. The administration, staff, instructors, and students of South Central Louisiana Technical College must actively participate in and adhere to safety rules and regulations.



Earl W. Meador, J.D.
Regional Director

Program Goal

The primary goal of an equipment management program is to ultimately decrease repairs to equipment by increasing the efficiency in managing the scheduled equipment maintenance. Young Memorial SCLTC is committed to a continuing, aggressive program for maintenance of mechanical and electrical equipment at all levels.

An effective program will reduce loss of equipment, decrease operational down time and extend the life of State mechanical and electrical and other equipment. The size, nature and complexity of an operation dictate certain maintenance requirements. All systems shall be monitored so that temperature, humidity, plumbing, lighting, air quality, emergency, and safety equipment are maintained at an acceptable level.

Agency Maintenance Policies and Procedures

Responsibilities

Campus Administrator

The Campus Administrator is ultimately responsible for safety in the school. This responsibility is demonstrated by the administration of responsibilities needed to maintain the various components of an equipment management program. The Campus Administrator fully supports a safe facility and work environment. This is shown through emphasizing that safety and teaching go together, setting a good example for the staff, attending safety meetings, reviewing accident reports, and motivating employees toward safe work practices.

Safety Coordinator

1. Develop and administer the equipment management program:
 - a. Designing a complete program.
 - b. Stimulating and coordinating the work of others.
 - c. Taking the lead in setting up safety regulations.
2. Prepare reports on the current safety experience of the school, and justify safety measures.
3. Act as an advisor on other safety matters.
4. Publicize safety materials.
5. Verify school compliance with federal, state, and local regulations regarding work safety and health.
6. Act as an aid in all aspects of safety training.

Maintenance Director

1. Due Preventative Maintenance on all equipment as scheduled.
2. Notify proper authorities (Safety Coordinator, Campus Administrator, Regional Director, or etc.) of safety and/or maintenance issues.
3. Maintain equipment lists for campus.
4. Maintain records on all maintenance and repairs of equipment. This is to contain the following:
 - a. What work was performed on the equipment
 - b. Who performed the work
 - c. How long did it take to perform

- d. What replacement parts were used and their cost
 - e. Whether the work was billed to a tenant
 - f. If the agency is using a contractor to perform preventive maintenance, repairs, testing, etc., the agency shall require the contractor to provide clear, concise documentation of the work performed
 - g. Date work was performed/completed
5. Attend training as needed to maintain skills for PM schedules.

Specific Inventory

A specific inventory of all mechanical and electrical equipment in the maintenance program must be maintained. It is to include the name, location, model number and the serial number of the equipment.

Preventive Maintenance Procedures

Package A/C, Wall Mount, and Split-system

1. Lock out and tag out equipment prior to servicing and/or maintaining equipment. Follow guidelines given under the LO/TO Program.
2. Minimal PPE is to include: gloves and safety glasses
3. Do a visual inspection of unit prior to working on system. Visually observe the system for signs of oil. Oil residue is a key signal for a refrigerant leak.
4. Visually inspect the return air filter. Replace if dirty.
5. Visually inspect evaporator and condenser coils. If dirty, clean with approved coil cleaner. Rinse coil thoroughly with water. Do not leave any residue of coil cleaner. *A lot of cleaners are either acidic or alkaline.*
6. If applicable check belt tension. You should have approximately 1" of play either way; a total of 2" of belt play.
7. Grease any fittings on blower housing/air handler.
8. Do a visual inspection of all wires and contactors. If contacts are pitted, replace contactors.
9. Re-energize unit. Read voltage across contacts with the unit running (contacts closed). If a measurable voltage (>2 volts) is read, contacts are faulty; replace the contact/contactors.
10. Check incoming voltage for proper voltage. Voltage must be within 10% of nameplate rating.
11. Read current draw of compressor. Check to see if it is within manufacturer's specifications. If not correct voltage problem.
12. Check system charge according to manufacturer's specifications; either subcooling, superheat, or sight glass.

Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one (1) hour.

Window Unit

1. Minimal PPE is to include: gloves and safety glasses.
2. Disconnect power.
3. Visually inspect the return air filter. Rinse with water if dirty.
4. Visually inspect evaporator and condenser coils. If dirty, clean with approved coil cleaner. Rinse coil thoroughly with water. Do not leave any residue of coil cleaner. *A lot of cleaners are either acidic or alkaline.* If evaporator or condenser coil must be cleaned, remove window unit from casing and clean in appropriate place. Make sure that electrical components do not become wet. Cover with bag or some other item to prevent water saturation.
5. Replace window unit and provide power. Check the temperature between the return and supply air. The difference should be between 18-20 degree s. Check unit for proper operation.
6. If unit is freezing up or improperly operating, remove and get repaired/replaced.

Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one (1) hour.

Air Compressor

1. Lock out and tag out equipment prior to servicing and/or maintaining equipment. Follow guidelines given under the LO/TO Program.
2. Minimal PPE is to include: gloves and safety glasses
3. Do a visual inspection of unit prior to working on system. Visually observe the system for signs of oil. Oil residue is a key signal for a leak.
4. Visually inspect the air filter. Replace if dirty.
5. If applicable check belt tension. You should have approximately 1” of play either way; a total of 2” of belt play.
6. Do a visual inspection of all wires and contactors. If contacts are pitted, replace contactors.
7. Inspect compressor oil. If sludge or moisture is present in oil change with approved compressor oil. Compressor oil should be changed minimally once a year.
8. Re-energize unit. Read voltage across contacts with the unit running (contacts closed). If a measurable voltage (>2 volts) is read, contacts are faulty; replace the contact/contact.
9. Check incoming voltage for proper voltage. Voltage must be within 10% of nameplate rating.
10. Read current draw of compressor motor. Check to see if it is within manufacturer’s specifications. If not correct voltage problem.
11. Drain condensate from bottom of tank. This should be done daily.
12. With system pressurized, check for leaks. This may be done by listening for unusual noises.

Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one (1) hour.

Ventilation Fans

1. Lock out and tag out equipment prior to servicing and/or maintaining equipment. Follow guidelines given under the LO/TO Program.
2. Minimal PPE is to include: gloves and safety glasses.
3. Do a visual inspection of unit prior to working on system. Visually inspect integrity of fan blades, rivets and overall construction of ventilation fans.
4. Check for any wear on belts, bearings and shafts.
5. If applicable check belt tension. You should have approximately 1” of play either way; a total of 2” of belt play.
6. Grease any fittings on bearings.
7. Clean any obstructive material from blades.
8. Re-energize unit. Read voltage across contacts with the unit running (contacts closed). If a measurable voltage (>2 volts) is read, contacts are faulty; replace the contact/contact.
9. Check incoming voltage for proper voltage. Voltage must be within 10% of nameplate rating.
10. Read current draw of compressor motor. Check to see if it is within manufacturer’s specifications. If not correct voltage problem.

Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one (1) hour.

Water Heater

1. Lock out and tag out equipment prior to servicing and/or maintaining equipment. Follow guidelines given under the LO/TO Program.
2. Minimal PPE is to include: gloves and safety glasses.
3. Do a visual inspection of unit prior to working on system. Inspect the integrity of the water heater by looking for water leaks, rust and etc.
4. If the unit is an electrical hot water heater, measure resistance of heating elements. If resistance is a reading of infinity, then replace element.
5. Flush vessel annually. This is to assist in preventing scale buildup.
6. Test safety valve (also called pop off valve) by manually opening it.
7. On gas fired heaters, inspect the burner and controls for proper flame setting.
8. Inspect the integrity of the flue pipe.

Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one (1) hour.

