

SUNY OSWEGO
ENVIRONMENTAL HEALTH AND SAFETY

CONTROL OF HAZARDOUS ENERGY
LOCKOUT/TAGOUT PROGRAM

Procedure Number	Revision Number	Effective Date
EHS-LOTO-2013	01 02	June 1, 2014 October 15, 2017

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I. Purpose:

This program establishes procedures for de-energizing, isolating, and ensuring the energy isolation of equipment and machinery. The program will be used to ensure that equipment and machinery is de-energized and isolated from un-expected start-up by physically locking machinery in a state of zero energy. If a piece of machinery or equipment does not have the ability to be locked out and no retrofit is possible then tagout will be used.

These procedures will provide the means of achieving the purpose of this program, prevention of injury to employees from the unexpected energization or start-up of equipment and machinery, or from the release of stored energy.

II. Scope:

This program will include all SUNY Oswego Facility Services Employees whose duties require them to service, install, repair, adjust, lubricate, inspect, or perform work on powered equipment or machinery which has the potential for unexpected start-up or the release of energy.

III. Applicability:

This program applies to the control of energy during the servicing and/or maintenance of equipment and machinery at SUNY Oswego.

Normal operations are covered by this program if a guard or other safety device is removed or bypassed, or any part of the body is placed into an area of the equipment or machinery where work is performed on the material, or a danger zone exists during the operating cycle. Minor tool changes, adjustments, or other minor servicing activities which take place during normal operations do not require isolation and lockout/tagout if they are routine and integral to the use of the equipment, and the operator/servicer has direct control over all energy sources to the equipment.

IV. Regulatory Requirements:

This program is required under **29 CFR 1910.147**. The control of hazardous energy (lockout/tagout). This OSHA Regulation can be found in Appendix A and at **29 CFR 1910.147**.

V. Definitions

For the purpose of this program the definitions as found in 29CFR1910.147 will be used. This OSHA Regulation can be found in Appendix A and at **29 CFR 1910.147**. For convenience the definitions have also been separated out and can be found in Appendix B of this program.

VI. Responsibilities:

President

The College President is ultimately responsible for health and safety on campus. The President must ensure that adequate funds and resources are made available to comply with this Control of Hazardous Energy Program. Also, the President must provide the authority for all procedures to be carried out.

Vice President for Administration and Finance

The VP for Administration and Finance must ensure that adequate funds are distributed to the appropriate budgets for the implementation and maintenance of this program.

Department Heads/Directors

Department Heads/Directors with operations under their supervision requiring repairs or servicing of equipment covered by this program shall ensure that the procedures in the Control of Hazardous Energy Lockout/Tagout Program are followed and that provisions for safety equipment and employee training are made available.

Managers/Supervisors

Managers/Supervisors shall be responsible for ensuring their employees do not perform any servicing or maintenance activity on equipment covered by this program without following the appropriate procedures specified in this program. Supervisors shall be responsible to ensure employees they assign to work on equipment that falls under this program have been trained.

The Environmental Health and Safety Office will have overall responsibility of the program to ensure that: authorized and affected employees receive adequate training and information, the program is evaluated annually, the lockout/tagout equipment is properly used, and the procedures of this program are being followed. The Facilities Maintenance Operations Office will have the responsibility to insure that respective shops are complying with this program. They will insure that training, implementation, annual audits, and program evaluations are performed and the results are forwarded to the Environmental Health and Safety Office.

For this program to be effective various divisions and departments in Facilities Services will have additional responsibilities as follows:

1. Environmental Health and Safety Office

- a. Having a working knowledge of **29 CFR 1910.147** in order to provide guidance and direction for compliance with the Control of Hazardous Energy.
- b. Ensuring authorized and affected employees receive adequate training and information on the Control of Hazardous Energy. **29 CFR 1910.147(c)(n)**

- c. Review of the written program at least annually.
- d. Assisting FMO Utilities Supervisors with the periodic evaluation of procedures required annually. **29 CFR 1910.147(c)(6)**
- e. Assisting with the development of written procedures for individual equipment or machinery.
- f. Maintaining Records of Training and Periodic Reviews for a minimum of 3 years.

2. Department Heads/Directors/Managers

- a. Ensuring adequate funding is available to purchase lockout/tagout equipment.
- b. Requiring new equipment to have lockout capability. **1910.147(c)(2)(iii)**
- c. Overseeing responsibilities assigned under this program to respective Shop Supervisors. Including the Certification of Periodic Review.
- d. Ensure that required staff under their supervision attends training.
- e. Ensure that Outside Contractors are informed of our procedures.
1910.147(f)(2)

3. Department/Shop Supervisors

- a. Develop/Maintain a list of equipment that is covered under this program.
- b. Develop written procedures for equipment on the list that does not meet the exceptions listed in 29 CFR **1910.147(c)(4)** – Appendix C of this policy.
- c. Ensure that required staff under their supervision document on Lockout/Tagout Log(s) (Appendix C) when equipment is locked out/tagged out and when equipment is returned to service.
- d. Perform a periodic review of the procedures that have been used at least annually. **1910.147(c)(6)**
- e. Provide Certification of Periodic Review as required in **1910.147(c)(6)(ii)** to the EHS Office – Appendix C of this policy.
- f. Ensure that required staff under their supervision attends training.
1910.147(c)(7)

- g. Notify Environmental Health and Safety when they have new staff that need to be trained or they deem it necessary for their staff to be re-trained.
- h. Determine and maintain a list of trained authorized employees under this program.
- i. Selecting, purchasing and maintaining an adequate supply of lockout/tagout equipment that meets the requirements of **1910.147(c)(5)**.
- j. Distributing lockout/tagout equipment to authorized employees under their supervision and maintaining related records (what locks are issued and to whom). **1910.147(c)(5)(ii)(D)**
- k. Assuring that lockout/tagout is performed when necessary.
- l. Removing a lock from service when a key is reported lost.
- m. Ensure that any equipment locked out by a contractor hired by them is also locked out by them or one of their staff.

4. **Authorized Employees**

- a. Attend required training. **1910.147(c)(7)**
- b. Assist in the development and review of equipment lockout/procedures. **1910.147(c)(6)**
- c. Notify their Shop Supervisor and EHS when a change in a procedure is needed.
- d. Use locks assigned under this program for lockout/tagout only. **1910.147(c)(5)(ii)**
- e. Notify their Shop Supervisor if they need additional lockout/tagout equipment.
- f. To use lockout/tagout when required and fill out lockout/tagout log.
- g. Not perform work on equipment if it needs to be locked out until the equipment is locked out. **1910.147(c)**
- h. Follow procedures for lockout/tagout and verify that energy sources have been isolated prior to performing work on equipment. **1910.147(c)**
- i. Inform Shop Supervisor if a procedure is needed for a piece of equipment and assist in the development of that procedure prior to performing servicing or maintenance on the equipment.

- j. Inform Shop Supervisor if a piece of equipment needs to be added to the lockout/tagout equipment list.
- k. Understand why lockout/tagout is required.
- l. Not to work on equipment until lockout has been verified.
- m. Reporting the loss of a lock, key or tag immediately.
- n. Notify Affected Employees of application and removal of lockout/tagout devices.

5. Affected Employees

- a. Recognize when a piece of equipment is locked out or tagged out.
- b. Responsible for understanding the significance of a lockout/tagout device.
- c. Understand why they are not to attempt to restart or re-energize equipment or machinery that is locked out or tagged out.

VII. Procedures/Implementation

SUNY Oswego will provide the necessary devices to effectively lockout or tagout energy isolating devices. Lockout/tagout devices will be the only devices used for controlling energy and shall not be used for other purposes. Any devices used for lockout/tagout will be capable of withstanding the environment to which they are exposed for the maximum period they are expected to be exposed. The devices will be substantial enough to prevent removal without excessive force. Excessive force for a locking device would be bolt cutters or other metal cutting tools. Tagout devices will be attached by a non-reusable method, attachable by hand, and very difficult to remove by hand. A nylon cable tie or equivalent will be used.

Lockout/tagout devices will indicate the identity of the employee who applied the device, and the tagout device will warn against the hazards if the equipment is energized.

Lockout is the preferred method of energy isolation. When physical lockout is not possible, the energy isolation device will be tagged out of service with a warning tag attached at the power source. In the case of plug-in power source, the tag will be attached at the plug. To ensure full employee protection using tagout instead of lockout, additional steps should be taken to guard against accidental or inadvertent energization. These steps may include, where applicable: removal of fuses, blocking of switches, or the removal of a valve handle.

1. SEQUENCE OF LOCKOUT OR TAGOUT SYSTEM PROCEDURE - The person(s) performing a lockout or tagout shall: **1910.147(d)**

- a. Refer to written LO/TO procedures specific to the equipment serviced or maintained.

- b. **Notify all affected employees** that a lockout or tagout system is going to be utilized, the equipment to be involved and the reason therefore.
- c. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof. In addition, they shall also understand how the shutdown of this piece of equipment affects other associated equipment and other utilizing the space for work, research, etc.
- d. **Normal Shutdown:** If the machine or equipment is operating, shut it down by normal stopping procedure (depress stop button, open toggle switch, etc.).
- e. Locate the points of energy distribution
- f. Operate the switch, valve or other energy isolating device(s) to the off or closed position so that the equipment is isolated from the energy source(s). Stored energy (such as that is capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) shall be dissipated or restrained by a method such as repositioning, blocking, bleeding down, etc. (If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall continue until the possibility of accumulation no longer exists.)
- g. **Lockout/Tagout Device Application:** Lockout and/or tagout the energy isolating devices with assigned personal lock(s) or tag(s).
 - **When physical lockout is not possible, the energy isolation device will be tagged out of service with a warning tag attached at the power source.**
- h. **Verification of Energy Isolation:** After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button(s) or other normal operating controls to make certain the equipment will not operate. When working on electrical circuitry, test for de-energizing with a meter.
- i. **CAUTION:** Return operating control(s) to "neutral" or "off" position after the test. **The Equipment is now Locked Out or Tagged Out.**
- j. **Employees will recheck locked out equipment if they have left the equipment (breaks, lunch, end of shift) to make sure it is still de-energized and locked out.**

2. GROUP LOCKOUT/TAGOUT 1910.147(f)(3)

- a. When more than one individual is involved in locking or tagging equipment out of operation, each individual will attach their individual lock or tag to the energy isolating device(s).
- b. An equivalent lockout device may be in the form of a group lockout device such as a multiple lock hasp or lock box.
- c. Primary responsibility for a group of authorized employees working under a group lockout device will be vested in a designated authorized employee assigned by the Shop Supervisor.
- d. Group lockout methods will provide a level of protection equal to that afforded by personal lockout/tagout device.
- e. **EXCEPTION TO ABOVE- APPLYS ONLY TO CHP BOILER ROOM IN LEE HALL:** Boilers located in the CHP Boiler Room will be locked out with the locks that are assigned to the boiler to be locked out. Each individual boiler has its own set of locks that are numbered and used only on the respective boiler that has the same number. There are specific written lockout procedures for each boiler. A requirement of the procedures is a systematic set of checks and balances which ensure each boiler is completely locked out and that information is shared with all CHP Staff.

3. RESTORING MACHINES OR EQUIPMENT TO NORMAL OPERATIONS 1910.147(e)

- a. After the servicing and/or maintenance is complete, re-install all parts or subassemblies removed, re-install all guards and protective devices.
- b. Remove all blocks, wedges or other restraints from the operating area of the equipment.
- c. Remove all tools and shop equipment from the operating area.
- d. Verify Equipment Ready for Operation – inspect for non-essential items, ensure that all employees are safely positioned clear of the operating areas of the equipment.
- e. Notify Affected Employees- The sudden noise or start up may startle nearby employees.
- f. Remove Energy Isolation Devices (Only by the authorized employee(s) who installed them) – remove line blanks, reconnect piping, close bleeder valves, replace fuses, close circuit breaker(s).

- g. Re-energize the equipment.

4. SHIFT OR PERSONNEL CHANGES - The following steps will be followed to ensure continuity of employee protection during personnel changes: **1910.147(f)(4)**

- a. Notify all personnel involved in the maintenance or servicing activity that the a transfer of personal locks/tags is about to occur
- b. Clear all personnel from hazardous area(s) of equipment
- c. The off-going employee shall remove their lockout/tagout device(s) and oncoming personnel shall install theirs. Supervisory personnel shall monitor these situations and, if necessary, install their own lockout or tagout device so that at no time will the equipment or machinery be without a lockout/tagout device.
- d. When the transfer of lockout/tagout devices is complete, the effectiveness of all energy isolation devices will be verified.
- e. If an entire group or more than one employee will be transferring work responsibility locks/tags will be removed and replaced one at a time in order of installation. All employees must be present during this exchange.

5. TEMPORARY REMOVAL OF LOCKOUT/TAGOUT PROTECTION – 1910.147(f)(1)

In situations when the equipment must be temporarily energized to test or position the equipment or its components, the following steps will be followed:

- a. Clear the equipment of tools and materials that are non-essential to the operation.
- b. Ensure the equipment components are operationally intact.
- c. Remove employees form the equipment area.
- d. Remove the lockout/tagout devices by the employee who installed it
- e. Energize and proceed with testing or positioning
- f. De-energize all systems and re-install all energy control measures
- g. **Verify** re-installed energy control measures are effective.

6. EMERGENCY REMOVAL OF A LOCKOUT/TAGOUT DEVICE – 1910.147(e)(3)

Only the employee who installs a lockout or tagout device shall remove it. However, in the extreme circumstance when such employee is not available the device may be

removed with the permission of the Utilities Manager and under direct supervision of the Shop Supervisor provided that it is verified that:

- a. The authorized employee who installed the device is not at the facility
- b. All reasonable efforts are made to contact the employee to inform him/her that his/her lockout/tagout device needs to be removed.
- c. The employee is informed of such removal before he or she returns to work at the facility.

7. PERIODIC INSPECTIONS – 1910.147(c)(6) At least annually, Utility Supervisors with the assistance from EHS will conduct periodic inspections of this energy control procedure to ensure compliance and to correct any deviations or inadequacies observed. Documentation of inspections must identify the machine or equipment inspected the date of inspection and the name of the person performing the inspection. Completed Documentation will be kept on file by the EHS Office for a minimum of 3 years. The documentation form can be found in Appendix C of this policy.

8. OUTSIDE CONTRACTORS – 1910.147(f)(2) Whenever outside personnel may be engaged in activities covered by this program, the Department administering the contract will inform the contractor of applicable lockout/tagout procedures used to protect SUNY Oswego employees from the hazards of working near energized equipment.

- a. To ensure the safety of SUNY Oswego staff and Contractors, any equipment locked out by a contractor will also be locked out by the Department/Shop who is the contact for the contractor. * Exception –may not apply to equipment that is under service contract (equipment that is never worked on or serviced by SUNY Staff).
- b. The contractor will be expected to ensure that his/her employees understand and comply with the restrictions and prohibition of this program.
- c. Requires, under these circumstances, the contractor to inform us of their lockout/tagout procedures so the SUNY Oswego employees can comply with the restrictions and prohibitions of the contractor's program.
- d. Also requires the contractor to notify Department administering the contract, the Shop Supervisor, and affected employees prior to de-energizing, isolating, and locking out equipment. Conversely, notification is also required when this equipment will be returned to service.

VIII. Training

Training will be provided to ensure that the purpose and function of this procedure is understood by employees, and that the knowledge and skills required for safe application, usage and removal of energy controls are acquired by employees. Training shall be given to all authorized, affected, and other personnel.

EHS will conduct training sessions as outlined in OSHA Lockout/Tagout Standard **29 CFR 1910.147(c)(7)**, and prepare a record to certify that the employee training has been accomplished. The records will be kept in the EHS Office for a minimum of 3 years. Periodic retraining will be provided whenever there is a reason to believe that there are deviations from or inadequacies in the lockout/tagout procedures.

Information will be provided to Utility Shop Supervisors at least annually to use for a discussion/toolbox talk with their staff.

IX. Record Keeping

SUNY Oswego is subject to inspection from the NYS Public Employee Safety and Health Bureau (PESH), whom may ask to see documentation and records associated with this program. Such records will be maintained as follows:

1. Environmental Health and Safety (EHS)
 - a. Documentation of Training for Authorized, Affected and Others will be maintained for at least 3 years.
 - b. Certification of Periodic Reviews will be maintained for at least 3 years. **1910.147(c)(6)**
 - c. The written program which is to be reviewed annually. **1910.147(c)(1)**
2. Shop Supervisors
 - a. Maintain a list of shop equipment that is covered under this program.
 - b. Written procedures for shop equipment that does not meet exceptions.
 - c. Provide Certification of Periodic Reviews to the EHS Office. **1910.147(c)(6)**
 - d. Determine and maintain a list of trained authorized employees.
 - e. Maintaining records of lockout/tagout equipment distribution.

X. References/Definitions

The following References were used to create this document:

1. 29 CFR 1910.147 The Control of Hazardous Energy (lockout/tagout) – Appendix A
2. Previous SUNY Oswego Lockout/Tagout Policy
3. CONN-OSHA Sample Energy Control Program
4. University of Vermont –Control of Hazardous Energy Sources and Electrical Hazards Lockout and Tagout Program.

XI. Appendices

The following is a list of appendices for the program:

1. 29 CFR 1910.147 The Control of Hazardous Energy (lockout/tagout) – Appendix A
2. Definitions from 29 CFR 1910.147(b) – Appendix B
3. Forms Used for This Program – 29 CFR 1910.147 – Appendix C
 - a) Lock Out/Tag Out
 - b) Certification of Periodic Inspection – LO/TO
 - c) Sample Written Procedure Form
 - d) Exceptions to Written Procedures 29 CFR 1910.147(c)(4)

Appendix A

[29 CFR 1910.147](#)

Control of Hazardous Energy (LO/TO)

Appendix B

29 CFR 1910.147

Control of Hazardous Energy (LO/TO)

Definitions

I. Definitions

For the purpose of this program the following definitions as found in 29CFR1910.147 will be used:

1. 1910.147(b)

Definitions applicable to this section.

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 or equipment 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 isolating 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.

Energized. Connected to an energy source or containing residual or stored energy.

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 line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Energy source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot tap. A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

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, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

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

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 startup of the equipment or release of hazardous energy.

Setting up. Any work performed to prepare a machine or equipment to perform its normal production operation.

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.

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 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.

Appendix C

29 CFR 1910.147

Control of Hazardous Energy (LO/TO)

Forms Used For This Program

Lock Out/Tag Out Log

Mechanical/Electrical Room _____
Date(s): From _____ **To** _____

Equipment	Location	Reason	Employee(s)	Date LO/TO Out	Date Restored

Lock Out/Tag Out Log

From _____ To _____

Shop/Personal _____

Equipment	Location	Reason	Employee(s)	Date LO/TO Out	Date Restored

Certification of Periodic Inspection – LO/TO

Shop _____

Date _____

Machine/Equipment _____

Location _____

Employee(s) _____

Were any deviations or inadequacies identified?

Yes or No

If yes, what were they?

What corrective actions, if any, are required?

Is additional training needed?

Yes or No

If yes, on what?

Additional Comments:

Inspector: _____

Print

Sign and Date

Received by EHS _____

Sign and Date

LOTO Procedure

Energy control procedure

1910.147(c)(4)(i) Procedures shall be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.

Note: **Exception:** The employer need not document the required procedure for a particular machine or equipment, when all of the following elements exist:

- (1) The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees;
- (2) the machine or equipment has a single energy source which can be readily identified and isolated;
- (3) the isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment;
- (4) the machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
- (5) a single lockout device will achieve a locker-out condition;
- (6) the lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
- (7) the servicing or maintenance does not create hazards for other employees; and
- (8) the employer, in utilizing this exception, has had no accidents involving the unexpected activation or reenergization of the machine or equipment during servicing or maintenance.

LOTO Procedure

Lock out/Tag Out procedures are to be completed before service or maintenance work on equipment or machinery, and/or before entry into any area where operating equipment poses a hazard to the entrant. Failure to follow proper lockout-tag out procedures may result in disciplinary action.

1. Each LOTO will follow the **SEQUENCE OF LOCKOUT OR TAGOUT SYSTEM PROCEDURE** listed below.
2. LOTO will follow the specific instructions for each piece of equipment/machinery to identify, disconnect, isolate, lock out and verify the lock out of the appropriate energy sources. *If one does not exist, one will be created using a blank form.*
3. Ending LOTO will follow the **RESTORING MACHINES OR EQUIPMENT TO NORMAL OPERATIONS** process listed below, using the specific instructions for the equipment to activate energy sources.

SEQUENCE OF LOCKOUT OR TAGOUT SYSTEM PROCEDURE –

- a. Refer to written LO/TO procedures specific to the equipment serviced or maintained.
- b. Notify all affected employees that a lockout or tagout system is going to be utilized, the equipment to be involved and the reason therefore.
- c. The authorized employee shall know the type and magnitude of energy that the equipment utilizes and understand the hazards. They shall also understand how the shutdown of this piece of equipment effects other associated equipment.
- d. Normal Shutdown: If the machine or equipment is operating, shut it down by normal stopping procedure.
- e. Locate the points of energy distribution.
- f. Operate the switch, valve or other energy isolating device(s) to the off or closed position so that the equipment is isolated from the energy source(s). Stored shall be dissipated or restrained by a method such as repositioning, blocking, bleeding down, etc.
- g. Lockout/Tagout Device Application: Lockout/tagout the energy isolating devices with lock(s) or tag(s).
- h. Verification of Energy Isolation: Ensure that no personnel are exposed, operate the push button(s) or other normal operating controls to make certain the equipment will not operate. When working on electrical, test with a meter.
- i. Return operating control(s) to “neutral” or “off” position after the test.
- j. Employees will recheck locked out equipment if they have left the equipment (breaks, lunch, end of shift) to make sure it is still deenergized and locked out.

RESTORING MACHINES OR EQUIPMENT TO NORMAL OPERATIONS –

- a. After the servicing and/or maintenance is complete, re-install all parts or subassemblies removed, re-install all guards and protective devices.
- b. Remove all blocks, wedges or other restraints from the operating area of the equipment.
- c. Remove all tools and shop equipment from the operating area.
- d. Verify Equipment Ready for Operation – inspect for non-essential items, ensure that all employees are safely positioned clear of the operating areas of the equipment.
- e. Notify Affected Employees- The sudden noise or start up may startle nearby employees.
- f. Remove Energy Isolation Devices (Only by the authorized employee(s) who installed them) – remove line blanks, reconnect piping, close bleeder valves, replace fuses, close circuit breaker(s).
- g. Re-energize the equipment.

LOTO Procedure

Equipment Name	Equipment #	Location (bldg/rm)	Associated Systems?
Description			
Affected Department	Notified Going Down? Contact Person; Date/Time	Notified Coming Up/Restored? Contact Person; Date/Time	

Fill in:				
Type of Energy Source	Magnitude/ Medium	Equipment Type	Zero Energy Test Method	Notes/Location

Equipment shut down using normal shutdown procedure?	
Yes / No	
Back feeds investigate and eliminated?	
Yes / No	
Stored or residual energy sources/devices (accumulators, capacitors, etc) bled, blocked, or isolated?	
Yes / No	

Authorized Person Writing Procedure	
Authorized Person Verifying Procedure	

Type of Energy Source: electrical, hydraulic, pneumatic, gas, liquid, etc.
 Magnitude: volts, psi, temp
 Medium: water, steam, natural gas, fuel oil, etc.
 Equipment Type: disconnect, breaker, valve, plug, etc.
 Zero Energy Test Method: Multimeter, button push, switch, etc.

