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1.0 SUMMARY
The control of hazardous energy, commonly called a Lockout/Tagout Program, protects workers 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 hydraulic, pneumatic, mechanical, or store electrical 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).

2.0 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.

3.0 REGULATIONS AND POLICIES
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.


4.0 DEFINITIONS
Affected Employee -
An employee whose job requires him/her to operate to use a machine or equipment on which services or maintenance is being performed under lockout, 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 or implements a system procedure on machines or equipment to perform the 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.
5.0 RESPONSIBILITIES

5.1 Deans, Directors and Department Heads are responsible to:
- Designate and empower the department’s administrative Health and Safety Coordinator (or equivalent) and supervisors.
- Actively support these procedures within individual units.
- Ensure an environment where employees are required to follow these procedures.

5.2 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.

5.3 Supervisors are responsible to:
- Implement these procedures.
- Assure that staff is aware of this program, instructed on the details of implementation, and provided with training, personal protective equipment, and methods of control.
- Maintain documentation and records as required.

5.4 Employees are responsible to:
- Comply with these procedures and any further safety requirements set by supervisors.
- Conduct assigned tasks in a safe manner, wear appropriate personal protective equipment, and obtain training or information prior to beginning lockout procedures.

5.5 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.

6.0 PROCEDURES

6.1 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.

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.

Authorized employees perform the actual lockout procedure.

Training for Affected Employees
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 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 assistant manager or manager that his/her lock has been removed.

6.2 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 a list of machines / equipment requiring dissipations or restraining of stored energy.

4. Lockout the energy isolating devices with assigned individual locks. See Appendix A for listing of machines/equipment for lockout.

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.

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.

6.3 **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 (hosp) may be used.

6.4 **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.

7.0 **RESOURCES AND ASSISTANCE**
See EHS’s web site for additional information and resources including contacts for assistance and training offerings.

8.0 **DEPARTMENT SPECIFIC INFORMATION**
Templates for department specific requirements to complete this program are contained in Appendices A through D.
APPENDIX A
Specific Equipment Procedures

Equipment (or Machine or Process): __________________________________________________________

Location: ________________________________________________________________________________

Department or Unit: _________________________________________________________________________

TYPE(S) AND MAGNITUDE(S) OF ENERGY AND HAZARDS:

JOB TITLE(S) OF AFFECTED EMPLOYEES AND HOW TO NOTIFY:

TYPE(S) AND LOCATION OF ENERGY ISOLATING MEANS:

TYPE(S) OF STORED ENERGY - METHODS TO DISSIPATE OR RESTRAIN:

METHOD(S) SELECTED, i.e., LOCKS, TAGS, ADDITIONAL SAFETY MEASURES, ETC.

JOB TITLE(S) OF EMPLOYEES AUTHORIZED FOR GROUP LOCKOUT:
(See Appendix C for employee list and training required.)

SEQUENCE OF LOCKOUT PROCEDURE
(See Operating Procedures in the Lockout Program.)
APPENDIX B
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. You are an Affected Employee, and 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
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.)

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 _______________________________________. 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 the department manager.

Name: __________________________________________
Signature: ___________________________ Date: _____________
Signature of Trainer: ___________________________ Date: _____________
Title of Trainer: ___________________________

List of AUTHORIZED EMPLOYEES
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.

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Training</th>
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APPENDIX D

ANNUAL PROGRAM EVALUATION FOR LOCKOUT PROCEDURES

Machine: ____________________________________________________________

Location: __________________________________________________________

Energy sources identified: Yes No

Affected employees notified: Yes No

Authorized employee performed the lockout: Yes No

Lockout procedures followed: Yes No

Machine / Equipment systems were re-energized properly: Yes No

Comments: _________________________________________________________

Evaluation performed by: _____________________________________________

Date of evaluation: _________________________________________________