Electric Panels

1. Lock out and tag out equipment prior to servicing and/or maintaining equipment. Follow guidelines given under the LO/TO Program.
2. Minimal PPE is to include: gloves and safety glasses.
3. Visually observe panel for hot spots; look for burnt wire, discolorization, cracking, loose connections, and etc.
4. Use an IR thermometer to measure for hot spots.
5. Look for signs of moisture.
6. Make sure the panel is free of dirt and dust; dirt and dust allow heat buildup as they work as an insulator.
7. Check the breaker for proper operation and switching action.
8. Restore power to the panel.
9. Trade skills required for these maintenance procedures include: proficiency in electricity, knowledge of LO/TO, Mechanical aptitude, and training in PM procedures. Estimated time for completion is one half (1/2) hour.

Preventive Maintenance Schedule

See appendix for the Preventive Maintenance Schedule

Testing Procedures

Resistance Testing

Resistance testing is done on the electrical elements of the hot water heater elements. An ohm meter is to be used for this procedure. With the unit disconnected and following proper LO/TO, disconnect all wires from the element. It is important to label the wires for reattachment. Turn the ohm meter to the auto function. Touch the two probe leads together. The meter should read near 1 ohm of resistance. This is a test for operation of the meter. If meter is reading correctly, continue the testing process. Place the probe on one side of the element (at the wire terminal) and the other probe on the opposite wire terminal of the element. Read the resistance from the meter. Any reading besides infinity (usually O.L. on a digital meter) indicates an open element. Drain the tank and replace the element if bad. Reconnect the wires to the proper terminals. Restore power to heater.

GFCI Breaker Testing

GFCI Breaker test should be done on all breakers when conducting PM schedules on electrical panels. The maintenance personnel should depress the test button on breaker. The breaker should trip. Manually reset the breaker switch by turning off then on. Power should be restored to breaker.

Documentation

Young Memorial SCLTC shall document its preventive maintenance and/or repair procedures, schedules, and testing procedures performed on the mechanical and electrical equipment. The agency shall use a non-handwritten method of documentation, including computer-based programs. (Tables or other forms of checklists developed in Microsoft Word, Excel, or equivalent would be an acceptable alternative). Handwritten notations deemed unreadable by the Loss Prevention Officer will require clarification. The documentation provides the agency with an equipment history and the following shall be included, if applicable:

1. What work was performed on the equipment
2. Who performed the work
3. How long did it take to perform
4. What replacement parts were used and their cost
5. Whether the work was billed to a tenant
6. If the agency is using a contractor to perform preventive maintenance, repairs, testing, etc., the agency shall require the contractor to provide clear, concise documentation of the work performed
7. Date work was performed/completed

Training

Young Memorial SCLTC shall provide documented training for all employees trained in areas related to the program, whether formal or on-the-job training, to include training on:

1. the written Equipment Management Program
2. the operation of equipment included in the program
3. the preventive maintenance of the equipment included in the program
4. the testing procedures for equipment and the operation of testing

Audits and Record Keeping

The Loss Prevention Unit shall, upon request, assist agencies in reviewing and analyzing their equipment management maintenance program to determine if it is properly designed to have the intended impact. Records will be maintained for the life of the equipment on all program equipment including, but not limited to: preventive maintenance schedules, testing results, repair documents, replacement documents and all completed service documents. The documentation may be listed on the work order comments if using a computer based Maintenance Management program designed specifically for maintenance management such as work orders, inventory, preventive maintenance and time management. Loss Prevention Audits shall be conducted on the program every three years. Recertification/Compliance reviews shall be conducted in subsequent years.

Personal Protective Equipment (PPE)

PPE Provision

All personal protective equipment used at this facility will be provided without cost to employees. Personal protective equipment will be chosen based on the anticipated exposure to blood or to other potentially infectious materials. The protective equipment will be considered appropriate only if it does not permit blood or other potentially infectious materials to pass through or to reach the employee's clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used. (Indicate how clothing will be provided to an employee, e.g., who has responsibility for distribution. You could also list which procedures would require the protective clothing and the recommended type of protection required. This could also be listed as an appendix to this program).

