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Lockout / Tagout Program
(Control of Hazardous Energy)

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DEPARTMENT OF ADMINISTRATIVE SERVICES

LOCKOUT/TAGOUT PROGRAM – 1910.147 “THE CONTROL OF HAZARDOUS ENERGY”

General Statement

Lockout is the preferred method of isolating machines and equipment from energy sources. The following procedures will be used when there are a limited number of types of machines or equipment, or there is a single power source. For more complex systems, a more comprehensive procedure will be developed, documented and utilized.

Purpose

This procedure will establish the requirements for the Lockout or Tagout of energy isolating devices. It shall be used to insure that the machine or equipment is locked out, or tagged out before employees perform any servicing or maintenance activities here unexpected energization, start-up, or release of stored energy could cause injury.

Types and magnitude of energy hazards to include but not limited to:

1. Electrical energy
2. Steam pressure
3. Water pressure
4. Gas pressure and explosion hazard
5. Air pressure
6. Hot water (thermal hazard)
7. Spring pressure (tension)
8. Hydraulic pressure
9. Oil pressure (pressurized fuel systems)
10. Kinetic

Terms

Affected Employee

An employee whose job requires them to operate or use a machine or piece of equipment on which servicing is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.

Authorized Employee

A person who locks or implements a tagout system procedure on machines or equipment to perform the servicing 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 piece of equipment which must be locked, or a tagout system implemented. 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, to hold an energy-isolating device in the safe position and prevent the energizing of a machine or piece of equipment.

Normal Production Operations

The utilization of a machine or piece of equipment to perform its intended production function.

Primary Authorized Employee

The authorized employee who has been vested with responsibility for a set number or group of employees performing service or maintenance on machines or equipment subject to lockout or tagout procedures.

Servicing and/or Maintenance Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and 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 start-up of the equipment or release of hazardous energy.

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.

Responsibility

The following classifications (where applicable) will be responsible for implementing and utilizing the Lockout/Tagout Program when performing service or maintenance on machinery or equipment where unexpected re-energizing start-up, or release of stored energy could cause injury while employed with the Department of Administrative Services.

Employees shall include, but are not limited to:

1. Administrative Assistants
2. Architectural Technicians
3. Automotive Mechanics
4. Carpenters
5. Communication Technicians
6. Custodians
7. Electricians
8. Electronic Engineers
9. Locksmith
10. Mail Clerks
11. Maintenance Workers

12. Microfilm Operators
13. Nursery Workers
14. Power Plant Engineers
15. Program Planners
16. Reproduction Equipment Operators
17. Storekeepers
18. Warehouse Workers

Designated Point of Contact

The following work unit supervisor (s) are designated as the point of contact for Lockout/Tagout issues within their designated division, and may be reached by calling the individual, or by contacting Department of Administrative Services Service Center at (515) 242-5120.

1. Electrical	Mechanical & Electrical Supervisor	208-3634
2. Mechanical Automation	Mechanical & Electrical Supervisor	208-3634
3. Construction	Construction & Grounds Supervisor	333-6714
4. Grounds Maintenance	Construction & Grounds Supervisor	333-6714
5. Custodial	<u>East Supervisor</u>	208-3598
	(Hoover, Lucas, Grimes, IWD – 1000 Grand, DPS, FMC, Monuments & Benches)	
	<u>West Supervisor</u>	208-3575
	(Capitol, Miller, IWD – 150 DM & 430 Grand, Wallace, Historical, Vehicle Dispatch, 2015 Grand)	
	<u>Ankeny Labs Supervisor</u>	208-3577
6. Fleet	Fleet Supervisor	281-3162
7. Mail	Mail Supervisor	281-5143
8. Purchasing	Purchasing Administrator	281-8384
9. Architecture & Engineering	A&E Administrator	281-3101
10. Printing	Printing Supervisor	281-5050

Those Authorized to Implement Lockout/Tagout Procedures

1. Division Administrators
2. Supervisors
3. Lead Workers
4. Employees who normally work on equipment, and have been properly trained
5. Safety Officer

Responsibilities for Identifying Isolating Devices

It will be the responsibility of each division in the Department of Administrative Services to survey, locate and, identify all energy isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, or others) may be involved.

