LOCKOUT/TAGOUT
Policy & Procedure
I. PURPOSE

This procedure establishes the Wayne State University requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on systems or equipment. It shall be used to ensure that the system or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization, start-up, or release of stored energy could cause injury.

Note: This policy does not apply to work on cord and plug connected electric equipment when unplugged, no remaining hazard exists and the plug is under exclusive control of the employee performing the work.

II. DEFINITIONS

Affected employee: An employee whose job requires him/her to operate or use a system or equipment which requires locking-out or tagging-out during servicing or maintenance, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee: A person who locks out or tags out a system or equipment in order to perform repairs/maintenance. An affected employee becomes an authorized employee when that employee's duties include performing service or maintenance covered under this section.

Lockout: The placement of a lockout device on an energy isolation device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device: Best™ padlock, with identification, specially designed for equipment system lockout, to hold an energy isolating device in a safe position and prevent the energizing of a system or equipment.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout device: A device used when a lockout device will not isolate an energy source. The tagout device identifies the Authorized Employee and the nature of the work and is attached with a self locking, non-releasable nylon cable tie substantial enough to prevent inadvertent or accidental removal.

Group lockout device: A lockout device that accepts multiple padlocks used when more than one worker needs to lock out a system or equipment energy source.
Note: Tags are essentially warning devices affixed to energy isolation devices, and do not provide the physical restraint that is provided by a lock. They are to be used only when locks are not feasible for isolating the energy source. Consult with your team leader before using tags.

- When a tag is attached to an energy isolating device, it is not be removed unless done so by the authorized person who placed it there, and it is never bypassed, ignored or otherwise defeated.
- Tags must be legible and understandable to all employees.
- Tags and their means of attachment must withstand the environmental conditions of the workplace.
- Tags may promote a false sense of security, and their meaning needs to be understood.
- Tags must be securely attached to energy isolating devices so they cannot be accidentally detached during use.

III. OVERVIEW

In order to provide a safe working environment for all FP&M employees and the University community, the following general lockout/tagout policies apply to all FP&M operations:

A. All FP&M employees will use proper lockout/tagout procedures when operating, maintaining, servicing or repairing equipment. Maintenance or repairs will not start until all sources of energy have been properly locked out and appropriately tagged. Employees will notify the Building Engineer before locking-out or tagging-out any equipment.

B. Lockout locks and tags will be used only for lockout/tagout of equipment or to warn of hazardous conditions. They will not be used for any other purpose.

C. Lockout locks and tags will not be removed until the equipment and the surrounding area has been returned to a safe operating condition.

D. Employees will return all equipment to a safe operating condition and remove all lockout locks and tags prior to departing the job site. An employee must notify the Building Operating Engineer and the appropriate Supervisor/Manager before leaving equipment locked/tagged out when departing the job site.

E. Employees will personally remove their own lockout locks and tags. Employees will not remove another employee's or a contractor's lockout lock and tag except as outlined in Section VI (Emergency restoration procedure; when authorized employee is not available).

F. Building Engineers, and all skilled trade workers (Carpenters, Electricians, Painters, Handymen, Plumbers, Pipefitters, Plasterer, Roofers and Sheet Metal workers) will be issued one lockout lock and tag. Note: All electricians will be issued two lockout locks and tags.

G. All new equipment will be installed with an appropriate lockout device. Further, appropriate lockout devices will be installed whenever existing equipment undergoes major renovation, modification or repair, or is replaced. The lockout device will be installed in a location clearly visible to an individual repairing, maintaining, or operating the equipment.
IV. FP&M MANAGEMENT RESPONSIBILITIES

A. Enforce the compliance with this procedure to all affected and authorized employees.

B. Each FP&M director shall designate a safety representative to coordinate with the Office of Environmental Health & Safety (OEH&S) to do the following:
   1. Train all authorized employees who are required to lockout/tagout system or equipment while performing service or maintenance.
   2. Coordinate with OEH&S to retrain authorized employees whenever there is a change in energy control procedures.
   3. Develop specific written methods any specialized lockout methods.

C. Maintain documentation to indicate which authorized employees have been issued locks, hasps, and tags.

D. Maintain a lockout/tagout log to inform employees on other shifts why locks have been attached.

V. FP&M EMPLOYEE RESPONSIBILITIES

A. Comply with all FP&M Lockout/Tagout procedures.

B. Consult with a supervisor or other knowledgeable member of Facilities Planning and Management (FP&M) or OEH&S management whenever there are any questions regarding the application of lockout/tagout procedures.

C. Use safety locks/tags for personal protection, and use locks/tags only for system/equipment lockout purposes.

D. If you are unfamiliar with the equipment to be locked out, find someone knowledgeable to explain it to you. Talk to the equipment operator, supervising engineer, or anyone else who, by training and experience, has a good working knowledge of the operation that needs lockout.

E. Do not remove lockout/tagout devices or attempt to operate systems or equipment locked-out or tagged-out except as outlined in this policy.

F. Help with developing specific written lockout procedures
VI. PROCEDURES

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a system or piece of equipment which is locked out to perform servicing or maintenance, shall not attempt to start, energize or use that system or equipment.