PPE Use

The Campus Administrator and/or Safety Coordinator shall insure that employees use appropriate PPE unless the employee declines to use PPE under certain circumstances. For example, if in the employee's judgment the use of PPE would prevent the delivery of health care or pose an increased hazard to the safety of the employee, he or she may choose to decline the use of PPE. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

PPE Accessibility

The Campus Administrator and/or Safety Coordinator shall insure that appropriate PPE in the appropriate sizes is readily accessible at the work site and is issued without cost to employees. Hypoallergenic gloves, glove liners, powder less gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided. If any employee does not have appropriate PPE, he/she can request necessary PPE with a purchase requisition. The purchase requisition is to be turned into the Campus Administrator and/or Safety Coordinator.

PPE Cleaning, Laundering and Disposal

All personal protective equipment will be cleaned, laundered, and disposed of by the employer at no cost to the employees. All repairs and replacements will be made by the employer at no cost to employees. All garments, which are penetrated by blood, shall be removed immediately or as soon as feasible. All PPE will be removed prior to leaving the work area.

When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

Gloves

Gloves shall be worn when it is reasonably anticipated that employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes; when performing vascular access procedures; and when handling or touching contaminated items or surfaces.

Disposable gloves used at this facility are not to be washed or decontaminated for reuse and are to be replaced as soon as practical when they become contaminated or as soon as feasible if they are torn, punctured, or their ability to function as a barrier is compromised. Utility gloves may be decontaminated for reuse provided that the integrity of the glove is not compromised. Utility gloves will be discarded if they are cracked, peeling, torn, punctured, or exhibits other signs of deterioration or when their ability to function as a barrier is compromised.

Eye and Face Protection

Masks in combination with eye protection devices, such as goggles or glasses with solid side shield or chin-length face shields, are required to be worn whenever splashes, spray platter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can reasonably be anticipated.

Additional Protection

Additional protective clothing (such as lab coats, gowns, aprons, clinic jackets, or similar outer garments) shall be worn in instances when gross contamination can reasonably be anticipated (such as autopsies and orthopedic surgery). The following situations require that such protective clothing be utilized:

Work Order System

Each agency location shall have documented work order system procedures that address scheduled preventive maintenance and/or repairs. The procedures should include reporting, work orders

issuance/assigning, and how the agency is ensuring the work is completed and documented. (Tables or other forms of checklists developed in Microsoft Word, Excel, or equivalent would be an acceptable alternative). Handwritten notations deemed unreadable by the Loss Prevention Officer will require clarification. All employees shall be informed on the work order procedure for reporting problems. Documentation shall be available for audit review.

It is recommended that documentation of completed work orders be maintained for the life of the equipment and available for review upon request.

Equipment Listing/Schedules

The following is a list of equipment:

Water Heaters 4

Pressure Vessels 2

Air Conditioning Units (window units/heat pumps) 23

Large Air Conditioning Units 9

Compressors 2

Ventilation Fans 15

Electric Panels 25

Preventive Maintenance Schedules

Water Heater

- A. Monthly
 - 1. Visually check pressure temperature relief valve for proper spring action and disk seating.
 - 2. Check for leaks at all seams on the outer casing, around the bottom, and all plumbing connections.
 - 3. Check the operation of the safety valve(s) by manually opening it.
- B. Annually
 - 1. Inspect the burner and burner controls for proper flame setting (gas fuel).
 - 2. Flush the vessel and check for evidence of mineral deposits.
 - 3. Check the resistance of the heating elements on electric water heaters. An infinite resistance indicates that the element is burned out and needs to be replaced.

