Lockout / Tagout Safety Program

In order to prevent injury to University personnel, students and visitors and to prevent damage to equipment and property, 29
CFR 1910.147, Lockout / Tagout (LO/TO) requires the University to establish a program and use procedures for affixing
appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to
prevent unexpected energization, start up or release of stored energy.

I. SCOPE:

1. This program covers the servicing and maintenance of machines, equipment, or electrical circuits in which the
unexpected start up or energization of the machine, equipment, electrical circuit, or release of stored energy could
cause injury or harm to employees. The program establishes the requirements for the control of such hazardous
energy.

2. All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation which could
cause injury. Employees must not attempt to operate any energy isolating device which is locked and/or tagged out.
If only tagout procedures are used, tags must meet the requirements of 29 CFR 1910.147(c)(5)(ii) and (iii) All
employees shall be trained in use and limitations of tags as described in 29 CFR 1910.147(c)(5)(ii) and (d)(4)(iii).
Whenever possible, both lockout and tagout methods should be utilized to achieve maximum safety.

3. Note: This program does not fully cover the protection of Arkansas State employees from shock or flash hazards.
Electrical safety for employees working on, near, or with energized electrical hazards between 50 volts and 600 volts
is covered by the Electrical Safety in the Workplace.

4. Written hazardous energy control procedures shall be established and used for each type of equipment with more
than one energy source.

5. The forms of potentially hazardous energy sources located throughout Arkansas State include, but are not limited to:

• Electrical energy to power equipment, machines and systems
• Natural gas
• Thermal (steam)
• Hydraulic

• Mechanical
• Pneumatic
• Chemical
6. Lockout Tagout (LO/TO) is NOT required when:
a) Live electrical systems or components that operate at less than 50 volts to ground are not required to be LOTO if
there will be no increased exposure to electrical hazards, unless required by the work control document(s). An
example of increased exposure to electrical hazards is working on equipment connected to a high amperage
battery bank operating at less than 50 volts where severe and explosive arcing could occur in short circuit
conditions.
b) Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected
energization, startup of the equipment, or release of hazardous energy is controlled by unplugging the equipment
from the energy source. In addition, the plug is under the immediate control of the employee performing the
servicing or maintenance.
c) Work on domestic water or fire water lines operating at less than 140°F, if the isolation device is under the
immediate control of the employee performing the servicing or maintenance, and no special hazards are
identified.
d) Minor tool changes or adjustments, when the on/off and/or isolation switch is within arm's reach of and under
the exclusive control of the operator. This exception is for machine shop tool operations only.
e) Lamp (normal bulb change-out only) replacement activities.
f) Compressed gas cylinder(s) change out, where the cylinder valve is closed, the manifold pressure has been bled
to zero, and no other pressure sources feed the manifold.
II. RESPONSIBILITY:
1. The Office of Environmental Health and Safety is responsible for:
a) Planning and recommending environmental health and safety programs which comply with all federal, state and
local laws and regulations;
b) Overseeing the activities of the LO/TO Program
c) Developing the LO/TO Program;
d) Working with administrators, supervisors and workers to implement appropriate LO/TO policies and procedures;
e) Assisting in conducting and coordinating LO/TO training;
f) Maintaining copies of Hazardous Energy Control Procedures (see Appendix A);
g) Being familiar with the current legal requirements and interpretations concerning LO/TO procedures; and
annually review the University LO/TO Program and seek ways to improve it.
h) Conduct, coordinate and attend required training;

2. The AVC for Facilities and Maintenance has overall responsibility for general safety and LO/TO program
compliance within their area of accountability.
a) Be familiar with the University LO/TO Program;
b) Overseeing the activities of the Authorized Supervisors
3. The Authorized Supervisor (Project Managers, Zone Director and Zone Leaders) has overall responsibility
for the LO/TO Program compliance of his/her workers including responsibility to:
a) Be familiar with the University LO/TO Program;
b) Identify authorized and affected employees
c) Ensure that workers follow the LO/TO Program rules;
d) Provide lock-out/tag-out devices to authorized employees;
e) Assist in Completing a Hazardous Energy Control Procedure (see Appendix A) for each piece of equipment or
machine in his or her areas of responsibility with more than one energy source;
f) Forward completed and signed copies of each departmental Hazardous Energy Control Procedure to EHS Office;
g) Remove LO/TO devices when the authorized employee is not available (see Appendix B);
h) Perform periodic on-site inspections (Appendix C)), at least annually, for each authorized departmental
employee to ensure that he/she is properly complying with LO/TO Program; and document that a training
session has occurred with all employees on each annual inspection completed. These inspections shall be
maintained for one year;
i) Request assistance from EHS as needed.
4. Authorized employees under the LO/TO standard are responsible for:
a) Assist the Authorized Supervisor and/or the Department of Environmental, Health and Safety with developing a
Hazardous Energy Control Procedure (see Appendix A) for each covered piece of equipment or machine in his
or her areas of responsibility with more than one energy source;
b) Following the established written procedures that have been developed for safe de-energization of equipment
and understanding and complying with University policies and programs which pertain to his or her work,
including the University LO/TO Program;
c) Notifying all affected employees that service or maintenance is required on a piece of equipment and that it will
be shut down and locked-out/tagged- out for a specified time period;
d) Using appropriate LO/TO equipment as required by the operation being conducted;
e) Alerting their supervisor when the authorized employee has reason to believe that the precautions described in
this program and on the Hazardous Energy Control Procedure may not be adequately protective for a particular
procedure;
f) Following both oral and written instructions from his or her supervisor; and

g) Attending required training.

III. 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: A person who locks out or tags out machines, equipment, or electrical circuits in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Capable of being locked out: An energy isolation device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked or, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

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 devices.

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.

Qualified person. One familiar with the construction and operation of the equipment and the hazards involved, and has met all training requirements outlined below.

Note 1: Whether an employee is considered to be a "qualified person" will depend upon various circumstances in the workplace. It is possible and, in fact, likely for an individual to be considered qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. (See 1910.332(b) (3) for training requirements that specifically apply to qualified persons.)

Note 2: An employee who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the

direct supervision
of a qualified person is considered to be a qualified person for the performance of those duties.
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.
Servicing and / or Maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting,
modifying, and maintaining and / or service machines or equipment. These activities include lubrication, cleaning or
unjamming or 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 hazardous energy.
IV. LOCK OUT / TAG OUT SEQUENCE: Hazardous Energy Control Procedures
Listed below are steps that must be specifically addressed prior to initiation of a lockout or tagout. Specific LO/TO
hazardous energy control procedures shall be written and maintained for each piece of equipment with more than one energy
source. If the methods to control energy sources are identical for a group of machines, then one set of procedures may be
developed for the group. The procedures must identify the type and magnitude of the hazardous energy, the means and
methods that will be used to protect employees during servicing, replacement or installation of equipment.
Each person who could be exposed directly or indirectly to a source of energy shall be involved in the LO/TO process.
Lockout/Tagout shall be completed by trained, authorized employee or contractor.
1. Prepare for Shutdown
• Notify all affected employees that the LO/TO will take place. Utilize the appropriate written LO/TO hazardous energy control procedure. Authorized employees shall know the type and magnitude of energy
that the machine or equipment utilizes and understand the hazards involved.
• All energy isolating devices shall be located and identified on the equipment to be locked out / tagged out.
More than one energy source (electrical, mechanical, steam or others) may be involved. If no written LO/TO
procedure is available for equipment with more than one energy source, work will pause until a plan is
developed and agreed upon. Procedures that are developed and approved by the authorized supervisor will
then be put into writing and posted for futures work.
2. Shutdown: If the machine is operating, shut it down by the NORMAL STOPPING PROCEDURE.
3. Isolate from Energy
• Operate the switch, valve, and/or other energy isolating device(s) so that the equipment is isolated from its
energy source(s). Stored energy (such as that in springs, elevated parts, rotating flywheels,

hydraulic
systems, air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as
repositioning, blocking, bleeding down, etc.
4. Lockout / Tagout
• LO/TO the energy isolating devices with assigned departmental locks (multiple point LO/TO) or personal
locks (single point LO/TO) or tags (if locks cannot be used) to hold isolating devices in off/safe position.
5. Relieve/Release Stored Energy
• Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous
stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe. If there is a
possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no
longer exist.
6. Verify Isolation
• First ensure that no personnel are exposed to any affected equipment or electrical circuits. To verify that the
energy sources are disconnected, operate the “on” button or other operating controls to make certain the
equipment is de-energized.
7. CAUTION: RETURN OPERATING CONTROLS TO “OFF” OR “NEUTRAL” POSITION AFTER THE TEST.
8. LO/TO Complete
9. Proceed to servicing/maintenance task.
V. RELEASE OF LO/TO:
1. Inspect Work Area
• After completing servicing or maintenance, check the work area to ensure it is clear. Remove all tools and
equipment, ensure guards have been reinstalled
2. Restore all Safety Device
• Make sure that machine covers and guards are on.
3. Employee Check
• Ensure no employees are exposed to any affected equipment or electrical circuits. Notify affected employees
that the equipment will be energized.
4. Remove LO/TO Device
• Each LO/TO device shall be removed from each energy control source by the employee who applied the
device. (Exception: When the authorized employee who applied the LO/TO is not available, the LO/TO
device may be removed under the direction of the supervisor, provided the following Lockout Transfer
procedure is followed). Personal LO/TO locks assigned to a University employee may be removed in

emergency situations, without the employees' permission or presence on campus, provided that the
procedure is followed and documented (see Appendix B). This is only to be done in emergency situations
and it must be fully approved and documented by the employee's supervisor.
5. LO/TO Transfer
• If a lockout procedure will extend into the following shift, the authorized employee who originally placed
the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is
to continue the repair or maintenance on that equipment or machine for the following shift.
VI. GROUP LOCKOUT/TAGOUT
• When servicing and/or maintenance is performed by a crew or department, they shall utilize a system that
affords their employees a level of protection equivalent to that provided by the implementation of a personal
lockout or tag out device. This shall be accomplished by:
o The application of a multi-lock accepting device by the primary authorized employee to the energyisolating device.
o The primary authorized employee attaching his/her lock to the multi-accepting device.
o Each authorized employee shall affix a personal lockout or tagout device to the multi-lock accepting
device when they begin work, and shall remove those devices when their work is complete.
o The primary authorized employee removing his/her lock and the multi-lock accepting device when
all service or maintenance has been completed.
VII. LO/TO – TYPES OF LOCKS AND TAGS – DEPARTMENTAL REQUIREMENTS:
1. Lockout/Tagout devices shall be used only for controlling energy and not for other purposes. Lockout locks must be:
• Durable (to withstand deterioration in wet, damp, or corrosive environments)
• Substantial (to prevent removal without excessive force)
• Identifiable (to indicate the identity of the employee applying the device)
• Standardized (same color, shape, size)
2. Tagout devices may ONLY be used when the use of locks is not possible on a lockout point. Tagout devices shall be
attached by means which are non-reusable, attached by hand, self-locking, and non-releasable (minimum unlocking
strength of no less than 50 lbs., having general equivalence of a one-piece nylon cable tie). All tags must be marked
with the name/department/date of the person placing the tag.
3. Tagout devices 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.
VIII. TESTING MACHINES / EQUIPMENT OR COMPONENTS:
1. Personnel must have approved work procedures, including appropriate safe work practices and personal protective

equipment.
2. Provisions for temporary removal of LO/TO for testing include:
• Clear machine of tools and materials.
• Remove employees from hazard area.
• Remove the LO/TO device.
• Energize and test.
• De-energize and reapply LO/TO Sequence (see Section 5.0)
• Verify isolation
IX. OUTSIDE CONTRACTORS:
• Whenever outside contractors are to be engaged in the activities covered by this procedure, the designated
A-State representative/Project Manager and the outside contractor shall inform each other of their respective
lockout/ tagout procedures. The designated A-State representative/Project Manager shall ensure that his/her
personnel understand and comply with the outside contractor's energy control procedure. If the outside
contractor has no documented lockout/tagout procedure, they shall ensure that their personnel understand
and comply with this procedure.
X. INSPECTIONS:
1. The authorized supervisor must conduct an annual documented inspection of hazardous energy control procedures
(lockout/tagout). This will be accomplished by the supervisors conducting a field inspection of LO/TO operations
and documenting this inspection using the Hazardous Energy Control Procedure Annual Inspection Form (Appendix
E). This inspection will include a documented review of the inspection with all authorized employees under their
supervision. This instructional review must include each authorized employees printed name, signature and date.
2. This is an example of information contained on a hazardous energy control procedure (lockout/tagout) inspection:
• Inspector's name (authorized employee performing inspection)
• Authorized employee performing lockout/tagout
• Affected employees
• A review of the authorized employee's responsibilities on the energy control procedure being inspected
• Where lockout is used for energy control, a review of the authorized employee's responsibilities on the
energy control procedure being inspected should be given.
• Where tagout is used for energy control, a review of the authorized and affected employee's responsibilities
on the energy control procedure being inspected should be given.
• Machine or equipment involved
• Location, date and Inspection findings
• Any deviations or inadequacies observed and corrective actions taken

3. These annual inspections shall be maintained by the Authorized Supervisor for one year.

XI. TRAINING:

1. The Team Leads/Supervisors and/or the Environmental Health and Safety Office shall conduct LO/TO training for
all authorized and affected employees. The EHS office and the employees' department shall document all training.

2. The training will include:

• The purpose of the University LO/TO program;
• An overview of the content of the University LO/TO program;
• The recognition and magnitude of applicable hazardous energy sources;
• Methods and means of hazardous energy control using lock-out devices;
• The limitations of tag-out devices
• The prohibition against removal of other employee's LO/TO devices;
• The prohibition against attempting to re-start or re-energize locked out or tagged out equipment; and
• The potential safety and/or disciplinary consequences of violating the University LO/TO program.

Additionally, training will be provided upon initial job assignment and supplemented as necessary when:

• There is a significant change in job assignments;
• There is a significant change in equipment or processes that present a new hazard;
• There is a significant change in hazardous energy control procedures (lockout/tagout); or
• The supervisor or EHS determine or suspect there are inadequacies in the employee's knowledge or use of
hazardous energy control procedures (lockout/tagout).

APPENDICE

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