Lockout/Tagout - Control of Hazardous Energy Program
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1. **Summary**

The control of hazardous energy, commonly called a Lockout/Tagout Program, protects employees from injury or death due to the unintended start up or release of stored energy while they are performing maintenance and repair on machines, processes, and systems. The hazardous energy may be electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout/Tagout does not apply to exposure to electrical hazards from work on, near, or with conductors or equipment in electrical utilization installations (covered by OSHA: 29 CFR, Subpart S, Electrical).

2. **Scope**

This program establishes the requirements for the lockout of energy isolating devices. It shall be used to ensure that the machine or equipment is isolated from all potentially hazardous energy, and locked out before employees perform any servicing or maintenance activities where the unexpected energization, startup, or release of stored energy could cause injury. See Appendix A for equipment included in this program.

3. **Policy and Regulation**

University of Iowa Operations Manual, Part III Human Resources, Division II Standards and Ethics, Chapter 16.4.d Policy on Ethics and Responsibilities for University of Iowa Staff.


4. **Definitions**

**Affected Employee**
An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

**Authorized Employee**
An employee who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.

**Energized**
Connected to an energy source or containing residual or stored energy.

**Energized 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, or other control circuit type devices.

**Energy Source**
Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

**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 lockout device is removed.

**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 energization of a machine or equipment. Lockout devices shall be singularly identified and not be used for any other purpose other than Lockout. Tags are always recommended, but not required to be used in conjunction with a lock if the lock identifies the employee who applied the lock by name and has a warning message identified above.

**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 should only be used in the rare event when a lockout device cannot be applied.

**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. Tags shall be durable and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible. Means of attachment shall be substantial enough to prevent inadvertent or accidental removal. Tagout devices shall be singularly identified. Tags used in conjunction with lockout should have a standard formatted message to warn against hazardous conditions if the machine or equipment is energized such as: DO NOT START, DO NOT ENERGIZE, or DO NOT OPERATE. Tags are always recommended, but not required to be used in conjunction with a lock if the lock identifies the employee who applied the lock by name and has a warning message identified above.

5. **Roles and Responsibilities**
Deans, Directors and Department Heads are responsible to:
- Designate and empower the department’s Health and Safety Coordinator (or Program Coordinator or equivalent) and supervisors.
• Actively support these procedures within individual units.
• Ensure an environment where employees are encouraged to follow these procedures.

The Department Health and Safety Coordinator is responsible to:
• Act as an administrative liaison between the department and EHS.
• Provide administrative oversight of health and safety within the department.
• Facilitate the correction of safety problems within the department.

Supervisors are responsible to:
• Implement these procedures.
• Assure that staff is aware of this program and provided with training and the personal protective equipment.
• Maintain documentation and records as required.

Employees are responsible to:
• Comply with these procedures and any further safety requirements set by supervisors.

EHS is responsible to:
• Provide procedural guidelines, educational offerings, administrative consultations and reviews, and select technical and field services.
• Exercise surveillance over health and safety issues at the University.

6. Training Procedures

Training Prior to Performance of Lockouts
Training is provided through the work unit. Requirements are based on an employee’s work location, work impacts, and duties.

Training for Affected Employees
Affected employees do not perform the lockout procedure, but their work may be affected by the lockout, or their work location may be in the lockout area.

Affected employees shall be instructed in the safety significance of the lockout procedures. Each new or transferred “affected employee” and other employees whose work operations are, or may be, in the area shall be instructed in the purpose and use of the lockout procedure. See Appendix B for requirements.

Training for Authorized Employees
Authorized employees perform the actual lockout procedure.

Authorized employees who have received training are the only employees who shall perform lockout on equipment. See Appendix C for requirements.
Each authorized employee will be issued his/her own padlock(s) with key(s). The key(s) for all padlock(s) issued to an authorized employee will remain with the authorized employee at all times during lockout. Only the authorized employee may remove his/her padlock(s). If for any reason the authorized employee is not available and the equipment must be re-energized, only the supervisor or manager can authorize the removal of the lock(s). When the authorized employee returns back to work, he/she must be notified immediately by the supervisor or manager that his/her lock has been removed.

7. Operating Procedures

Preparation for Lockout

Survey equipment to locate and identify all isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked out. More than one energy source (electrical, mechanical, or other) may be involved. See Appendix A for types and locations of energy isolating means.

Sequence of Lockout Procedure

1. Notify all affected employees, whether the lockout is performed by University personnel or contractors that a lockout is going to be utilized and the reason therefore. The authorized employee should know the type and magnitude of energy that the machine or equipment utilizes and should understand the hazards thereof.

2. If the machine or equipment is operating, shut it down by normal stopping procedures (depress stop button, open toggle switch, etc.).

3. Operate the switch, valve, or other energy isolating devices 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. (See Appendix A for Specific Equipment Procedures).

4. Lockout the energy isolating devices with assigned individual locks, tags or additional safety measures.

5. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain that equipment will not operate.

**CAUTION!** RETURN OPERATING CONTROLS TO “NEUTRAL” OR “OFF” POSITION AFTER THE TEST!

6. The equipment is now locked out.
8. Restoring Machines or Equipment to Normal Production Operations

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 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 devices and re-energize the machine or equipment.
   
   NOTE: The removal of some forms of blocking may require re-energization of the machine before safe removal.

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

9. Procedure Involving More Than One Person

If more than one authorized employee is required to lockout the same equipment, each should place his/her own personal lockout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks, a multiple lockout device (hasp) may be used.

10. Annual Inspection

The department or unit will conduct and maintain a record of an annual inspection to ensure that the procedures and requirements of the program are being met. See guidelines in Appendix D.

11. Resources and Assistance

See EHS’s web site for additional information and resources including contacts for assistance and training offerings.