**Note:** Exception: The employer need not document the required procedure for a particular machine or equipment, when *all* of the following elements exist:

1. The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
2. The machine or equipment has a single energy source which can be readily identified and isolated (i.e., a single circuit breaker is the only source of energy, or a cord and plug connected equipment which the plug is *not under exclusive control* of the worker);
3. The isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment;
4. The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
5. A single lockout device will achieve a locker-out condition;
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance (i.e., the equipment is unplugged and you have continuous eye contact with that plug);
7. The servicing or maintenance does not create hazards for other employees; and
8. The employer, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

**Lockout/tagout procedure** *(Use Appendix B to develop specific lockout/tagout procedures)*

1. Notify all affected employees that servicing or maintenance is required on a system or piece of equipment and that the system or equipment must be shut down and locked out to perform the servicing or maintenance.
2. The authorized employee shall identify the type and magnitude of the energy that the system or machine utilizes, understand the hazard(s) of the energy, and know the methods to control the energy.
3. If the system or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.).
4. De-activate the energy isolating device(s) so that the system or equipment is isolated from the energy source(s).
5. Lockout the energy isolating device(s) with assigned individual lock(s) and/or tag(s).
6. Dissipate or restrain stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) by methods such as grounding, repositioning, blocking, bleeding down, etc.

7. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the system will not operate.

Caution: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

8. The system or equipment is now locked out.

**Testing of repaired equipment**

1. Clear equipment/process of tools and material;
2. Clear personnel;
3. Clear the control of locks according to established procedure;
4. Test the operation of the repaired equipment; and
5. Turn off all operating controls, and re-lock and/or re-tag the controls to continue the work.

**Removing lockout/tagout, normal procedure** *(See Appendix B)*

When the servicing or maintenance is completed and the system or equipment is ready to return to normal operating condition, the following steps shall be taken:

1. Check the system or equipment and the immediate area to ensure that nonessential items have been removed and that the machine or system components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral
4. Remove the lockout/tagout devices and re-energize the system or equipment. Upon completion of the work, each authorized employee shall ensure all guards have been replaced and his/her own padlock/tag has been removed from the energy source.
5. Notify affected employees that the servicing or maintenance is completed and the system or equipment is ready for use.
6. Start up (reenergize) equipment

**Emergency restoration procedure when authorized employee is not available:**

In an emergency situation where restoration to service is necessary, the Supervising Engineer on duty must first be notified. The Supervisor first will make reasonable efforts to contact the authorized employee who installed the lockout/tagout device. If the authorized employee is not on campus and not available for information by telephone, the Supervisor may authorize restoring the system and/or equipment to service using the following procedure:
1. The Supervisor will make reasonable efforts to contact the authorized employee's Supervisor to learn of circumstances which required the lockout.

2. The system and/or equipment must be 100% visually inspected to assure that no employee is in a potentially hazardous location. If remote locations or open areas are involved, additional personnel will be station in these areas.

3. The Supervisor may now personally remove the lockout device using the master key provided and authorize restoring the system and/or equipment to service.

4. The Supervisor shall log the reasons and circumstances for the lockout removal and efforts made to notify the individual installed the lockout device.

5. The Supervisor shall assure that the authorized employee is notified upon return to campus the reason for the lockout/tagout device removal.

VII. SHIFT OR PERSONNEL CHANGES

FP&M will develop procedures to document and describe what to do during shift or personnel changes to ensure the continuity of lockout or tagout protection. This includes providing for the orderly transfer of lockout or tagout protection between off-going and oncoming employees.

VIII. GROUP LOCKOUTS/TAGOUTS

In situations where more than one authorized employee will be required to perform work on a system or equipment, a designated authorized employee assigned by FP&M shall physically install a group lockout device as well as a personal lockout device prior to the attachment of other locks/tags, and shall coordinate all activities for employee protection.

A scissors clip will be installed on the device to allow all authorized employees a place to lockout/tagout to protect themselves from accidental start-up or operation. Each employee working on energy sources or equipment operated by energy sources shall place a padlock and tag on the scissors clip. Each authorized employee retains his/her lockout key until the job has been completed and is responsible for personally removing his/her lockout/tagout device.

In situations where group lockouts could extend for several days, involving numerous employees or contractors, the one lock for each person rule is deviated from, providing the following conditions are met:

1. One authorized employee on each shift must be assigned the responsibility of ensuring that all energy sources are locked out.

2. Documentation to verify this procedure must be initiated.

3. All authorized employees or contractors must be individually accounted for prior to full or partial release of the lockout.
IX. CONTRACTORS

FP&M and the contractor will inform each other of their respective lockout/ tagout procedures. Contractors working within the University facility are required to make available, if appropriate, a written lockout/ tagout/ energy control program and ensure the protection of their employees, University employees and equipment. Contractors wanting access into equipment or working on systems shall contact FP&M to secure energy systems for safe access. FP&M management is responsible for coordinating contractor activities within University facilities. When both parties are working on machinery/equipment, multiple locks shall be used.