Pressure Vessels

- A. General
 - 1. Pressure vessels are generally designed and fabricated for a specific service and should be used in accordance with the manufacturer's suggested operating and maintenance procedures. Pressure, temperature, corrosion and cracking should be continuously monitored.
 - 2. This section includes air receivers, heat exchangers, etc.
 - 3. Repair and clean as needed based on previous records and inspection.
 - 4. Periodic thickness checks should be conducted where there is a possibility of corrosion or erosion.
- B. Weekly
 - 1. Observe physical condition.
 - 2. Where applicable, drain condensate.
 - 3. Where applicable, inspect and record operating valves and controls.
- C. Monthly: Test safety devices.
- D. Annually: Test and calibrate all controls.

Air Conditioning Systems

- A. During Off Season or Maintenance Shutdown (most systems run all year)
 - 1. Make a thorough inspection for leaks and repair if necessary. The most likely places are around the cooler ruptured disc or relief valve, the cooler condenser expansion joint, suction, damper seal, low refrigerant cutout bulb in the cooler, and valves, flare and gauge connections in the purge.
 - 2. Make a leak test and an operational test.
 - 3. Inspect electric dryers. Check starter contacts for burning and replace if necessary. Check for loose connections and starter operation.
 - 4. Clean motors of foreign material. On variable speed motors, inspect the drum controller for smooth operation. Check the resistance element for loose connections.
 - 5. Check operation and setting of all safety controls. This includes condenser high pressure cutout, low refrigerant temperatures cutout, and low oil pressure switch. Inspect and clean all thermostats, hydrostats and relays. Check for proper calibration.
- B. Bi-annually
 - 1. Clean or replace filters
 - 2. Perform shutdown and startup inspections on condensers and check frequently for excess noise or vibration.

- C. Annually
 - 1. Check water quality of chiller system for treatment.

Electric Panels

Conduct periodic visual inspection for discoloration of wiring, loose connections and cleanliness.

- A. Monthly: Examine indoor enclosures for signs of moisture or water.
- B. Annually (Environmental or operational conditions may warrant more frequent inspections.)
 - 1. Keep interior clean and free of any dust or accumulation of foreign materials.
 - 2. Visually inspect electric system for hot spots.
- C. All wiring: Infrared scanning is required once every five (5) years to detect hot spots, loose connections, overloaded circuits, etc. Agencies without the proper testing equipment shall have the tests conducted by an outside contractor. If loose connections are found, repairs must be made to rectify the hot spot.

Transformers

- A. General
 - 1. A Direct Current (D.C.) high potential test should be scheduled whenever internal trouble is suspected.
 - 2. If a transformer has handled severe overloads or there is indication of internal trouble, it should be inspected as soon as possible.
- B. Annually
 - 1. Investigate the cause of unusual noise.
 - 2. Check the ampere load on important transformers if changes have been made in power consumption.
 - 3. Clean dirt and dust from exterior.
 - 4. Check breather for any restrictions.
 - 5. Check protective alarms such as temperature indicators.

Louisiana Preventive Maintenance Program

(Revised January 2000)

Funds are appropriated from the Legislature for the continuation of the State's Mechanical and Electrical Preventive Maintenance Program. To apply for funds for internal inspection repairs, replacement and/or overhaul of boiler/machinery and air conditioning equipment owned by the State:

- 1. To be eligible for funds, you must have a written Loss Prevention Maintenance Program for all mechanical and electrical equipment that will contain the history of each piece of equipment, and will include maintenance responsibilities, when maintenance is to be performed, and how records will be maintained. This program must be audited and found to be in compliance by the Office of Risk Management (ORM).
- 2. A written request shall be submitted to the assigned Loss Prevention Officer, who will forward his recommended concurrence/non-concurrence to the Loss Prevention Unit Manager, Office of Risk Management, stating the amount of funding needed for each piece of equipment. Each request shall refer to each piece of equipment by location, manufacturer's name, model and serial number. Three bids must accompany the request.
- 3. A statement from the Agency Head must also be included stating no funds are available within the agency budget to perform the necessary repairs.
- 4. An inspection of the equipment may be made by engineers of the Mechanical and Electrical Insurer for the State and/or by an ORM Loss Prevention Officer.
- 5. Contract price from factory representative or low bidder to perform operation necessary to effect an inspection must not exceed \$1,500.00.
- 6. After receiving approval from FP&C, coordinate all future activities with FP&C.

