

## **Equipment Lockout/Tagout Program**

### **Purpose**

This program was developed in accordance with the requirements of 29 CFR 1910.147 and 1910.333(b) and will provide minimum performance standards for lockout/tagout procedures to prevent harmful unexpected energizing (including mechanical, steam, etc.) or start-up of equipment and machines which may result in injury to college personnel.

### **Applicability**

This Equipment Lockout/Tagout Program is applicable to all SUNY Geneseo personnel performing equipment and electrical servicing on the campus. Procedures for SUNY Geneseo personnel are provided in Section 1. Communications concerning Lockout/Tagout are also required to all non-SUNY personnel performing services on the campus. Guidelines for these communications are provided in Section 2.

The minimum performance standards outlined in this program are to be implemented on all machines, equipment, devices, etc., which use a source or sources of energy. For the purposes of this program, energy is defined as any power including electrical, mechanical, hydraulic, pneumatic, chemical, thermal.

Examples of such equipment include:

motors	fans	compressors	pumps
elevators	steam lines	hot water lines	

Equipment and activities exempt from this program include:

Electrical equipment which can be disconnected by a single supply cord or plug, so long as the plug or cord remains under the sole control the servicing individual (i.e., in the view of and in the same room as).

Repair, maintenance, or service activities performed under supervisors approval on pressurized pipelines (gas, steam, water) provided the continuity of service is essential to the operation of the college, and documented and proven procedures are used for worker protection.

Repetitive, routine maintenance, such as lubricating, draining sumps, servicing of filters, and inspections for leaks and/or malfunctions. This exemption does not apply if an employee is required to remove or bypass a guard or other safety device or is required to place any part of his or her body into an area of the machine where a danger actually exists.

Specific systems on the SUNY Geneseo campus which have been identified as requiring the implementation of these standards are identified in Appendix A. It is the responsibility of Department

Chairpersons or Supervisors to identify other systems to the Department of Environmental Health and Safety (EH&S) for possible inclusion in this program.

### **Section 1: Procedures for SUNY Geneseo Personnel**

#### Lockout/Tagout Hardware

Lockout devices shall be standardized throughout the campus so as to be recognizable by all campus personnel as a lockout device. Tags must be completed, as shown in Figure 1, to identify the individual or supervisor who is or has applied the device. Tagout devices will include a warning such as "Do Not Operate". It is the responsibility of the Associate Director of the Physical Plant to maintain a sufficient supply of lockout/tagout devices. It is the responsibility of the Supervisor to determine the distribution and specific application procedures for the lockout/tagout devices.

Appropriate Lockout/Tagout devices have been distributed to the following campus personnel:

Physical Plant Trades persons

Grounds Crew

Auto Mechanics

Zone Maintenance Personnel

Heating Plant Personnel

All replacement or new equipment that could be subject to lockout when serviced will be equipped so as to be lockable.

#### Lockout/Tagout Procedures

These lockout/tagout procedures were developed to prevent inadvertent operation when such operation could cause injury to personnel. Lockout procedures create a physical barrier to such operation and are therefore most desirable. However, when lockout cannot be accomplished due to equipment configuration or other reason, tagout procedures, which label the affected equipment or system, must be implemented. Tagout procedures must provide an equivalent level of safety to that obtained by the lockout procedures. This equivalent level of safety must be accomplished through the implementation of one or more additional safety measures on each affected energized system (i.e., removal of an isolating circuit element, blocking of a controlling switch, opening of a disconnecting valve, or removal of a valve handle). These measures are required in addition to securing the tagout device to the same location the lockout device would have been placed.

It is the responsibility of the employee to institute Lockout/Tagout procedures prior to initiating servicing or other activity governed by these regulations.

Figure 1

Completed Tag

Tag must identify :

1. Person instituting Lockout/Tagout
2. Work Control Center Phone Number
3. Date Lockout/Tagout was instituted



**Instituting the Lockout/Tagout:**

1. The servicing personnel must become or be familiar with all hazards associated with the equipment or servicing activity, and means for eliminating the hazards.
2. All individuals normally operating the equipment must be notified of the implementation of the lockout/tagout procedure. Notification of academic department personnel will consist of notification to the department chair.
3. If the equipment is under operation, it must be shut-down using the normal stopping procedure.
4. All sources of energy are to be disconnected from the equipment.

5. Lockout/tagout devices must be secured to all energy isolating devices. If the equipment or system requiring servicing is operable from the Energy Management System (EMS), the "hand-off-auto-switch" must be placed in the "off" position and locked or tagged. If tagout procedures are required, additional safety measures must be implemented.

6. All residual energy is to be dissipated.

7. The elimination of all energy sources must be verified.

### **Releasing the Lockout/Tagout**

1. Remove all tools and equipment used during the servicing.

2. Replace guards, if any, that may have been removed for servicing.

3. Notify operating personnel that the lockout/tagout procedure is being terminated. Notification of academic department personnel will consist of notification to the department chair.

4. Remove the lockout/tagout devices.

5. Ensure the equipment is operationally intact.

6. Immediate supervisors should be notified that lockout/tagout has been terminated.

### **Incomplete Activities**

When an activity requiring the implementation of lockout/tagout procedures is not completed within a given work shift or when the individual initiating the activity will be replaced prior to activity completion, supervisory personnel must be notified and measures implemented to ensure the lockout/tagout is continued.

### **Multiple Servicing Personnel**

If multiple personnel are required to perform the service, supervisory personnel are to be notified and measures implemented to ensure lockout/tagout is not discontinued until all personnel have completed their associated tasks.