Examples to consider:

1. Electrical Disconnect
Near machinery or equipment.
2. Electric Power
Fuse or circuit breaker type in electrical closet for these spaces
3. Steam Pressure
Valves near machinery or equipment to be locked out.
4. Gas Pressure
Valve near the equipment or machinery utilizing the gas.
5. Air Pressure
Valves near or remote from the work area.
6. Hot Water
Valves near or remote from the work area.
7. Spring
Discharge springs or block device so that it cannot function
8. Hydraulic Pressure
Isolate controls so that machine or equipment cannot function. Lower all hydraulic devices to the "O" position (rams, jacks, etc.,)
9. Oil Pressure
Valves near machinery or equipment using the fuel oil
10. Pneumatic
Any Stored Energy

Lockout / Tagout Procedure

1. Prepare for Shutdown

Notify all affected employees that a lockout/tagout system is going to be utilized and the reason therefore. The authorized employee shall know the type and magnitude of the energy that the machine or equipment utilizes and hazards thereof.

2. Shutdown Equipment

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

3. Isolate Equipment Energy Sources

Operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy sources.

4. Lockout/tagout All Energy Sources

Lockout and/or tagout the energy isolating devices with assigned individual locks or tag methods selected, i.e., Locks, tags, additional safety measures, etc.

5. Control Residual and Stored Energy

After performing lockout/tagout stored energy (especially in areas where springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, are involved), it is important to remember they must be dissipated or restrained by methods such as repositioning blocking, bleeding down, etc.

Types of stored energy methods to dissipate or restrain:

- A. Springs: Discharge springs to “0” tension or block machine or equipment so it cannot function.
- B. Hydraulic pressure – Return all hydraulic devices to “0”
- C. Electrical capacitors – Short terminals to discharge energy.

6. Verify Energy Isolation

After insuring that no personnel are exposed and to insure energy sources have been disconnected, operate the push button or other normal operating controls to make certain the equipment will not operate.

Some examples to check to insure disconnection has been successful:

- A. Start/Stop devices
- B. Electrical fuse disconnects
- C. Circuit breakers
- D. Valves
- E. Springs are discharged
- F. All hydraulic equipment is at “0” position

CAUTION: Return operating control to the “NEUTRAL” or “off” position after test.

Restoring Machines or Equipment to Normal Operations

1. After the servicing and/or maintenance is complete and equipment is ready for normal operations, check the area around the machines or equipment to insure no one is exposed.
2. After all tools have been removed from the machine or equipment guards have been re-installed, 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.

Tagout Procedures

When de-energizing cannot be accompanied by lockout, a tagout procedure may be utilized. Tags are essentially warning devices affixed to energy isolating devices, but do not provide the physical restraint on those devices that is provided by a lock.

When tags are used instead of locks, the following must be complied with:

1. Tags cannot be removed without authorization of the authorized person responsible for it, and is never to be bypassed, ignored or otherwise defeated.
2. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
3. Tags and their means of attachment must be made of material which will withstand the environmental conditions encountered in the workplace.
4. Tags must be securely attached to energy isolating devices so they cannot inadvertently or accidentally be detached during use.

Exception to Lockout Procedure

Exception to Lockout procedures are acceptable when:

Minor tool changes and adjustments, and other minor servicing activities which take place during normal operations maybe exempt.

A general rule to consider for exceptions is:

If the changes are routine, repetitive and integral, and provided the work is performed using alternative measures which provide effective protection, then, and only then, will it be considered exempt. * In addition, any exception noted must be approved prior to implementation by the division team leader.

However, at anytime when a protective device or a guard is removed, or an employee is exposed to the point of operation, the lockout / tagout procedure will be used.

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 device or tagout device on the energy isolating devices. 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, or a set of keyed-alike locks, may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet, which allows the use of multiple locks to secure it. 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.

Shift and Personnel Changes

The employee originating the Lockout/tagout procedure or the coordinator of the group lockout or tagout will be responsible for orderly transfer of lockout or tagout will be responsible for the orderly transfer of lockout or tagout devices between off-going and on-going employees to minimize exposure to hazards from the unexpected energization, start-up of the machine or equipment or release of stored energy.

Exception to Normal Removal of LOTO Locks

When the authorized employee who applied the energy isolating device is not available and the determination is made to restore the equipment to normal operation, the device may be removed by a properly trained, designated employee under the authorization and direction of the Steve Gross or Ken Thornton. Steve or Ken must confirm the authorized employee who applied the lockout/tagout device is not available or not at work and must make a reasonable effort to contact the authorized employee to inform him/her that the lockout/tagout device has been removed. The minimum requirement will be to ensure the authorized employee has been informed of the removal of the lockout/tagout device. After every attempt has been made to contact the authorized employee, the lockout/tagout device may be removed only by cutting the device.

NOTE: Documentation of this event must be made using the "Exception to Normal Removal of LOTO Devices" form. Copies of this form must be kept in division/work unit office with a copy sent to the DAS / GSE Safety Office.

