



**Lockout/Tagout Program**  
**The Control of Hazardous Energy**

**Environmental Health and Safety Office**

**Revised: 07/2019**

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# UNC CHARLOTTE LOCKOUT/TAGOUT PROGRAM

## 1.0 PURPOSE STATEMENT

In order to prevent injury to University personnel, students and visitors and to prevent damage to equipment and property, 29 CFR 1910.147 The Control of Hazardous Energy, 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.

## 2.0 SCOPE:

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 minimum requirements for the control of such hazardous energy.

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, they must show evidence that they are at least as effective as hazardous energy control (lockout/tagout) procedures. Whenever possible, both lockout and tagout methods should be utilized to achieve maximum safety.

Note: This program does not fully cover the protection of UNC Charlotte 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 and above 600 volts the Medium Voltage Electrical Safety Program.

**Written hazardous energy control procedures shall be established and used for each type of equipment with more than one energy source. If no specific written procedures are available for the type of lockout or tagout planned, work shall be halted until such hazardous energy procedures are developed and approved by the authorized supervisor.**

The forms of potentially hazardous energy sources located throughout UNC-Charlotte include, but are not limited to:

- Electrical energy to power equipment, machines and systems
- Thermal (steam)
- Mechanical
- Chemical
- Lasers
- Natural gas
- Hydraulic
- Pneumatic
- Radiation

**\*LO/TO is NOT Required When:**

- Live electrical systems or components that operate at less than 50 volts to ground are not required to be LO/TO 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.
- 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.
- 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.
- Minor tool changes or adjustments, when the on/off and/or isolation switch is within of and under the exclusive control of the operator. This exception is for machine shop tool operations only.
- Lamp (normal bulb change-out only) replacement activities.
- 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.

**3.0 RESPONSIBILITY:**

**The Director of Environmental Health and Safety is responsible for:**

- Planning and recommending environmental health and safety programs which comply with all federal, state and local laws and regulations;
- Overseeing the activities of the LO/TO Program Administrator.

**The LO/TO Program Administrator, under the direction of the Environmental Health and Safety Director, has responsibility to:**

- Develop the LO/TO Program;
- Work with administrators, supervisors and workers to implement appropriate LO/TO policies and procedures;
- Assist in conducting and coordinating LO/TO training;
- Maintain copies of Hazardous Energy Control Procedures (see Appendix A);
- Be 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.

**The Department Chair or Manager has overall responsibility for general safety and LO/TO program compliance within their area of accountability.**

- Overseeing the activities of the Authorized Supervisor

**The Authorized Supervisor (Responsible Authorized Personnel) has overall responsibility for the LO/TO Program compliance of his/her workers including responsibility to:**

- Conduct, coordinate and attend required training.

- Be familiar with the pertinent regulations and the University LO/TO Program;
- Identify authorized and affected employees;
- Ensure that workers know and follow the LO/TO Program rules;
- Provide lock-out/tag-out devices to authorized employees;
- Provide individually identified locks, which are red (personal) & green (machine), to all authorized employees;
- Complete 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;
- Forward completed and signed copies of each departmental Hazardous Energy Control Procedure to EH&S Office;
- Remove LO/TO devices when the authorized employee is not available (**see Appendix B**)
- Perform periodic on-site inspections (**Appendix E**), 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.
- Request assistance from EH&S as needed.

**Authorized employees under the LO/TO standard are responsible for:**

- Assisting the Authorized Supervisor 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.
- 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;
- 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;
- Using appropriate LO/TO equipment as required by the operation being conducted;
- Retraining from the repair or maintenance of any equipment without proper instruction in the LO/TO procedures for that equipment;
- 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; and
- Following both oral and written instructions from his or her supervisor.
- Attending required training.

**Contractors are responsible for:**

- Reviewing the [Contractor Safety Program](#). For more specific information on Contractor LO/TO requirements, please see the UNC Charlotte Contractor Safety Program and Outside Contractors Section of this program.
- Having Environmental Health and Safety programs in place. Contractors are solely responsible for ensuring that such programs comply with federal, state and local regulations.

- Notifying the appropriate University official, when or if working on energized systems, such as the Project Manager or the Medium Voltage Supervisor before the application of LO/TO devices AND when the Contractor's LO/TO has been canceled and the affected process/es are to be brought on-line.
- Complying with 29CFR 1910.147 and the UNC Charlotte hazardous energy control (lockout/tagout) procedure whenever the Contractor and UNC Charlotte facility personnel must perform a group LO/TO. Both LO/TO programs must be coordinated to comply with the OSHA standard.