### **Employee Training and Verification**

Each employee of SUNY Geneseo that could reasonably be expected to implement this procedure will be trained in the following:

recognition of hazardous energy sources

methods of energy isolation and control

identification and proper use of lockout/tagout devices

prohibition of removal of a lockout/tagout device and equipment reenergize

outside contractor lockout/tagout restrictions

Records of employee training will be maintained at the Department of Environmental Health & Safety.

At a minimum of once annually, each employee involved in the implementation of this program will be visited at their job site by their supervisor at an unannounced time. The supervisor will scrutinize the implementation of the lockout/tagout procedure specific to the task being performed. The supervisor will document and certify that the inspection was performed by completing the form attached as Appendix B.

Employee retraining will occur when lockout/tagout procedures are revised, when equipment is replaced or renovated in a manner effecting energy sources, and when annual inspection reveal deficiencies.

Employees of SUNY Geneseo who may be affected by this procedure will receive training sufficient to recognize a lockout/tagout device and the importance of not attempting to start or use equipment under lockout or tagout.

**Section 2: Procedures for non-SUNY Personnel performing services on campus:**

Outside Contractors

Whenever outside contractors are to be engaged in activities requiring lockout/tagout, the college and the contractor will inform each other of their respective lockout/tagout procedures. For construction activities this communication will occur through the Office of Facilities Planning or through the Associate Director of Physical Plant. For service contractors, this communication will occur through the Physical Plant.

In all cases, the offsite contractors must provide their notifications with sufficient lead time for internal communication to be provided to the Work Control Center, from where all other affected personal at SUNY Geneseo will be notified.

**Appendix A**

<u>Equipment</u>	<u>System Requiring Lockout</u>
Hot Water	Valves, temperature
Chilled Water	Valves, electrical
Condensate	Valves, electrical
Condenser water	Valves, electrical
Steam	Valves, electrical, temperature, line isolation
Sanitary	Line isolation, ventilate
Fire Sprinklers	Valves
Compressed Air	Valves
Natural Gas	Valves, ventilate
Petroleum Fuels	Valves, ventilate

Vacuum	Valves
Refrigeration	Valves, electrical, temperature, mechanical, ventilate
Chemical Feed	Valves, line isolation, electrical, ventilate
Fire Protection Systems	Electrical, mechanical energy release
Kitchen Equipment	Electrical, mechanical energy release, temperature
Elevators	Electrical
Boilers	Valves, line isolation, electrical, temperature
Generators	Electrical (including isolation), temperature
Fire Alarm	Electrical
Air Handlers	Electrical, mechanical energy release
Fume Hoods	Electrical, ventilate
Electrical	Electrical
Powered Garage Door Openers	Electrical, mechanical energy release
Mobile Heavy Equipment	Mechanical energy release, hydraulic
Automobiles	Electrical, mechanical, temperature, ventilate
Elevator Cars	Electrical, mechanical, hydraulic

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#### Valves

Ensure all associated valves are fully closed, and chained and locked or tagged. Stored energy (compressed air, waster, etc.) to be slowly released until eliminated.

#### Line isolation

Prevent additional materials from entering area of line to be worked on. Clear line, flush isolated line and clear again.

#### Electrical de-energizing

Unplug all associated plugs and test

Mechanically de-energize all associated disconnects, tag, and test

Lock all disconnecting means, tag and test

Release or isolate stored forms of energy (capacitors, batteries, etc.)

Bond and ground as needed

#### Mechanical Energy Release

Mechanically deactivate stored forms of energy (spring loaded mechanism, gravity, etc.)

Temperature

Prior to working on or in on area of temperature extremes, allow surfaces to return to non-dangerous temperatures.

Ventilate

Ventilate the work area to avoid buildup of fumes or gases. Test the atmosphere to verify effectiveness of ventilation. If gases cannot be dissipated DO NOT attempt to complete task without proper respiratory protection and buddy system.

Hydraulic

Isolate line or completely drain.

Appendix B

Supervisor Review of Employee Lockout/Tagout Program Compliance

Date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Employee \_\_\_\_\_ Supervisor \_\_\_\_\_

Equipment being serviced \_\_\_\_\_

Prior to initiating task (Yes or No)

\_\_\_\_\_ Is employee familiar with all types energy associated with equipment?

\_\_\_\_\_ Were employees associated with the equipment notified of lockout/tagout occurrence?

\_\_\_\_\_ Was equipment shut down following normal stopping procedure, if applicable?

\_\_\_\_\_ Were all hazardous sources of energy isolated from the equipment?

\_\_\_\_\_ Were lockout/tagout devices secured to all energy isolating devices?

\_\_\_\_\_ Was all residual energy dissipated, if applicable?

\_\_\_\_\_ Was the elimination of all energy sources verified?

When the task was completed (Yes or No),

\_\_\_\_\_ Were all tools and equipment used during servicing removed?

\_\_\_\_\_ Were all guards replaced, if applicable?

\_\_\_\_\_ Were employees associated with the equipment notified of the termination of the lockout/tagout?

\_\_\_\_\_ Were all lockout/tagout devices removed?

\_\_\_\_\_ Was the equipment verified to be operationally intact prior to start-up?

If "No" to any of the above, indicate proposed corrective action \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

Signatures:

Employee \_\_\_\_\_

Supervisor \_\_\_\_\_

Send copy of completed form to EHS for recordkeeping.