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I. Energy Control Procedures

Lockout/Tagout procedures shall be documented, EXCEPT 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 locked-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

A. General Lockout Procedures

The following general lockout procedures apply when all the above elements exist. The procedures shall be performed in order only by the authorized employee who is performing the service or maintenance.

**Shutdown Procedures (establishing lockout)**

1. Preparation for Shutdown

   Locate and identify all energy isolating devices that apply to the machine or equipment to be locked out. (If more than one energy source is involved, follow the machine specific lockout procedures below).

2. Notification

   Notify all affected employees that a lockout will take place.

3. Machine or Equipment Shutdown

   Shut down the machine or equipment by its normal shut down procedure.
4. **Isolate**

Isolate (disconnect) the machine or equipment from its energy source by operating the energy control device (e.g. – disconnect switch, circuit breaker, valve, etc.) to the “safe” or “off” position.

5. **Lockout**

An individually assigned lockout device shall be applied by the authorized employee so that the energy isolating device remains in the “safe” or “off” position.

6. **Relieve/Restrain Stored Energy**

All potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe by grounding, blocking, bleeding down, etc. . .

**NOTE:** 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 exists.

7. **Verify Isolation**

Before starting work on machines or equipment that have been locked out, the authorized employee shall verify that isolation and deenergization of the machine or equipment has been accomplished. First clear the machine or equipment of tools and materials and ensure employees are safely positioned or removed from the machine or equipment area. Then test all the operating controls by putting them in the “on” position to ensure that the energy source has been successfully disconnected.

**CAUTION:** Return the operating controls to the “off” or “safe” position before proceeding with servicing or maintenance.

**Restart Procedures (removing lockout)**

8. **Machine/Equipment Check**

Inspect the machine or equipment and the surrounding area to ensure that all nonessential items have been removed and to ensure that machine or equipment components are operationally intact.

9. **Verification**
Verify that operating controls on the machine or equipment are in the “off” or “safe” position and that all employees are safely positioned or removed from the area.

10. Remove Lock(s)

Remove the lockout device

11. Remove Isolation

Reenergize by connecting the energy source.

12. Notification

Notify all affected employees that the lockout device(s) have been removed.

B. Machine Specific Lockout Procedures

When any one of the eight elements listed in section V does not exist, machine-specific lockout procedures must be developed, documented, and utilized for the control of potentially hazardous energy before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup, or release of stored energy could occur and cause injury.

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 Environmental Health & Safety Officer can assist supervisors in developing machine-specific procedures.

Machine-specific lockout procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

- a specific statement of the intended use of the procedure
- specific procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy.
- specific procedural steps for the placement, removal, and transfer of lockout devices and the responsibility for them
- specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices and other energy control measures.
C. Tagout Procedures

If an energy isolating device is not capable of being locked out, authorized employees shall utilize a tagout system. Tagout without a lock is **ONLY** allowed when machinery or equipment is incapable of being locked out.

The following tagout procedures shall be performed **in order** only by the **authorized employee** who is performing the service or maintenance.

**Shutdown Procedures (establishing tagout)**

1. Preparation for Shutdown

   Locate and identify all energy isolating devices that apply to the machine or equipment to be tagged out. (If more than one energy source is involved, follow the machine specific lockout procedures above, substituting tagout for lockout).

2. Notification

   Notify all affected employees that a tagout will take place.

3. Machine or Equipment Shutdown

   Shut down the machine or equipment by its normal shut down procedure.

4. Isolate

   Isolate (disconnect) the machine or equipment from its energy source by operating the energy control device (e.g. – disconnect switch, circuit breaker, valve, etc. . .) to the “safe” or “off” position.

5. Tagout

   A tagout device shall be affixed by the authorized employee in such a manner as will clearly indicate that the operation or movement of the energy isolating device from the “safe” or “off” position is prohibited.

   When a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.
6. Relieve/Restrain Stored Energy

All potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe by grounding, blocking, bleeding down, etc. . .

NOTE: 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 exists.

7. Verify Isolation

Before starting work on machines or equipment that have been tagged out, the authorized employee shall verify that isolation and deenergization of the machine or equipment has been accomplished. First clear the machine or equipment of tools and materials and ensure employees are safely positioned or removed from the machine or equipment area. Then test all the operating controls by putting them in the “on” position to ensure that the energy source has been successfully disconnected.

CAUTION: Return the operating controls to the “off” or “safe” position before proceeding with servicing or maintenance.

**Restart Procedures (removing tagout)**

8. Machine/Equipment Check

Inspect the machine or equipment and the surrounding area to ensure that all nonessential items have been removed and to ensure that machine or equipment components are operationally intact.

9. Verification

Verify that operating controls on the machine or equipment are in the “off” or “safe” position and that all employees are safely positioned or removed from the area.

10. Remove Tag(s)

Remove the tagout device

11. Remove Isolation

Reenergize by connecting the energy source
12. Notification

Notify all affected employees that the tagout device(s) have been removed.

D. Special Lockout/Tagout Procedures

1. Group Lockout/Tagout

Primary responsibility shall be vested in one authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock).

Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained. Employees must NEVER depend upon someone else’s lockout/tagout device, and must ALWAYS use their individually assigned lockout/tagout device.

When more than one crew, craft, department, etc. . . is involved, assignment of overall job-associated lockout or tagout control responsibility shall be assigned to one authorized employee designated to coordinate affected work forces and ensure continuity of protection.

2. Shift or Personnel Changes

When machines or equipment must be serviced by more than one shift or personnel, specific procedures shall be utilized to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees.

Employees must NEVER depend upon someone else’s lockout/tagout device, and must ALWAYS use their individually assigned lockout/tagout device.

Lockout/tagout devices must NEVER be left on beyond an authorized employee’s work shift without supervisor approval.
3. Contractors

Whenever outside servicing personnel (contractors) are to be engaged in activities covered by OSHA’s Lockout Tagout standard (29 CFR 1910.147), lockout/tagout procedures must be exchanged and coordination of procedures must be discussed between the contractor and the college.

All affected college employees shall be informed of the restrictions and prohibitions of the contractor’s lockout/tagout procedures.

4. Lockout or Tagout Device Removal

The key/combination to each lockout device must be in the sole possession of the employee to which it was assigned. Only the authorized employee who applied the lockout or tagout device may remove it, except as noted below.

EXCEPTION:

When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed ONLY under the direction of a supervisor and with the permission of the Designated Safety Program Coordinator provided that:

1. Verification has been made that the authorized employee is not at the college.
2. All reasonable efforts have been made to contact the authorized employee to inform him/her that his/her lockout or tagout device has been removed.
3. The authorized employee is informed before returning to work that his/her lockout/tagout device has been removed.

II. Lock and Tag Requirements

Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the college for isolating, securing or blocking of machines or equipment from energy sources.
Lockout devices and tagout devices shall be singularly identified; shall be the only devices used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

A. Lockout Devices

1. Lockout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
2. Lockout devices shall be standardized within the facility in at least one of the following criteria: color, shape, or size.
3. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.
4. Lockout devices shall indicate the identity of the employee applying the device(s).

B. Tagout Devices

1. Tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
2. Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.
3. Tags shall not deteriorate when used in corrosive environments such as areas where acids and alkali chemicals are handled and stored.
4. Tagout devices shall be standardized within the facility in at least one of the following criteria: color, shape, or size; and additionally, print and format shall be standardized.
5. Tagout devices, including their means of attachment shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all environment-tolerant nylon cable tie.
6. Tagout devices shall indicate the identity of the employee applying the device(s).
7. 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.**

III. Training

Authorized employees will be trained at initial hiring and periodically thereafter unless there is a change in the procedures or when something new such as a new piece of equipment is installed.

IV. Program Evaluation

The Associate Director of Environmental and Safety Services reviews the Energy Control Program to ensure that the provisions of the program are effectively implemented and it continues to be effective.

V. Record Keeping

Training records shall be maintained for the duration of an employee’s employment. Training records shall be kept in the Department of Public Safety files and a copy shall be sent to the Human Resources and Risk Management Office and recorded in HR database.

VI. Glossary

**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.
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 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 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 A

GETTYSBURG COLLEGE

Energy Control Program

TRAINING CERTIFICATION

Training Date:_______________________Department:_________________________

Attendees:

________________________________ _______________________________

________________________________ _______________________________

________________________________ _______________________________

________________________________ _______________________________

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________________________________ _______________________________

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________________________________ _______________________________

I certify that the employees above have received Gettysburg College Lock Out Tag Out Training as required by 29 CFR 1910.147 and the Gettysburg College Lock Out Tag Out Program.

NAME OF TRAINER:_________________________________________

TITLE OF TRAINER:_________________________________________

TODAY’S DATE:____________________________________________

SIGNATURE OF TRAINER:___________________________________

Distribution:  Department of Public Safety
              Human Resources and Risk Management