



**DEPARTMENT OF CORRECTIONS
Information Systems**



Title:	Control of Hazardous Energy (Lockout/Tagout)	DOC Policy: 20.6.12
Effective:	3/8/12	Supersedes: 12/1/99
Applicability: All DOC employees, contractors, and volunteers		
Directives Cross-Reference:		
Attachments: Form CD 1393 – Lockout – Tagout Machine and Equipment Survey Form CD 1394 – Lockout – Tagout Machine Energy Control Procedure Form CD 1395 – Annual Energy Control Procedure Inspection Form		

I. PURPOSE

To prevent injury to staff, inmate workers, and/or contractors from the unexpected energization, start-up, or release of stored energy from machines, equipment or processes during servicing and/or maintenance or repair. This policy also includes lockout – tagout provisions required for individuals performing electrical work.

II. DEFINITIONS

- A. **Affected Employee:** An employee who is required to use machines, equipment, or systems that are being serviced under lockout/tagout, or if they are in or must work in the area. An affected employee becomes an authorized employee when that employee’s duties include performing servicing or maintenance covered under this policy.
- B. **Authorized Employee:** An employee who implements lockout/tagout on a machine or equipment requiring servicing or maintenance.
- C. **Capable or Being Locked Out:** Designed with a hasp or attachment to which a lock can be affixed; or, has a locking mechanism built in; or, lockout that can be achieved without need to dismantle, rebuild, replace or permanently alter its energy control capacity.
- D. **Energized:** Connected to an energy source or containing residual or stored energy.
- E. **Energy Source:** Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- F. **Isolation:** The isolation of any and all forms of unwanted energy that could be a serious hazard to employees.
- G. **Lockout:** The placement of a lockout device on an energy isolating device, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

- H. 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.
- I. Normal Production Operations: The utilization of a machine or equipment to perform its intended production function.
- J. Other Employee: All employees whose work operations are or may be in an area where energy control procedures may be utilized.
- K. Servicing and/or Maintenance: Workplace activities such as construction, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment.
- L. Tagout: The placement of a tagout device on an energy isolating device, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.
- M. 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, to indicate that the energy isolation device and the equipment being controlled may not be operated until the tagout device is removed.

III. POLICY

A. Application

1. This policy applies to and is to be used for the control of energy sources during servicing and/or maintenance or repair of all machines and/or equipment. Servicing and/or maintenance that takes place during normal production operation is covered by this program if:
 - a. An employee is required to remove or bypass a guard or other safety device; or
 - b. An employee is required to place any part of his/her body into an area on a machine or equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine cycle.
2. This policy does not apply to work on cord and plug connected electric equipment if the equipment can be unplugged and the plug is under the exclusive control of the employee servicing or maintaining the equipment.
3. This policy also covers exposure to electrical hazards from work on, near, or with conductors or equipment in electrical utilization or installation. See Section E below.

B. Locks and Tags

1. It is the responsibility of the Department of Corrections to supply all authorized and/or affected employees with the necessary locks, tags, chains, wedges, adaptable pins, and/or the time necessary to fabricate such items.
2. Lockout – Tagout devices shall be singularly identifiable, shall be the only device(s) used for controlling energy, and shall not be used for other purposes.
3. Lockout – Tagout devices shall be standardized at each functional unit.
4. Lockout – Tagout devices when used shall be labeled as to who applied the device.
5. Locks:
 - a. Locks shall be individually keyed.
 - b. Lockout devices shall be durable and capable of withstanding the environment to which they are exposed to for the time they are in use.
 - c. Locks may be checked out by or issued to authorized employees.
6. Tags:
 - a. Tags are warning devices only and may evoke a false sense of security; tags do not provide the physical restraint of a locking device and their use and meaning needs to be understood as part of the overall energy control program.
 - b. Tagout devices shall be constructed and printed so that exposure to weather or wet or damp conditions will not cause the tag to deteriorate or become illegible.
 - c. If tagout devices are used, they shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: **DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE, ETC..**
 - d. Tags must be legible and understandable by staff, inmate workers, and/or contractors.
 - e. Training on the use of tags shall be communicated to all employees where tagout devices are used to isolate energy sources.
 - f. When a tag is used to isolate energy, it is not to be removed without authorization of the authorized person responsible for it and is never to be bypassed, ignored, or defeated.
 - g. Tags must be securely attached to energy isolation devices so that they cannot be inadvertently or accidentally detached during use. Attachment devices for tags shall be non-reusable and have a minimum breaking strength of 50 pounds.

C. Machinery/Equipment Assessment and Written Energy Control Procedures

1. An assessment shall be performed in each work location where machines, equipment, or systems are in use to determine if written hazardous energy control procedures are necessary. (See CD 1393) **Exception:** A written procedure to control energy for a particular machine or equipment is not required when all of the following conditions exist:
 - a. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down;
 - b. The machine or equipment has a single energy source, which can be readily identified and isolated;
 - c. The isolation and locking out of that energy source will completely de-energized and deactivate the machine or equipment;
 - d. The machine or equipment is isolated from that energy source and locked out during servicing and maintenance;
 - e. The lock out device is under the exclusive control of the authorized employee performing the service or maintenance;
 - f. The servicing and maintenance does not create hazards for other employees; and
 - g. There were no accidents involving the unexpected activation or re-energization of the machine or equipment during service or maintenance.
2. Machinery/Equipment Hazardous Energy Control written procedures shall include the following and be done in the sequence listed below:
 - a. Preparation of equipment/machinery for shutdown;
 - 1) The listing of all energy sources and associated energy hazards; and
 - 2) A process to notify employees of a lockout – tagout procedure implementation.
 - b. Machine or equipment shutdown, listing of the normal shut down procedure or process.
 - c. Machine or equipment isolation; the listing of all energy control devices needed, their use, and location.
 - d. Lockout or tagout application; a listing of the order of application of lockout – tagout devices.
 - e. Stored energy; a listing of all potentially hazardous energy stored or residual energy and the means to relieve, disconnect, and/or restrain stored hazardous energy.

- f. Verification of isolation; a process to verify that isolation and de-energization of the machinery/equipment has been accomplished.
- g. Release of machinery/equipment from lockout – tagout shall be done in the following sequence;
 - 1) Work area inspection; a process to verify that equipment is operationally intact.
 - 2) Employee check; a process to verify that all persons have been safely positioned or removed before lockout – tagout devices are removed.
 - 3) Lockout or tagout device(s); removal process of lockout – tagout devices.
- h. Testing or position of machinery/equipment requiring the temporary removal of energy control devices;
 - 1) Clear Machinery/Equipment; a process to ensure that the equipment/machinery is clear of nonessential items and that employees have been safely positioned or removed.
 - 2) Remove process of lockout – tagout devices.
 - 3) Process to energize and proceed with testing or positioning.
 - 4) A process to de-energize all systems and reapply energy control measures as required of the written procedure.
- 3. The applicable work section shall maintain energy control procedures for their machinery, equipment, or processes.
- 4. Energy control procedures shall be available to all affected employees in work areas.

D. Machinery/Equipment Hazardous Energy Control Process (when a written energy control procedure is not required)

- 1. Preparation for Shutdown:
 - a. The authorized employee shall know the type and magnitude of the energy, the hazards of the energy to be controlled and the method or means to control the energy.
 - b. All affected and other employees (as needed) shall be notified that a lockout – tagout procedure is going to be implemented and the reason for the procedure.
- 2. Machine or Equipment Shutdown: The machine or equipment shall be turned off or shut down using the machine or equipments established shut down procedures.

3. Machine or Equipment Isolation: Energy isolating device that is needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source.
4. Lockout or Tagout Device Application
 - a. A lockout or tagout device shall be affixed to the energy isolating device by the authorized employee.
 - b. A lockout device where used shall be affixed in a manner that will hold the energy isolating device in a “safe” or “off” position.
 - c. A tagout device where used shall be attached in such a manner to indicate the operation or movement of the energy isolating device from the “safe” or “off” position is prohibited.
5. Stored energy such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, electrical components, air lines, gas, steam and/or water pressure, etc. must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
6. Verification of isolation; prior to starting work on the machine or equipment the authorized employee shall verify that isolation and de-energization has been accomplished. After verification of isolation the machinery or equipment is now locked out.
7. Release from lockout or tagout (Restoring machinery/equipment to normal operations):
 - a. The work area shall be inspected to ensure that nonessential items have been removed and to ensure that the machine or equipment components are operationally intact.
 - b. The work area shall be checked to ensure that persons have been safely positioned or removed from the area.
 - c. Lockout or tagout device removal; each lockout or tagout device shall be removed by the employee who applied the device.
 - d. All affected employees shall be notified that the lockout or tagout devices have been removed.
8. Testing or positioning of machines, equipment, or components thereof in situations where the lockout or tagout device must be temporarily removed for testing prior to full release from lockout – tagout.
 - a. Clear the machine or equipment of tools as listed in 7. a. above.
 - b. Remove employees from the machinery or equipment area as listed in 7. b. above.

- c. Remove the lockout or tagout device as listed in 7. c. above.
- d. Energize and proceed with testing or positioning.
- e. When testing or positioning is complete, de-energized all systems and reapply energy control measures.

E. Electricians Lockout – Tagout

1. Electrically energized parts to which an employee or inmate may be exposed shall be de-energized before work is started on or near them, unless it can be demonstrated and documented that de-energizing adds additional or increased hazards or is unfeasible due to equipment design or operational limitations.
 - a. Examples of increased or additional hazards include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.
 - b. If the exposed live parts are not de-energized, other safety related work practices shall be used to protect staff and inmates who may be exposed to the electrical hazards involved. Only qualified persons may work on electric circuit parts or equipment that has not been de-energized under the procedures of this section (H). Such work practices shall protect staff and inmates against contact with energized circuit parts directly or indirectly through some other conductive object. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.
2. Safe procedures for de-energizing circuits and equipment shall be determined before circuits or equipment are de-energized.
3. Circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.
4. Stored electric energy, which might endanger workers, shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded if the stored electric energy might endanger workers.
5. Stored non-electrical energy in devices that could re-energize electric circuit parts shall be blocked or relieved to the extent that the device could not accidentally energize the circuit parts.
6. A lock and tag shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed.
7. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

8. If a lock cannot be applied and if it can be demonstrated that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.
9. A tag used without a lock shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock.
10. A lock may be placed without a tag only under the following conditions:
 - a. Only one circuit or piece of equipment is de-energized; and
 - b. The lockout period does not extend beyond the work shift; and
 - c. Workers exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure.
11. Circuits and/or equipment shall be verified as de-energized before work can begin.
 - a. A qualified person shall test the equipment operating controls or otherwise verify that equipment cannot be restarted.
 - b. A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which workers may be exposed and shall verify that the circuit elements and equipment parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe.
12. Re-energizing equipment or circuits, even temporarily, shall be done in the following order:
 - a. A qualified person shall conduct tests and visual inspections as necessary to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed so that the circuits and equipment can be safely energized.
 - b. Workers exposed to the hazards associated with re-energizing the circuit or equipment shall be warned to stay clear of circuits and equipment.
 - c. Each lock and tag shall be removed by the worker who applied it or under his or her direct supervision. However, if this worker is absent from the workplace then the lock or tag may be removed by a qualified person designated to perform this task provided that:
 - 1) The employer ensures that the employee who applied the lock or tag is not available at the workplace, and

- 2) The employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at that workplace.
- d. There shall be a visual determination that all workers are clear of the circuits and equipment.

F. Contractors, Subcontractors

1. All contractors performing maintenance, repairs, or other service on Department of Corrections equipment, machinery, or systems shall be informed of this policy and lockout or tagout procedures.
2. All contractors shall inform the Department of Corrections on their respective lockout/tagout policy and procedure.
3. The department shall ensure that affected staff and inmates understand and comply with the restrictions and prohibitions of the outside contractor's lockout/tagout policy and procedures.

G. Functional Unit Requirements

1. Written procedures shall be developed at each location and utilized if shift or personnel changes occur during a Lockout – Tagout procedure to ensure the continuity of lockout or tagout protection. This procedure shall include provisions for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees.
2. Written procedures shall be developed at each location to address the possibility of a lockout tagout device having to be removed by someone other than the employee who applied the device. This procedure shall be part of the energy control procedures of the functional unit and shall include:
 - a. The authorization, use, and storage of a duplicate key for a lock used for energy control procedures if needed to remove a lock if the authorized employee is not available to remove the lock;
 - b. A process to verify that the authorized employee who applied the device is not at the facility and to document that the authorized employee is not available to return to the work site to remove the lock;
 - c. Provisions that the employee removing the lock is trained in the lock removal procedures;
 - d. A verification process that it is safe to unlock the device (see C. Energy Control Procedures 2,g above) and use the machinery or equipment; and
 - e. Provisions that the authorized employee who applied the device is informed that the lockout tagout device was removed: and that he/she has this knowledge prior to resuming work.

H. Roles and Responsibility

1. Authorized and/or Affected employees will:
 - a. Implement a lockout - tagout procedure when performing any service and/or maintenance/repair on machinery or equipment as defined in this policy; and
 - b. In the event of multiple authorized employees performing service and/or maintenance/repair on machinery or equipment, each employee shall place his/her own lock and identification tag on the energy isolation device; and
 - c. Report all changes or deficiencies of energy control procedures to their managers or supervisors immediately; and
 - d. Not attempt to remove any lockout/tagout device(s) not installed by themselves.
2. Managers/Supervisors will:
 - a. Ensure this policy is implemented and followed in their areas of responsibility; and
 - b. Ensure that a Machinery and Equipment Assessment and specific lockout/tagout energy control procedures are completed as required by this policy within their areas of responsibility; and
 - c. Identify and ensure adequate training for all employees that are authorized to implement lockout/tagout.
3. Safety Managers shall:
 - a. Provide consultation to managers and supervisors or others as necessary on matters related to the implementation and compliance of this safety policy, and
 - b. Assist in developing or procuring the necessary training required by this program, and
 - c. Monitor and audit the lockout/tagout program for compliance and continual safety improvement.

I. Training Requirements

1. Other employees shall be trained:
 - a. On the purpose and use of the energy control policy; and
 - b. On the prohibition of removing a lockout - tagout device that was not put on and used by that specific employee by utilizing this policy; and
 - c. On the prohibition on restarting machines, equipment, or systems, that are locked and/or tagged out.

2. Affected employee(s) shall be trained in the above plus the following:
 - a. In the recognition of hazardous energy sources where maintenance may be required; and
 - b. In the types and magnitude of the energy in the work place.
3. Authorized Employee(s) shall be trained in the above plus the following:
 - a. To be knowledgeable of the function and process of the machines or equipment they are required to perform lockout/tagout on; and
 - b. In the various methods and/or types of lockout devices necessary to lockout equipment, machinery, or systems; and
 - c. In the purpose, use, and limitations of tags used in lockout/tagout.
4. Employee Retraining:
 - a. Retraining shall 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 there is a change in the energy control procedures.
 - b. Additional retraining shall also be conducted whenever a periodic inspection reveals an inadequacy in the employee's knowledge or use of energy control procedures.
5. All training and/or retraining shall be documented and maintained at the facility with copies forwarded to training staff.

J. Inspection and Review

1. The department shall conduct periodic inspection of all energy control procedures at least annually to ensure that this policy and the requirement thereof are being followed. See CD 1395.
2. An authorized employee other than the one(s) using the energy control procedure being inspected shall perform the inspection.
3. Periodic inspections shall correct any deviations or inadequacies observed.
4. Where lockout is used for energy control, the periodic inspection shall include a review between the inspector and each authorized employee of his/her responsibilities under the energy control procedure being inspected.
5. Where tagout is used for energy control the periodic inspection shall include a review between the inspector and each authorized employee of his/her responsibilities who utilized the energy control procedure being inspected and the elements set forth in paragraph B. Locks and Tags, 6. Tags.

6. A copy of all periodic inspections shall be maintained at each work section.

III. IMPLEMENTATION

This policy will be adopted immediately without further modification.

Certified: __signature on file_____
Birdie Worley, Rules Coordinator

Approved: __signature on file_____
Mitch Morrow, Deputy Director