12. Department Specific Information

Templates for department specific requirements to complete this program are contained in Appendices A through E.
APPENDIX A

DEPARTMENT NAME
SPECIFIC EQUIPMENT LOTO PROCEDURES

Equipment Name/Identifier: ________________________

Preparation for shutdown.

- Lockout/Tagout is to be performed by authorized personnel only.
- Identify the types of energy that must be isolated and where the shutoffs are located (i.e. – Left side of machine). Mark N/A if that energy source is Not Applicable.

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<thead>
<tr>
<th>Type</th>
<th>Where Located:</th>
<th>Voltage:</th>
<th>PSI:</th>
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<td>Electrical</td>
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<td>Air Valve</td>
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<td>Water</td>
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<td>Hydraulic</td>
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<td>Other</td>
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Shutdown Procedure

- Notify all personnel working in the area of shutdown.
- If the machine is running, make sure there are no parts in it prior to shutting it down.
- Shut down the machine by turning off all power sources.
- Identify any stored energy and neutralize or release it.

Lockout Procedure

- **Lockout** all energy sources.
  - Each authorized person who is working on this piece of equipment must apply his/her own lock onto a hasp until the work is completed.
- **Verify** equipment is De-energized by trying to restart it.
  - If the equipment will not restart your lockout is successful.
  - If the equipment does restart, shut it down and determine the reason. Once the problem is identified and the issue is corrected continue to the next step.
- **Perform** service on the equipment once you have verified that no energy is present.

Unlock Procedure

- Remove locks in the reverse order they were applied. (Note: Removal of locks must be done ONLY by the person who applied them.)
- Once all locks are removed, power up the equipment and run a cycle to verify it is working properly.

Notification

Notify all employees in the area that the lockout is complete.
APPENDIX B

DEPARTMENT NAME

TRAINING OUTLINE FOR AFFECTED EMPLOYEES

Purpose:
To provide information needed to understand the Lockout Program and how it impacts the employees’ job function.

What is the OSHA Lockout Program?
The Lockout Program establishes the requirements for the lockout of energy isolation devices. It can be used to ensure that the machine is isolated from all potentially hazardous energy that could lead to the unexpected energization or start-up of the machine, and locked out before any Authorized Employee(s) perform maintenance activities.

Who does the lockout?
Only Authorized Employees are allowed to do a lockout on a machine or equipment system. As an Affected Employee, you are not allowed to perform a lockout on machinery or equipment systems.

Supervisor’s responsibilities:  
Your supervisor will notify you and all other Affected Employees before a lockout is implemented.

Employees’ responsibilities during actual lockout:  
Before and during the actual lockout your supervisor may assign you to other job tasks within the plant away from the machine or equipment system that is being locked out. AT NO TIME ARE YOU ALLOWED TO ATTEMPT TO OPERATE THE MACHINE OR EQUIPMENT SYSTEM!

When can the employee(s) go back to work and use the machine or equipment system?
The Authorized Employee performing the lockout will notify your supervisor that the machine or equipment system is ready to resume operation. Your supervisor will notify you and any other Affected Employees that the machine or equipment system may be used.

I, ______________________________, have received training on the Affected Employee portion of the Lockout Program.

Date of Training: ______________

Signature of trainer: _________________________ Date: _______________
APPENDIX C

DEPARTMENT NAME

TRAINING OUTLINE FOR AUTHORIZED EMPLOYEES

Training Program Outline:

1. Purpose of the Department's Lockout Program.
2. Definition of Lockout Program terminology covered in the OSHA standard.
4. Preparation for lockout activities (Appendix A).
5. Sequence of lockout procedures.
6. Restoring machines or equipment systems to normal operation.
7. Lockout procedure involving more than one person.
8. Annual inspection (Appendix D.)
9. Yearly completion of the online ICON Training with an exam score of at least 80%.
10. Yearly completion of the Site Specific Certification for Lockout/Tag Out form.

I have received the above training in the Department's OSHA Lockout Program. I have read the standard and understand that I can at any time review the program.

A copy of the Department's Lockout Program is located in the _____________ (insert location).

I understand and accept the responsibility for bringing any questions I have pertaining to the program, its proper implementation, or my role as an Authorized Employee to the attention of my supervisor.

Name: __________________________________

Signature: ________________________________   Date: __________________

Signature of Trainer: ______________________   Date: _________________

Title of Trainer: ____________________________
APPENDIX D

DEPARTMENT NAME

ANNUAL PROGRAM EVALUATION FOR LOCKOUT PROCEDURES

Machine / Equipment Name: _____________________________________________________

Location: ____________________________________________________________________

Energy sources identified: Yes No

____________________________________________________________________________

Affected employees notified: Yes No

____________________________________________________________________________

Authorized employee performed the lockout: Yes No

Name: ______________________________________________________________________

Lockout procedures followed: Yes No

____________________________________________________________________________

Machine / Equipment systems were re-energized properly:

____________________________________________________________________________

Comments: ___________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

____________________________________________________________________________

Lockout Evaluation Observed by: Print Name

Employee:  ___________________________________________________________________

Employee:  ___________________________________________________________________

Employee:  ___________________________________________________________________

Employee:  ___________________________________________________________________

Employee:  ___________________________________________________________________

Employee:  ___________________________________________________________________

Evaluation Performed By:  _______________________________________________________

Date of evaluation:  ____________________________________________________________
APPENDIX E

DEPARTMENT NAME

LIST OF AUTHORIZED EMPLOYEES
FOR LOCKOUT/TAG OUT

The following departmental personnel have been designated as Authorized Employees under the OSHA Lockout Standard. All personnel on this list have been trained to properly perform lockout procedures and the department’s specific Lockout Program.

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