Lockout/Tagout Policy

1.0 Policy

1.1 It is the policy of South Central Louisiana Technical College, Young Memorial Campus, that any individual engaging in the maintenance, repairing, cleaning, servicing, or adjusting of prime movers, machinery, or equipment on department/agency property will abide by the procedures outlined in this document and specific procedures outlined in the South Central Louisiana Technical College, Young Memorial Campus Equipment Management Program.

1.2 Lockout is a first means of protection; warning tags only supplement the use of locks. Tags alone may be used only when the application of a lock is not feasible and with approval of the appropriate supervisor (provided the employer complies with the provisions of the standard that requires additional training and more rigorous periodic inspections).

2.0 Purpose

To ensure that all individuals are protected from accidental or unexpected activation of mechanical and/or electrical equipment during maintenance, repairing, cleaning, servicing, or adjusting said equipment.

3.0 Definitions

3.1 Lockout

The practice of using keyed or combination security devices ("locks") to prevent the activation of mechanical or electrical equipment.

3.2 Tagout

- a. The practice of using tags in conjunction with locks to increase the visibility and awareness that equipment is not to be energized or activated until such tags are removed.
- b. Tagout devices will be of the non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds.

3.3 Activation/Energization

To set machinery into motion by starting, switching, pushing, moving, or otherwise engaging power sources for such equipment. To provide a flow of electricity or complete a circuit that is the main power source for the machinery/equipment.

3.4 Energy Control Procedures

Use of lockout/tagout equipment to ensure safe work practices.

3.5 Hazardous Motion

Motion of equipment under mechanical stress or gravity that may abruptly release and cause injury. Hazardous motion may result even after power sources are disconnected. Examples are coiled springs or raised hydraulic equipment.

3.6 Prime Mover:

Power driven machinery and equipment.

4.0 Responsibilities

4.1 Department Head or Qualified Designee

- a. Provide training to authorized/affected employees on lockout/tagout procedures.
- b. Inspect energy control procedures and practices at least annually to ensure that general and specific lockout/tagout procedures are being followed.
 - i. Inspections must be carried out by persons other than those employees directly utilizing energy control procedures.
 - ii. Inspections will include a review of each authorized employee's responsibilities.

- iii. Certify that periodic inspections have been performed(See: LOCKOUT/TAGOUT INSPECTION FORM)
- c. Maintain a record of equipment, machinery, and operations that require the use of lockout/tagout procedures. The record will include the location, description, power source, and primary hazards of equipment/machinery, a list of the primary operators/maintenance personnel, and a list of lockout/tagout equipment that is used and maintained on site.

4.2 Department Head or Qualified Designee

Ensures that each supervisor adheres to procedures.

4.3 Supervisors

- a. Ensure that all employees and all contractor/vendor employees engaging in work requiring locking/tagging out of energy sources understand and adhere to adopted procedures.
- b. Ensure that employees have received training in energy control procedures prior to operating the machinery/equipment.
- c. Provide and maintain necessary equipment and resources, including accident prevention signs, tags, padlocks, and seals.
- d. Where applicable, incorporate operation specific lockout/tagout procedures into the department/agency Equipment Management Program.
- e. Notify the designated individual(s) of new or revised equipment, machinery, or operations that require the use of lockout/tagout devices during servicing, maintenance, or repair.

4.4 Employees

- a. Adhere to Specific Procedures outlined in this document for all tasks that require the use of lockout/tagout procedures.
- b. Maintain lockout/tagout supplies in maintenance vehicles.

5.0 Specific Procedures

The following lockout/tagout procedure is for the Young Memorial Campus.