After removal of the lockout/tagout device, it is imperative that the sequence required for safe and orderly release be followed completely.

Training

All new and/or transferred employee(s) affected by the lockout/tagout program will be instructed in the purpose and use of the lockout or tagout procedure.

The responsibility for completion of training required for compliance with 1910.147, Lockout/Tagout is assigned to the division/work unit implementing lockout/tagout procedures. Lockout/Tagout training must include minimal instructions regarding the DAS Lockout/Tagout program, elements of the energy control procedures relevant to the employees duties and work assignments, and the requirements of General Industry

standards identified in 1910.147, Occupational Safety and Health Administration standard for General Industry.

Retraining will be conducted when:

1. Change in machines, equipment or process that present new hazard, or when there is a change in the energy control procedures.
2. An inspection of this procedure reveals that there are deviations or inadequacies in the employee's knowledge in the use of the control procedures.

Audits

Periodic audits of this Lockout / Tagout Program shall be conducted at least annually to ensure policies and procedures are being followed. If audits reveal inadequacies in procedures and/or employee's lack of knowledge, retraining shall be initiated. The Administrator of Operations State of Iowa Capitol Complex is responsible for ensuring that the audit is completed.

Notification to Vendor's, Contractors and Monitoring Services

Vendor (s) and/or Contractors performing work on site will need to receive proper instructions and procedures concerning the DAS lockout/tagout program to insure their safety as well as others.

In addition, when applicable, proper notification will be provided to monitoring services such as ITS, Post 16, and/or DAS Customer Service Center when the lockout/tagout of equipment or machinery will directly affect their ability to effectively monitor conditions.

This responsibility falls upon each division and team leader within the organization to insure their team(s) provide contractors working directly for them with this information.

Another good way to provide information to vendor(s) and/or Contractors is during the bidding or by conducting a pre-bid meeting.

Disciplinary Action

Any employee, upon completion of training, who fails to comply with, all facets of this program, may be subject to disciplinary action in accordance with the Work Rules, Department of Administrative Services, Section 3.

Equipment List for Lockout/Tagout

Lockout/Tagout procedures will be printed out with each work order.

Any work order that does not have the procedure on it will require that the employee doing the work on the assigned piece of equipment will need to write a procedure for the piece of equipment he/she is working on, and have his/her supervisor read and OK the lockout/tagout procedure before the employee starts to work on the piece of equipment.

Forms for writing a procedure are available from his/her supervisor, or may be found at the back of this program.

Exception to Normal Removal of LOTO Locks – FORM

Each lockout/tagout device shall be removed from each energy isolating device by the employee who applied the device.

When the authorized employee who applied the lockout/tagout device is not available to remove it, that device may be removed under the direction of Steve Gross or Ken Thornton, provided that these specific procedures are followed.

1. Verify that the authorized employee who applied the device is not at the facility:

- Name of employee _____
- Date of Lock Removal _____
- Assure authorized employee is not available:
 - i. Call on cell phone: yes___ no___
 - ii. Check with manager to check attendance: yes___ no___

2. Make a reasonable effort to contact the authorized employee to inform him/her that his/her lockout/tagout device is being removed.

- Call employee's home: yes___ no___

3. After removal of the lockout/tagout device, it is imperative that the equipment be thoroughly evaluated to determine if is ready to come back online. It is also imperative that the sequence required for safe and orderly release be followed completely.

- yes___ no___

Signature required before cutting locks/tag with bolt cutter:

Signature of Steve Gross or Ken Thornton: _____

4. Ensure that the authorized employee has the knowledge that his/her locks and tags have been removed before he/she resumes work at that facility.

- yes___ no___

Signature of Steve Gross or Ken Thornton: _____

EQUIPMENT LIST

LOCKOUT PROCEDURE & WORK PLAN

Equipment: _____ Location: _____

Work Scope: _____

Contact Person: _____

Energy/Flow to be Controlled (Cross off those that DO NOT Apply)

Steam	Natural Gas	Moving Parts	Chemicals
Electric Power	Compressed Air	Pneumatic	_____
Control Power	Water	Hydraulic	_____

Lockout Checklist

- Review procedure or complete a Lockout/Procedure/Work Plan
- Identify all energy sources
- Notify affected employees
- Shut down the equipment
- Isolate the equipment
- Apply lockout devices
- Reduce equipment to zero energy state.
- Verify equipment isolation.
- Perform task.
- Return equipment to Service.

Lockout Points

Hazard	Action Required	Lock#	Name	Locks On	Locks Off