X. PERIODIC INSPECTIONS

FP&M supervisors and OEH&S will conduct formal inspections of the activities of University employees and/or contractors to ensure their understanding and compliance with the procedure. Any deviations or violations found during inspections shall be corrected immediately and documentation of this action maintained. Appendix A will be used to document these activities.

XI. TRAINING CONTENT

Training will be given to all authorized employees, department managers, and supervisors affected by this standard. This includes all employees engaged in maintenance/repair activities where the unexpected energization or start up of a machine/equipment, or the release of stored energy, could cause an injury.

The training program will cover the following topics:

A. Recognition and description of hazardous energy sources;
B. Understanding when and where to use lockout/tagout procedures;
C. Steps involved in a lockout/tagout procedure;
D. Procedures for restoring service after work has been completed;
E. Special procedures and emergency situations.

Employees who receive training will take a quiz at the end to ensure that they understand the lockout/tagout program, and they will be given a certificate to verify their training. Records of training and performance tests will be maintained in each employee’s files and by each manager and supervisor.

Retraining will be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard or when there’s a change in lockout/ tagout procedures. This retraining may be performed by either OEH&S or FP&M.
Appendix A

Lockout/Tagout/Energy Control Periodic Inspection Sheet

Location: ___________________________ Date: ___________________________

System/Equipment under maintenance: __________________________________________

Authorized Employee(s)

Name: ___________________________ Name: ___________________________

Trade: ___________________________ Trade: ___________________________

Types of energy being isolated (check all that apply):

☐ Electrical       ☐ Chemical       ☐ Hydraulic       ☐ Pneumatic

☐ Mechanical       ☐ Steam         ☐ Gas            ☐ Other: ___________________________

1. Has system/equipment being isolated had a formal hazard assessment to identify all sources of energies present?

☐ Yes       ☐ No

2. If system/equipment energy(s) cannot be controlled by a single source, are specific procedures posted?

☐ Yes       ☐ No

3. Has authorized employee(s) received training and shown satisfactory knowledge of procedure requirements?

☐ Yes       ☐ No

4. Have authorized employee(s) been issued locks, tags, and hasps?

☐ Yes       ☐ No

5. Did authorized employee(s) verify system/equipment energy(s) were isolated before conducting maintenance?

☐ Yes       ☐ No

Inspector's Signature: __________________________________________ Building: ___________________________
Appendix B

LOCKOUT PROCEDURE FOR:

(Name of Dept. & Shop for single procedure or identification of equipment if multiple procedures)

PURPOSE:
This procedure establishes the minimum requirement for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance when the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

COMPLIANCE:
- All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure.
- All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall NOT attempt to start, energize, or use that machine or equipment. Disciplinary policies for not complying with the University Lockout/Tagout Procedure will be enforced according to Human Resources/Employment Services protocol.

LOCKOUT SEQUENCE:
1) Notify all affected employees that the equipment/machine requires servicing or maintenance and that the equipment/machine must be shut down and locked out before the servicing or maintenance can begin.

(Job Titles of affected employees and how to notify.)

2) The authorized employee shall refer to this procedure to identify the type and magnitude of the energy that the machine/equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.

(Type(s) and magnitude(s) of energy, its hazards and method to control the energy.) Note: Types of energy sources include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, stored energy, and other specific hazards.

3) If the equipment or machine is operating, shut it down by its normal stopping procedure (i.e. depress the stop button, flip switch, close valve, etc.)

(Type(s) and location(s) of machine/equipment operating controls.)

4) Deactivate the energy isolating device(s) to isolate energy source(s) from the equipment or machine.

(Type(s) and location(s) of energy isolating devices.) Note: Types of energy isolating devices include circuit breaker, disconnect switch, line valve, block, or any similar device used to block or isolate energy.
5) Lock out the energy isolating device(s) with assigned individual lock(s). Note: Other types of lockout devices include valve covers, blank flanges, etc.

6) Stored or residual energy (i.e. capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be relieved, dissipated, or restrained by appropriate methods such as grounding, bleeding down, blocking, repositioning, etc.

(Type(s) or stored energy – method(s) to dissipate or restrain.)

7) Ensure that the equipment/machine is disconnected from the energy source(s) by first, checking that no personnel are exposed, then verify the isolation of the equipment/machine by operating the normal operating control(s), or by testing to make certain the equipment will not operate.

CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment or machine.

(Method of verifying the isolation of equipment.)

THE EQUIPMENT OR MACHINE IS NOW LOCKED OUT!

SEQUENCE FOR RESTORING EQUIPMENT OR MACHINE TO SERVICE.
After servicing or maintenance to equipment or machinery is completed, the following steps shall be taken to return it back to its normal operating condition.

1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

2) Check the surrounding work area to ensure that all employees have been safely positioned or removed from the area.

3) Verify that the controls are in the neutral or “off” position.

4) Remove the lockout devices.

NOTE: Removing some types of blocking may require re-energization of the machine before the lockout devices can be safely removed.

5) Notify all affected employees that the servicing or maintenance is completed and the equipment or machine is ready for operation.

6) Reenergize the equipment or machine.