#### 4.0 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 out, 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.

**Group Lockout/Tagout:** When servicing and/or maintenance is performed by a crew, craft, or department. A group consist of two or more persons participating in the same servicing and/or maintenance activity.

**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.

**Responsible Authorized Personnel:** A member of supervision or management that is trained and knowledgeable about the equipment undergoing maintenance. This is the employee who is ultimately responsible for a particular LO/TO.

**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 of 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.

## 5.0 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 (**See Appendix A**). 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.

#### 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. Written LO/TO hazardous energy control procedures are available from each supervisor. If no written LO/TO procedure is available for equipment with more than one energy source, all work must halt until such written procedures are developed and approved by the authorized supervisor.

#### 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).

#### 4. Relieve all 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 reaccumulation 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.

#### 5. Apply LO/TO Device.

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. Document LO/TO on the LO/TO Numbering Log when group lockout is being conducted.

#### 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.

**Caution: For electrical energy sources 50 volts and above where live parts are exposed, a qualified person must follow all the requirements as outline in the University’ s Electrical Safety Procedures.**

**CAUTION: RETURN OPERATING CONTROLS TO “OFF” OR “NEUTRAL” POSITION AFTER THE TEST.**

7. LO/TO Completed.

Proceed to servicing/maintenance task.

**NOTE:**

- After January 2, 1990, whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machine or equipment shall be designed to accept a lockout device. 1910.147(c)(2)(iii)

## 6.0 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 Devices

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 found in Appendix B is followed and documented. This is only to be done in unique or emergency situations and it must be fully approved and documented by the employee's supervisor.** When conducting group lockout ensure the removal of lockout devices are documented in the LO/TO Numbering Log provided in appendix D.

### **Procedures for Normal Work Shift / Personnel Changes (LO/TO Transfer)**

The LO/TO responsibility may be transferred only when:

1. The LO/TO transfer is carried out under the direction of the supervisor.
2. The transfer is made only to another authorized employee.
3. The on-coming authorized employee verifies that each step of the LO/TO sequence has been completed.
4. The on-coming employee verifies that the equipment, machine, or electrical circuit is clear of all personnel.
5. The on-coming employee applies his/her personal LO/TO device; the off-going employee removes LO/TO.
6. The on-coming employee verifies energy isolation.

## 7.0 GROUP LOCKOUT/TAGOUT

When multiple LO/TO points are involved in de-energizing a process/piece of equipment the following process will be used on campus to ensure security of the LO/TO process while working on equipment:

1. Authorized employee/s will place all the required **departmental/machine GREEN locks** / tags on each valve/disconnect/breaker/switch, etc. on the equipment being repaired or serviced. Locks and tags will be placed on the equipment by following a written procedure developed for the particular piece of equipment. The Authorized employees will verify that all LO/TO points are "OFF" (disconnects / breakers / switches), "CLOSED" (valves) or otherwise shown to be in the de-energized position (**See Appendix C for a Multiple Energy Source LO/TO example**). Authorized employees are to record the lock number/lockout location on the departmental lock checkout sheet (**See Appendix D for LO/TO Numbering Log**).
2. All **departmental/machine GREEN lock** keys are then placed into a lock box by the authorized employee/s.
3. All technicians performing maintenance/service on the piece of equipment will then place their **RED personal lock and tag** on the lock box containing the departmental lock keys and keep their personal lock key in their possession. If contractor/s are involved in work on the process/equipment with UNC Charlotte personnel, the contractor representative/s are required to place a personal lock and tag on the lock box. The contractor's lock/s do not have to be red in color but they must comply with the lock requirements of OSHA 1910.147 LO/TO standard.
4. If maintenance/service of the equipment will occur on different shifts and with different technicians, the technicians on the leaving shift will meet with the technicians on the incoming shift to change out their **personal RED locks**. Authorized Employee/s will be designated for the new shift and will be responsible for the locks, tags and keys that are directly on the equipment.
5. Once a technician has completed their work on the locked out piece of equipment, they will remove their RED lock and tag from the group lockout box.
6. Once all technicians have removed their personal locks and tags from the group lockout box, the authorized employee/s that placed the **GREEN locks** on the piece of equipment will be able to access the **GREEN lock** keys and can proceed to unlock the entire piece of equipment. **Follow ALL requirements of the release LO/TO as outlined in Section 6.0.**
7. Per the specific LO/TO procedure follow all required start up sequences for the process/equipment.