5.1 Preparation for Lockout/Tagout

Conduct a survey to locate and identify all isolating devices to determine which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, stored energy, or others) may be involved.

5.2 Sequence of Lockout/Tagout System Procedure

- a. Notify affected employees that a lockout or tagout system is going to be utilized and the reason why. The authorized employee shall know the type and magnitude of energy that the machine/equipment utilizes and shall understand the hazards thereof.
- b. If the machine/equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
- c. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
- d. Lockout/Tagout the energy isolating devices with assigned individual lock(s) or tag(s). No copies of keys shall be made or distributed.
- e. After ensuring that no personnel are exposed, verify the energy sources have been disconnected. Operate the push button or other normal operating controls to make certain the equipment will not operate. CAUTION: Return operating control(s) to neutral or off position after the test.
- f. The equipment is now locked out or tagged out.

5.3 Restoring Machines or Equipment to Normal Operations

- a. After the servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.
- b. After all tools have been removed from the machine or equipment, guards have been reinstalled, and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the machine or equipment.

5.4 Procedure Involving More Than One Person

In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his/her own personal lockout/tagout device on the energy isolating device(s). When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If lockout is used, a single lock may be used to lockout the machine or equipment (with the key being placed in a lockout box or cabinet that allows the use of multiple locks to secure it). Each employee will then use his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his or her lockout protection, that person will remove his/her lock from the box or cabinet.

5.5 Temporary Removal of Lockout/Tagout Devices

In situations where lockout/tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions will be followed:

- a. Remove non-essential items and ensure that machine or equipment components are operationally intact.
- b. Notify affected employees that lockout/tagout devices have been removed and ensure that all employees have been safely positioned or removed from the area.
- c. Have employees who applied the lockout/tagout devices remove them. Energize and proceed with testing or positioning.
- d. De-energize all systems and reapply energy control measures in accordance with section 5.2 of these procedures.

5.6 Maintenance Requiring Undisrupted Energy Supply

Where maintenance, repairing, cleaning, servicing, adjusting, or setting up operations cannot be accomplished with the prime mover or energy source disconnected, such operations may only be performed under the following conditions:

- a. The operating station (e.g. external control panel) where the machine may be activated must be under the control of a qualified operator at all times.
- b. All participants must be in clear view of the operator or in positive communication with each other.
- c. All participants must be beyond the reach of machine elements that may move rapidly and present a hazard.
- d. Where machine configuration or size requires that the operator leave the control station to install tools, and where there are machine elements that may move rapidly if activated, such elements must be separately locked out.
- e. During repair procedures where mechanical components are being adjusted or replaced, the machine shall be de-energized or disconnected from its power source.

6.0 Employee Training

Authorized employees shall receive annual lockout/tagout training from a qualified individual. Affected employees shall receive awareness level training every three (3) years.

7.0 Recordkeeping

7.1 Inspection Records

The maintenance unit supervisor will maintain inspection records in accordance with 4.1 B of this document, as well as complete and maintain all LOCKOUT/TAGOUT INSPECTION FORMS

7.2 Training Records

Training records will be maintained and include an outline of topics covered and a sign in sheet of those employees attending.

Appendix

SAMPLE LOCKOUT/TAGOUT INSPECTION FORM

1. Inspection Date: _____

2. Inspector (Printed Name/Signature): _____ / _____

3. Employee(s) Inspected

(Printed/Signature): _____ / _____

_____ / _____

_____ / _____

_____ / _____

4. Machine/equipment on which the energy control procedure was being utilized:

Item: Yes No

Does employee have access to adequate lockout/tagout devices? Yes No

Has employee tested the effectiveness of his/her lockout/tagout devices? Yes No

Has employee received lockout/tagout training in the last year? Yes No

If this is an outside contractor, has a supervisor informed him/her of the necessity for adhering to these procedures? Yes No

Have all procedures been followed? Yes No

Were tagouts legible and clearly displayed? Yes No

Notes: