STANDARD ENERGY CONTROL (LOCKOUT/TAGOUT) PROCEDURE[1]

This procedure establishes the minimum requirements for lockout/tagout of energy sources that could cause injury to personnel during cleaning, repairing, servicing, setup, and maintenance activities to machines or equipment. **All employees (Stanford University and non-Stanford personnel) shall follow the procedures.**

A. Shutting down, isolating, blocking, and securing machines or equipment

1. Notify all affected employees of the work to the machine/equipment and that a lockout is required. Indicate the reason for the lockout. Where applicable, provide notification to people who have access to the area where the servicing etc. is occuring (e.g. general public) on the deenergizing of the machine/equipment, service dates/times, and supervisor and/or building manager contact information.
2. All authorized personnel are issued a suitable lock (or locks for extra energy sources). Each lock has the individual worker's name and other identification on it. Each worker has the only key to the lock. (Note: Combination locks are prohibited for use in any lockout of machines or equipment).
3. The authorized employee checks to be sure that no one is operating the machinery BEFORE shutting down energy sources. The machine operator, affected employees, and supervisor are informed before the shutdown as a sudden loss of power could result in an incident/injury.
4. Shut down the equipment by normal stopping procedures (depress stop button, open toggle switch, etc.).
5. Disconnect or isolate energy sources (electrical, mechanical, hydraulic, etc.) from equipment by operating the switch, valve or other energy isolating devices.
6. Dissipate or restrain stored energy (e.g., in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air gas steam, or water pressure) by grounding, repositioning, blocking, bleeding down, etc.
7. All energy sources which could activate the machine shall be locked out. If machines or equipment do not have (or are not adaptable to) lockable controls, these machines shall be de-energized, disconnected from the source of power, or otherwise prevented from moving. Refer to the equipment-specific energy control procedure (next page).
8. Each person who will be working on the machinery must put a lock on the machine's lockout device(s). Each lock must remain on the machine until the work is completed. No employee is allowed to remove another person's lock or tag. Only the worker who placed the lock should remove his/her lock.
9. When equipment has only room for one lock, use a hasp. Alternatively, the coordinator of the procedure will place the lock on the equipment and place the key in a cabinet or box. Each employee will affix his/her lock to the cabinet or box.
10. For joint projects where SU personnel and contractor personnel are working on the same machine/equipment, SU will provide hasps for SU personnel to install their locks and contractors will provide separate hasps for their personnel to install their locks. Each group will install their own hasp and locks on each energy source.
11. After ensuring that no personnel are exposed, all disconnects must be tested to be sure that the power to the machine is off. CAUTION: Return disconnects and operating controls to the off position after each test.
12. Electrical circuits must be checked by qualified persons with proper and calibrated electrical testing equipment. An electrical failure could energize the equipment, even if the switch is in the off position. Stored energy in electrical capacitors must be safely discharged.
13. Authorized employees are to attach accident prevention tags which give the reason for placing the tag, the name of the person placing the tag, how he/she may be contacted, and the date and time the tag was placed. No one removes the tag without proper authority.

B. Testing machines or equipment during lockout

In many maintenance and repair operations, machinery may need to be tested and thus, energized before additional maintenance work can be performed. In doing so, this procedure must be followed:

1. Clear all personnel to safety.
2. Clear away tools and materials from equipment.
3. Remove lockout devices and re-energize systems, following the established safe procedure.
4. Proceed with tryout or test.
5. Shut down all energy sources once again, purge all systems, and lockout prior to continuing work.

Equipment design and performance limitations may dictate that effective alternative worker protection be provided when the established lockout procedure is not feasible. If machinery must be capable of movement in order to perform a maintenance task, such as a cleaning operation, workers can use extension tools (e.g. extended swabs, brushes, scrapers) to protect themselves from injury.

C. Restoring equipment to service

After the work is completed and the equipment is ready to be returned to normal operation, this procedure must be followed:

1. Remove all non-essential items.
2. See that all equipment components are operationally intact, including guards and safety devices.
3. Repair or replace defective guards before removing lockouts.
4. Remove each lockout device using the correct removal sequence. IMPORTANT: Only the worker who placed the lock and tag should remove his/ her lock and tag. If the authorized employee who applied the locks/ tags is not available to remove them, the supervisor may remove the locks/ tags only AFTER the following steps are taken:
   - Verification by the supervisor that the authorized employee who applied the locks/tags is not on university grounds;
   - Making all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout/tag device has been removed AND ensuring that the authorized employee has this knowledge before he/she resumes work on university grounds.
5. Notify all affected employees that the lockout is being removed. Make a visual check before restoring energy to ensure that everyone is physically clear of the equipment.

---

[1] Adapted from Cal/OSHA (2005). *Lockout/blockout methods and sample procedures.* Retrieved July 2010 from http://www.dir.ca.gov/dosh/dosh_publications/lockout.html.

EQUIPMENT/MACHINE-SPECIFIC ENERGY CONTROL (LOCKOUT/TAGOUT) PROCEDURE

Directions:

1. Supervisors and/or authorized employees - complete the specific procedural steps below for the safe lockout/tagout of each machine or piece of equipment affected by the hazardous energy control procedure.
2. Procedural steps may only be used for a group or type of machinery/equipment if the following conditions apply:
   - The operational controls in the procedure are configured in the same manner, AND the locations of the disconnect points are identified, AND the sequence of lockout/tagout steps is similar; OR
   - The machinery/equipment has a similar energy supply that is readily identified and isolated and has no stored or residual hazardous energy.
3. **All employees (Stanford University and non-Stanford personnel) shall follow the procedures.**
4. A copy of this equipment specific procedure should be located near the machine/equipment during servicing operations.

MACHINE/EQUIPMENT NAME:

LOCATION (building name, room):

DEPARTMENT:

A. JOB DESCRIPTION, SERVICE DATES/TIMES:

B. ENERGY SOURCES AND LOCKOUT DESCRIPTION - List the energy sources and lockout description in the sequence of shutdown tasks. (If needed, insert additional rows.)

Energy Source (detailed)	Magnitude/Type	Lockout Device and Location
1.		
2.		
3.		
4.		
5.		
Example energy sources (not an all-inclusive list): Electrical, Hydraulic, Mechanical, Pressure/Vacuum, Fuel, Thermal		

C. CHECKED PRECAUTIONS SHALL BE OBSERVED

- ☐ Disconnect, lock, and tag electric equipment
- ☐ Lines blinded
- ☐ Valves closed & tagged
- ☐ Locked out
- ☐ Lines disconnected
- ☐ Bleeders open
- ☐ Fire extinguisher at site
- ☐ Contains sparks
- ☐ Keep area free of combustibles
- ☐ Barricade area
- ☐ Shield arc
- ☐ Other:

D. PROTECTIVE EQUIPMENT REQUIRED (circle specific information)

- ☐ Goggles Face Shield
- ☐ Gloves: Leather Rubber Insulated
- ☐ Hood: Acid Thermal
- ☐ Suit: Rubber Thermal
- ☐ Boots: Steel Toe Rubber
- ☐ Safety belt & line
- ☐ Respirator: Dust Chemical
- ☐ Other:

E. OTHER PRECAUTIONS/PROTECTIVE EQUIPMENT:

PREPARED BY:

_____ _____

Print Name **Signature** **Date**

_____

Telephone Number

SU SUPERVISOR:

_____ _____

Print Name **Signature** **Date**

_____

Telephone Number