**NOTE: Ensure documentation of application and removal of primary LO/TO is documented on LO/TO log located in appendix D.**

## 8.0 LO/TO – TYPES OF LOCKS AND TAGS – DEPARTMENTAL REQUIREMENTS:

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)

Each department completing LO/TO is required to issue a **RED color** single keyed lockout lock to each authorized employee as a personal lockout device. One key from the personal lock is to be issued to the employee. A key control log is to be kept for each department indicating the lock number/person's name and corresponding key for each lock.

Each department completing LO/TO of complex systems, such as chillers, boilers, cooling towers, etc. is required to have a group of **GREEN color machine/departmental locks** for completion of multiple lockouts. Each green lock should be identified by department and number.

#### **Lockout Tags:**

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.

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.

If performing a tagout only in place of standard lockout when lockout is not possible, additional elements are necessary to provide the equivalent safety that is provided by the use of a physical lockout device. The additional means of protection needed when using a tagout system when lockout is not available may include but is not limited to; the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of energization. Contacting EHS for approval is required when performing a tagout only of an energized device.

### **9.0 TESTING MACHINES / EQUIPMENT OR COMPONENTS:**

Personnel must have approved work procedures, including appropriate safe work practices and personal protective equipment.

Provisions for temporary removal of LO/TO for testing include:

1. Clear machine of tools and materials.
2. Remove employees from hazard area.
3. Remove the LO/TO device.
4. Energize and test.
5. De-energize and reapply LO/TO Sequence (**see Section 5.0**).
6. Verify isolation

## 10.0 OUTSIDE CONTRACTORS:

UNC Charlotte protects its students, faculty, employees, neighbors and property in part by complying with 29 CFR 1910.147 – Control of Hazardous Energy Sources (Lockout/Tagout), 29 CFR 1910.269 - Electric Power Transmission and Distribution 29 CFR 1910. Subpart S – Electrical Safety. As part of UNC Charlotte's Lockout/Tagout Program, standard locks and tags are used to control the start-up of equipment that is being serviced or maintained by its employees. At no time shall the Contractor or its employees override any locks or tags that they encounter during the performance of its work.

The Contractor shall develop, implement and maintain a Lockout/Tagout program in accordance with OSHA regulations as it applies to the work of their contract. The Contractor shall have a copy of its Lockout/Tagout Program on-site and readily available for examination by University officials before the start of any work where 29 CFR 1910.147 is applicable.

- **The Contractor shall review the Contractor Safety Program and adhere to all provisions in the program before LO/TO is initiated on an energized system.**
- Unless otherwise specifically directed by the University, UNC Charlotte Facilities Management personnel will shut down and start up utility systems.
- The Contractor shall maintain a log of all machines and equipment that are locked out and/or tagged out during the performance of the work under contract. The Contractor's log shall identify the equipment that was affected, the date(s) that work was performed, and the name of the individual performing the work. The Contractor shall keep this log at the worksite for examination by University officials.
- Whenever the Contractor and UNC Charlotte Facility Management personnel must perform a group LO/TO, both LO/TO programs must be coordinated to comply with 29CFR 1910.147 and the UNC Charlotte LO/TO program.

## 11.0 DISCIPLINARY ACTION:

Violations of this program can be considered PERSONAL CONDUCT and may result in immediate dismissal.

**CAUTION: DO NOT ATTEMPT TO RESTART OR RE-ENERGIZE MACHINES / EQUIPMENT OR ELECTRICAL CIRCUITS WHICH ARE FOUND IN A LOCKED OUT OR TAGGED OUT CONDITION.**

## 12.0 INSPECTIONS:

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.

This 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
- 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

### 13.0 TRAINING:

The departmental supervisors and/or the Environmental Health and Safety Office shall conduct LO/TO training for all authorized and affected employees. The EH&S office and the employees' department shall document all training.

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 EH&S determine or suspect there are inadequacies in the employee's knowledge or use of hazardous energy control procedures (lockout/tagout).

# **APPENDICES**

# Appendix A:

## HAZARDOUS ENERGY CONTROL PROCEDURE

Equipment to be isolated:		
Manufacturer:	Model #	Serial #
Equipment location:	Building	Room

Type and magnitude of hazardous energy to be controlled (electric, natural gas, steam, hydraulic, spring, gravity, mechanical, pneumatic):
Location of energy isolation device(s) and equipment controls:

Specific instructions for shutdown, restraint, isolation, and/or dissipation of hazardous energy (please include precise, step-by-step information):

1. Lockout/Tagout shall only be completed by trained, authorized employees
  
2. Prepare for equipment or circuit shutdown.
  - a. Notify affected employees.
  - b. Assemble all required tools, materials and procedures.
  - c. Brief workers on their responsibilities, job duties and safety procedures.
  - d. Identify and locate pertinent shutdown and energy isolation devices.
  
3. Shutdown equipment or circuit.
  
4. Isolate from energy source.
  
5. Relieve all stored, residual energy.
  
6. Apply LO/TO device. Record LO/TO in LO/TO Numbering Log when conducting group lockout.
  
7. Verify energy isolation and relief of stored energy.

Revised: 07/2019

**CAUTION:** RETURN OPERATING CONTROLS TO “OFF” OR “NEUTRAL” POSITION AFTER THE TEST.

For electrical energy sources, a qualified person (electrician) shall use test equipment to test the circuit elements and electrical parts to which employees will be exposed and verify that they are de-energized.

- 8. Complete the desired work.
- 9. After completion of work, safely release from LO/TO by:
  - a. Inspecting work area.
  - b. Restoring all safety devices.
  - c. Check/notifying affected employees.
  - d. Removing LO/TO device.

Lock-out device(s) required:

Method to verify complete isolation of equipment:

Procedure completed by: \_\_\_\_\_  
name/title

Responsible Authorized Personnel : \_\_\_\_\_  
name/title

Responsible Authorized Personnel signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Please retain original procedure and send one copy to the Environmental Health & Safety Office**

## Appendix B:

### LOCK AND TAG REMOVAL DUE TO EMPLOYEE ABSENCE

**LO/TO locks and tags shall be removed only by the LO/TO - authorized employee who applied them.**

**Exception:** When the LO/TO-authorized employee who applied a lock and tag is not present at the University, the lock and tag may be removed by the direct supervisor of the employee in coordination with the equipment supervisor, provided that all of the following conditions are satisfied:

- The direct supervisor and the equipment supervisor verify that the LO/TO - authorized worker who applied the lock and tag is NOT at the University.
- All reasonable efforts shall be made to contact the LO/TO-authorized employee who applied the lock and tag to:
  - Inform the LO/TO - authorized employee that the lock and tag are to be removed.
  - Determine the operational and safety status of the equipment.
- The direct employee supervisor determines that the equipment or area is safe before the lock and tag are removed.

Furthermore, when a lock and tag applied by a LO/TO - authorized employee is removed during that employee's absence from the University, the employee's supervisor shall not allow equipment and/or energy restoration until they are able to inform the subject employee that the lock and tag were removed.

If implementation of this procedure is necessary in any instance on campus, the employee's direct supervisor must sign and date below to indicate that the procedure was used to remove a LO/TO device safely.

