

MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)
CONTROL OF HAZARDOUS ENERGY SOURCES POLICY
(LOCKOUT/TAGOUT)

Revised: 9/2007

This procedure establishes the minimum requirements for the lockout/tagout of energy sources. For the purpose of this policy, an energy source is defined as any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source that is capable of causing injury to employees. These procedures shall be used to ensure that before an employee performs any servicing or maintenance activities where the unexpected energization, start up or release of stored energy could occur and cause injury, all potential hazardous energy shall be isolated and locked/tagged out.

These procedures will not apply to servicing or maintenance activities which take place during normal production operations such as lubricating, cleaning and making minor adjustments and simple tool changes. Such servicing or maintenance with the machine or equipment energized will be permitted if the measures employed can be demonstrated to provide effective protection. Such alternative measures must be approved by the Director of Occupational Safety and Health Programs before they can be substituted for lockout/tagout.

All employees shall be instructed on the safety significance of the lockout/tagout procedure by the Director of Occupational Safety and Health Programs or his designee. Each new or transferred affected employee shall be instructed by his or her new supervisor in the purpose and use of the lockout/tagout procedure as part of the required Hazard Communication briefing for employees.

It is the responsibility of the MUSC Engineering & Facilities Director to ensure that all energy-isolating devices located on the MUSC campus that are used for the control of potentially hazardous energy sources, including valves, shall be marked or labeled to identify the equipment supplied and the type and magnitude of the energy being controlled and that the devices only be operated by authorized employees. This requirement can be met in one or two ways for machines, equipment or systems. The Engineering & Facilities Department must label or mark the energy-

isolating devices in permanent manner. The Engineering & Facilities Department may elect to do so in a campus-wide effort for all machines or equipment that will, at one time or another, need to be identified. As an alternative, the Engineering & Facilities Department could mark or label the devices permanently on an individual basis, for a specific machine or equipment at the time the lockout/tagout procedures are to be applied and the energy-isolating devices are to be secured.

When preparing for lockout/tagout, a survey should be made to locate and identify all energy sources to be certain which switch, valve or other energy isolating devices apply to the equipment to be locked/tagged out. More than one energy source, electrical, mechanical or other, may be involved. Questionable energy source problems shall be resolved before job authorization is obtained and lockout commences.

The sequence of lockout/tagout procedure involves six steps:

1. Notify all affected employees that a lockout/tagout is required and the reason for the outage.
2. Shut down operating equipment by the normal stopping procedure (depress stop button, open toggle switch, etc.).
3. Operate the switch, valve, or other energy-isolating device so that each energy source (electrical, mechanical, hydraulic) is disconnected or isolated from the equipment. Stored energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas steam or water-pressure must also be dissipated or restrained by methods such as grounding, repositioning, blocking or bleeding down.
4. Lockout/tagout the energy-isolating devices with and assigned individual lock or signed tag.
5. After ensuring that no personnel are exposed, and as a check on having the energy sources disconnected, operate the push button or other normal operating controls to make certain the equipment will not operate.
6. Return operating control to off position. The equipment is now locked out.

(For plug or cord type electrical equipment, only a tag must be applied to the plug by the employee performing the work).

When the job is complete and equipment is ready for testing or normal service, the equipment area should be checked to see that no one is exposed. When the equipment and equipment area is clear, remove all locks/tags. The energy-isolating devices may then be operated to restore energy to the equipment.

In the preceding steps, if more than one individual is required to lock/tag out equipment, each shall place his or her own personal lock on the energy-isolating device(s).

If the job has not been completed during one work shift, and another work shift will be working on the same equipment that has been locked out, these employees shall place their own personal lock on the energy-isolating device(s). Out going shift employees will remove their lock-out/tag-out devices once the new shift workers have placed their lock-out/tag-out devices on the equipment. Out going shift employees will review with the incoming shift employees of the work that has been completed and the location of lock-out/tag-out devices. A limited number of supervisory personnel will possess master keys for times when the individual who placed the lock on the equipment is not working on the shift when the equipment is to be restored to service. This supervisor shall not remove this lock until it has been verified that all individuals are safely removed from the equipment and area.

All equipment with the exception of plug and cord type electrical equipment shall be locked out to protect against accidental or inadvertent operation, when such operation could cause injury to personnel. Employees are prohibited from attempting to operate any switch, valve, or other energy-isolating device bearing a lock or tag. To do so will result in disciplinary action up to, and including, termination.

Locks used in conjunction with this policy shall be of such code complexity that removal by another means than the regular key would require excessive force or unusual techniques, such as metal cutting tools. Tags and attachment mechanisms shall be of such design that the possibility of accidental removal is minimized. Tagout devices/danger tags shall be warned against hazardous conditions if the equipment is re-energized and shall include the warning “Do Not Start, Do Not Open, Do Not Close, Do Not Energize” or other appropriate warning. Locks and tags may be obtained from your supervisor or by calling the Occupational Safety and Health Office at ext. 2-3604.

The Director of Occupational Safety and Health Programs shall cause periodic inspections to be conducted at least annually to ensure that the energy control procedures are being implemented. The inspection shall be performed by an authorized employee other than the one implementing the energy control procedures and shall correct any deviations or inadequacies observed. The Director of Occupational Safety and Health Programs shall certify that the inspections have been performed. The certification shall identify the machine or equipment inspected, the date inspected and the name of the person performing the inspection. Occupational Safety and Health will provide training to ensure that the purpose and function of the energy control procedures are understood by employees and that the knowledge and skills required for the safe application and removal of energy controls are available as needed. The training shall include the following:

1. Authorized employees shall receive training in the recognition of applicable hazardous energy sources and in the use of adequate methods and means of energy isolation and control.
2. Affected employees shall be instructed in the purpose and use of the energy control procedure.

3. Employees will be instructed on the six-step lock-out/tag-out procedure.
4. Employees will be trained on procedures for multi-shift work.
5. Employees will receive a demonstration on how to properly used approved locks and tags.
6. All other employees whose work operations are or may be affected by the energy control procedure shall be instructed about the procedure and how it affects their work operations.

Periodic retraining shall be provided for all authorized or affected employees whenever a periodic inspection reveals or there is a reason to believe that there are deviations from or inadequacies in the energy control procedure. The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures as necessary. Training records will be maintained and will contain the employee's name and date of training.

Whenever outside servicing personnel are engaged in activities covered by the scope of application of this policy, they shall be advised of the lock-out/tag-our procedures used by the Medical University by the Engineering & Facilities Director or his designee.