

# ***LOCKOUT/TAGOUT POLICY***

*Risk Management and Safety, February 2003*

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## **I. PURPOSE**

This policy establishes the minimum requirements for safely isolating potentially hazardous energy sources. It shall be followed to ensure that machines or equipment are isolated from all potentially hazardous energy before employees perform service or maintenance activities where there may be an unexpected energization, start-up, or release of stored energy. Types of energy sources include electric, mechanical, pneumatic, chemical, thermal and hydraulic.

## **II. SCOPE**

The provisions set forth in this policy apply to all equipment and machinery at the University where potentially hazardous energy exists. All employees or contractors of the University who maintain or service such equipment and machinery are subject to the procedures outlined in the policy without exception. Failure to follow these procedures may result in disciplinary actions.

## **III. GENERAL REQUIREMENTS**

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked or tagged out. Authorized employees of the University will be issued locks and equipment on an individual basis and will be accountable for the equipment and appropriate usage.

Lockout is always the preferred method of isolating machines or equipment from energy sources. However, when equipment is not capable of being locked out, proper tags may be utilized with nylon/plastic lock-straps. The straps will be destroyed upon completion of the project and reactivation of the equipment.

## **IV. RESPONSIBILITIES**

### **A. Risk Management and Safety:**

1. Offer training to authorized employees.
2. Offer departments and authorized employees consultation on safe procedures and policy requirements.
3. Develop, maintain and review the Lockout/Tagout Policy and provide applicable

departments with updated copies.

4. Review energy isolation shut down and re-energizing procedures that have been developed and submitted by each department.

**B. Supervising Departments:**

1. Contact Risk Management and Safety when consultation is needed.
2. Ensure that their authorized employees follow safe lockout/tagout procedures that are consistent with this policy.
3. Identify employees who need lockout/tagout safety training, schedule the training and ensure that their employees are in attendance.
4. Develop and maintain safe shut down procedures on each piece of equipment or machine that their employees are expected to service or maintain. The shut down procedures should be reviewed by and approved by Risk Management and Safety (see part V). The procedures shall then be inserted into Appendix D of the department's copy of this policy.
5. Conduct annual reviews of their department's compliance with this policy (see part VII).
6. Notify affected employees of lockout/tag-out procedures that are going to take place in their work area.

**C. Authorized Employees:**

1. Attend training which is designed to instruct them on safe lockout or tagout procedures.
2. Comply with this policy and the specific shut down procedures which are outlined by the employee's department in Appendix D.
3. Notify their supervisor when they have any questions about isolating energy sources safely, have observed non-compliance activities or when problems are identified with equipment or lockout devices.

**D. Administrators Who Hire Or Oversee Contracted Projects:**

1. Communicate this policy to contractors of the University whose type of job necessitates performing lockout/tagout procedures.
2. Review shut down procedures that have been developed by contractors if shut down procedures have not been developed or are not available by the University.

3. Consult with Risk Management and Safety when questions arise about contractor applications and shut down procedures.
4. Attend lockout/tagout training so that they are familiar with University policy and procedures.

**E. Contractors And Subcontractors:**

1. Comply with all provisions of the University's Lockout/Tagout Policy. Copies of this policy will be provided by Risk Management and Safety upon request.
2. Ensure that his or her employees are appropriately trained and authorized.
3. Comply with any shut down procedures that have been developed by the University for each machine or piece of equipment that the contractor must service or maintain or other such project where energy sources are present. When shut down procedures are not available from the University, the contractor shall develop and provide the University with their own shut down procedures for that machine or piece of equipment or project. The shut down procedures shall be submitted for approval to the Facilities Operations contact or the departmental administrator responsible for the project.

**V. GUIDELINES FOR SHUT DOWN AND RE-ENERGIZING PROCEDURES**

Energy isolation shut-down and re-energizing procedures shall be established by each department who has employees that perform lockout and tagout duties. The procedures shall be established for all applicable machines or pieces of equipment or projects where energy isolation is required. The procedures shall be consistent with the following criteria and after being approved by Risk Management and Safety, shall be inserted into Appendix D of the particular department's copy of this policy.

**A. Preparation for Lockout/Tagout System Procedure**

The authorized employee will survey the area, identify all isolating devices and determine which switch(s), valve(s) or other energy isolating devices need to be locked or tagged out. The procedures shall be consistent with those developed by the authorized employee's department (see Appendix D). More than one energy source (electrical, mechanical, or others) may be involved. Always use a lock rather than a tag when possible to lock the energy source(s) out.

## **B. Sequence of Lockout/Tagout System Procedure**

1. The authorized employee will notify all affected employees that a lockout or tagout system is going to be utilized and the reason therefore. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and understand the hazards associated with it.
2. If the machine or equipment is operating, it will be shut down by the normal stopping procedure (depress stop button, close toggle switch, etc.).
3. The authorized employee will operate the switch, valve, or the energy isolating device(s) so that the equipment is isolated from its energy source(s).
4. All electrical equipment isolation will be verified with electrical meter testing. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, water pressure, etc) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.
5. Lockout or tagout the energy isolating devices with authorized and assigned individual lock(s) or tag(s). Additionally, all other safety methods or procedures shall be indicated on the standard lockout tag.
6. The authorized employee shall check to ensure that no personnel are exposed.
7. The authorized employee shall operate the switch or the normal operating controls to make certain that the equipment will not operate and ensure disconnections.
8. The authorized employee will then return operating controls to the “neutral” or “off” position after the test.
9. The equipment is now locked out or tagged out for servicing or maintenance.