\_\_\_\_\_  
Authorized Employee subject to LO/TO removal

\_\_\_\_\_  
Employee ID #

\_\_\_\_\_  
Date

\_\_\_\_\_  
Supervisor of Authorized Employee

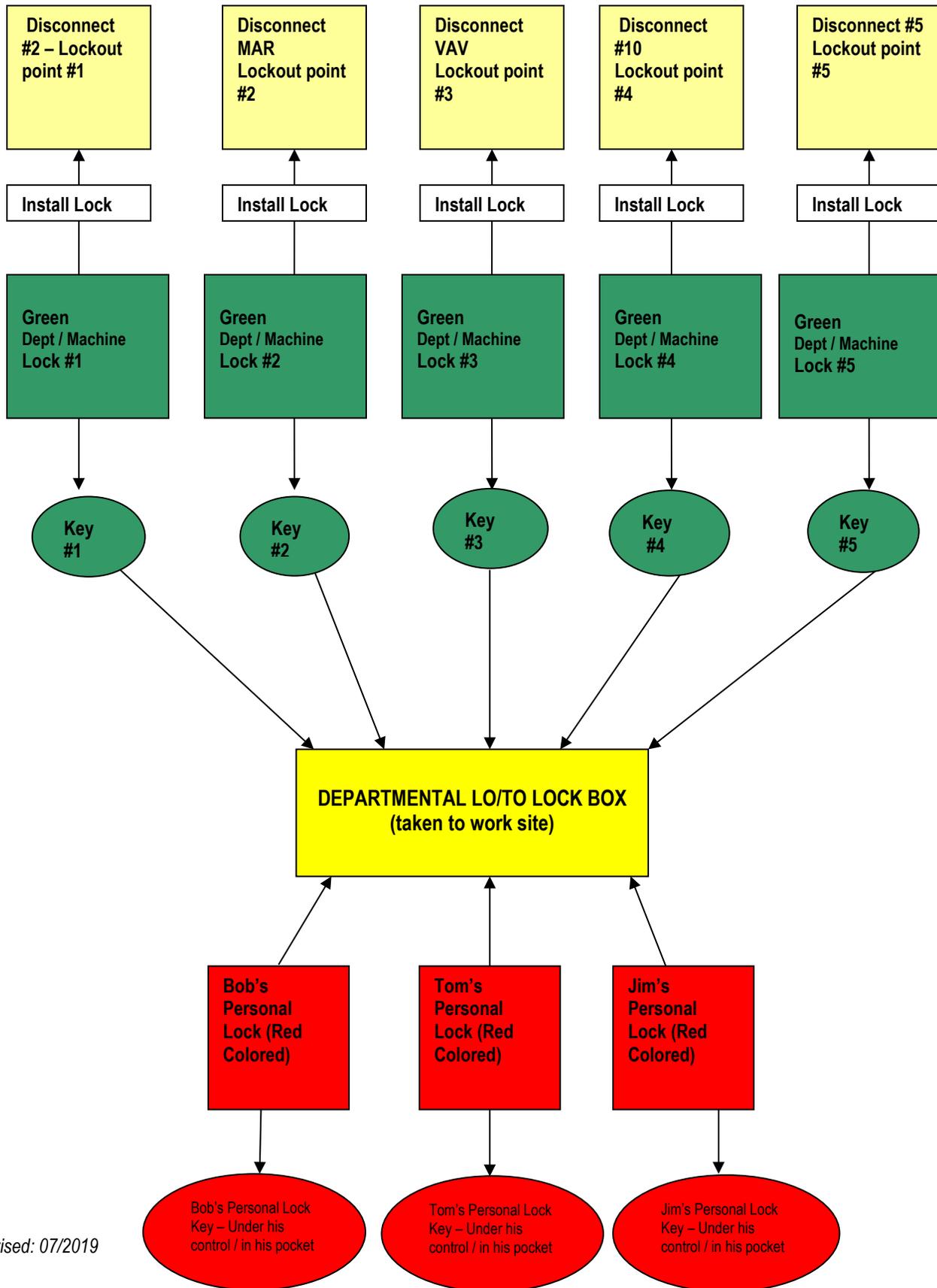
\_\_\_\_\_  
Supervisor ID #

\_\_\_\_\_  
Date

One copy to departmental file – One copy to University Environmental Health & Safety Office – Fax – 7 6968

# Appendix C:

## MULTIPLE ENERGY SOURCE LO/TO EXAMPLE



**UNC CHARLOTTE LOCKOUT/TAGOUT NUMBERING LOG**

**UNC - CHARLOTTE  
LOCKOUT/TAGOUT Numbering LOG**

Log #	Equipment and location to be Locked	Reason for Lockout	Lock #	Date/Time Locked	Locked By (Print Name)	Date/Time of Lock Removal	Initials of Person Removing Lock

# Appendix E:

## UNC Charlotte – Hazardous Energy Control Procedure (LO/TO) – Annual Inspection Form

Machine / Equipment / Process: \_\_\_\_\_ Building: \_\_\_\_\_ Date: \_\_\_\_\_

Hazardous Energy Control Procedure Being Used (LO/TO): \_\_\_\_\_

**Authorized Employees Performing LO/TO: (List Below)**

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

**Affected Employees: (List Below)**

- |          |          |
|----------|----------|
| 1. _____ | 3. _____ |
| 2. _____ | 4. _____ |

**Review of procedural Responsibilities: Please check corresponding Yes (Y), No (N) and/or Not Applicable (NA) boxes. Add notes.**

CHECK THE FOLLOWING IN SEQUENCE	YES	NO	N/A	NOTES/COMMENTS/CORRECTIVE ACTION
1. Is there a specific hazardous energy control (lockout/tagout) procedure for this machine or equipment available and/or posted?				
2. Is the hazardous energy control procedure being followed?				
3. Is the authorized employee aware of his/her responsibilities on the hazardous energy control procedures being inspected?				
4. If a tag is used where machine/equipment is not capable of being locked out, is the tagout device attached at the same location the lockout device would have been attached?				
5. Are the approved lockout/tagout devices provided to authorized employees?				
6. Is lockout/tagout performed only by authorized employees?				
7. Do authorized employees only use their own locks?				
8. Are affected employees notified before application and removal of lockout/tagout devices?				
9. Are requirements followed when group lockout is required?				
10. Is energy isolation verified?				
11. During shift or personnel change, are requirements to ensure continuity of lockout/tagout protection being met?				
12. Are all authorized employees trained?				