## **C. Restoring Machines And Equipment To Normal Operations**

1. After the service or maintenance is complete and equipment is ready for normal

operations, the authorized employee will survey the area around the machines or equipment to ensure that no one is exposed.

2. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, the authorized employee may remove all lockout or tagout devices.
3. The authorized employee shall operate the energy isolating devices to restore energy to the machine or equipment.

#### **D. Procedures 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 lock or tag on the energy isolating control device(s). When an energy isolating control device cannot accept multiple locks or tags, a multiple lockout or tagout device may be used. A single lock may be used to lockout the machine or equipment if the key is placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her lock to secure the box or cabinet.

#### **E. Locks And Keys**

There shall be no master key which can be used to open anyone's lock. Likewise, there shall not be more than one accessible key for each individual's lock.

### **VI. TRAINING**

Prior to becoming an authorized employee, one must attend a lockout/tagout training program sponsored by Risk Management and Safety upon the request of the employee's department.

Basic training elements include:

1. Programs and policy overview
2. University and employee responsibilities
3. Applicable definitions
4. Recognition of the types of energy sources
5. Methods of energy control
6. Review of safety standards

(Videotape utilization and booklet handouts may be used to assist with training.)

Employee identification for training is the responsibility of the department director.

## **VII. ANNUAL REVIEWS**

Annual reviews shall be conducted by each department who has employees that perform lockout/tagout procedures. The review shall be recorded in writing and maintained for at least 5 years (see Appendix E). The review shall involve interviews with employees and their supervisors in an effort to identify unsafe practices that have been observed and to discuss questions and concerns that arise. All questions or concerns that are identified shall be addressed upon the completion of the annual review, including the need for improved communications, the need for additional training and the need for policy procedure changes.

# APPENDIX A

## DEPARTMENTAL SPECIFICS

1. Utilities
  - A. Energy Types
    1. Steam - 400 psig/750 F; 12 psig/350 F; 70 psig/500F; 10 psig/350F;
    2. Water - 600 psig/325F;
    3. Air - 300 psig; 100 psig
    4. Sulfuric Acid
    5. Natural Gas - 60 psig, 25 psig, 10 psig
    6. Electric - 4160 VAC - 3 phase; 480 VAC -3 phase; 220 VAC-3 phase; 115 VAC-1 phase; 125 VDC; 24VDC
    7. Fuel Oil - #2, #6
    8. Brine Water - 55 psig/50 F
    9. R-12 - 120 psig/120F
    10. R-22 - 275 psig/120 F
  - B. Authorized Employees (See Appendix C)
  - C. Notification of affected utilities employees will be made by posting on the status board in the utilities data room.
2. Facilities Operation
  - A. Energy Types
    1. Electric - 115, 220
    2. Air - 150 psi
    3. Steam - 70 psi
  - B. Authorized Employees (See Appendix C)
  - C. Notification of affected employees will be made verbally or in writing

3. Joyce Center

A. Energy Types

1. Electric - 115, 220, 480
2. Air - 150 psi
3. Steam - 70 psi

B. Authorized Employees (See Appendix C)

C. Notification of affected employees will be made verbally or in writing

4. University Food Services

A. Energy Types

1. Electric - 115, 220, 480
2. Air - 150 psi
3. Steam - 70 psi, 10 psi

B. Authorized Employees (See Appendix C)

C. Notification of affected employees will be made verbally or in writing

5. St. Michael's Laundry

A. Energy Types

1. Mechanical
2. Electric
3. Air
4. Steam

B. Authorized Employees (See Appendix C)

C. Notification of affected employees will be made verbally or in writing

6. LaFortune

A. Energy Types

1. Mechanical
2. Electric

B. Authorized Employees (See Appendix C)

C. Notification of affected employees will be made verbally or in writing

# APPENDIX B

## DEFINITIONS

1. **Affected Employee** - An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such service or maintenance is being performed.
2. **Authorized Employee** - A person who implements a lockout or tagout system procedure on machines or equipment to perform the service or maintenance on that machine or equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment which must be locked or a tagout system implemented.
3. **Capable of being locked out** - An energy isolating device will be considered capable of being locked out if it is designed with an attachment or integral part to which a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.
4. **Energized** - Connected to an energy source or containing residual or stored energy.
5. **Energy Isolating Device** - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch and other control circuit type device.
6. **Energy Source** - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
7. **Hot Tap** - A procedure used in the repair, maintenance and service activities which involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam and

petrochemical distribution systems.

8. **Lockout** - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lock-out device is removed.
9. **Lockout Device** - A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.
10. **Normal Production Operations** - The utilization of a machine or equipment to perform it's intended production function.
11. **Service and/or Maintenance** - Work place activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of energy.
12. **Setting up** - Any work performed to prepare a machine or equipment to perform its normal production operation.
13. **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 and the equipment being controlled may not be operated until the tagout device is removed.
14. **Tagout Device** - A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to 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.

# **APPENDIX C**

## **AUTHORIZED EMPLOYEES**

**(Insert your department's "authorized employee" list here)**

# **APPENDIX D**

## **Departmental Supplement**

**(Insert your departmental shut-down and re-energizing procedures here)**

# Appendix E

## Lockout/Tagout Annual Review Form

Department \_\_\_\_\_

Date of review \_\_\_\_\_

Review Administrator \_\_\_\_\_

### Personnel interviewed for this review

<u>Supervisors</u>	<u>Authorized Employees</u>	<u>Affected Employees</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Unsafe practices reported \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Questions or concerns discussed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Corrective actions taken \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional training needed/scheduled \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Changes made to policy procedures \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Review Administrator's signature \_\_\_\_\_ Date \_\_\_\_\_