MEMORIAL UNIVERSITY

Department of Health and Safety

Lockout Tagout

1.0 Introduction

A formal lockout tagout program will be used by all employees and contractors whenever there is any installation, servicing and/or maintenance of machines or equipment where the energy source has the potential for accident or incident. Energy sources include but are not limited to the following: electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other.

2.0 Definitions

2.1 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 tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

2.2 Authorized employee

A person who locks out and 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.

2.3 Capable of being locked out

An energy isolating device is capable of being locked out and tagged out if it has a hasp or other means of attachment to which, or through which, a lock and tag can be affixed, or it has a locking mechanism built into it.

2.4 Energized

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

2.5 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.

2.6 Energy source

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

2.7 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.

2.8 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.

2.9 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.

2.10 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. Used in conjunction with lockout.

2.11 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.

3.0 Energy Control Program

3.1 Memorial will implement and utilize an Energy Control Program for the control of accidental release of potential energy sources. The intent of the program is to ensure that before any employee services equipment where the potential exists for unexpected energization or start-up of equipment or the release of stored energy, the machine or equipment is isolated from the energy source and rendered inoperative.

3.2 Memorial's energy control program consists of three core components:

1. Energy control procedures
2. Employee training
3. Periodic inspections and audits

3.2.1 Memorial's energy control procedures detail and document the specific information that an authorized employee must know to accomplish lockout tagout, including the scope, purpose, authorization rules, and techniques to be utilized for the control of hazardous energy.

3.2.2 Periodic inspections and audits of the energy control procedures being utilized within Memorial will ensure that the procedures and the requirements of the standard are being followed.

3.2.2.1 Periodic inspections and audits will be conducted to ensure that the energy control procedures continue to be implemented properly, that the employees are familiar with their responsibilities, and that any deviations or procedural inadequacies that are observed are corrected. These inspections and audits will take place at least annually, and will also include an assessment of the lockout tagout procedures used by contractors.

3.2.2.2 Where lockout tagout is used, the inspector must review each authorized employee's and affected employee's responsibilities under the procedure with that employee (group meetings are acceptable).

3.2.2.3 Memorial will certify that these periodic inspections and audits have been performed and will document the findings in writing.

3.3 Employee training and retraining is conducted to ensure that the purpose and function of the energy control program is understood by affected and authorized employees

3.3.1 Authorized employees will receive training on the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control. Affected employees will receive training on the purpose and use of the energy control procedure.

3.3.2 Other employees (those whose work activities are or may be in an area where energy control procedures may be utilized) will be instructed about the procedure and about the prohibition relating to attempts to restart or reenergize machines or equipment that are locked out and tagged out.

3.3.3 Additionally, Memorial will train employees in the following limitations of tags:

- Tags are used in conjunction with a lock.
- Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock.
- When a tag is attached to an energy isolating device, it is not to be removed without authorization and it is never to be bypassed, ignored, or otherwise defeated.
- Tags must be legible and understandable by all employees.
- Tags and their means of attachment must be made of materials that will withstand the environmental conditions encountered in the workplace.
- Tags used alone may evoke a false sense of security and their meaning needs to be understood as part of the overall energy control program.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

4.0 Retraining

4.1 All affected and authorized employees will be retrained:

- If there is a change in job assignments.
- If there is a change in machines, equipment, or processes that present a new hazard.
- If there is a change in the energy control procedures.
- If periodic inspections reveal that there are deviations in the energy control procedure.
- If Memorial has objective evidence that there are deviations from, or inadequacies in, the employee's knowledge or use of the energy control procedures.

5.0 Materials and Hardware

5.1 Memorial provides locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware as required ensuring the integrity of the lockout tagout program.

6.0 Lockout and Tagout Devices

6.1 All lockout and tagout devices must be:

- Durable and capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
- Singularly identified.
- The only devices used for controlling energy.
- Standardized within the facility in at least one of the following criteria: colour, shape, or size. Additionally, tagout devices must be standardized as to print and format.
- Identifiable, in that it indicates the identity of the employee applying the devices.

7.0 Locks

7.1 Locks must 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.

8.0 Tags

8.1 Tags will 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.

8.2 Tags must not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

8.3 They will also be standardized in print and format, substantial to prevent inadvertent or accidental removal.

8.4 Tags must have an attachment means 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.

8.5 Tags must warn against hazardous conditions if the machine or equipment is energized.

8.6 Tags must include a legend such as: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, and Do Not Operate.

9.0 Application of Energy Control Procedure

9.1 To safely apply energy control to machines or equipment (using lockout tagout devices), authorized employees must perform certain procedures in a specific order. The following are the sequential procedures that must be used for all lockout tagout procedures:

9.1.1 Preparation for shutdown

Before an authorized or affected employee turns off a machine or equipment, the authorized employee must have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

9.1.2 Machine or equipment shutdown:

The machine or equipment must be turned off or shut down using the procedures established for it to avoid any additional or increased hazards to employees as a result of the machine or equipment stoppage.

9.1.3 Machine or equipment isolation:

All energy-isolating devices that are needed to control the machine's energy source must be located. These devices must then be used to isolate the machine or equipment from its energy source(s).

9.1.4 Lockout tagout device application:

9.1.4.1 Authorized employees must affix lockout and tagout devices to each energy-isolating device. Lockout devices, where used, must be affixed in a manner that will hold the energy isolating device in a "safe" or "off" position.

9.1.4.2 Tagout devices must be affixed in a manner that will clearly indicate that the operation or movement of energy isolating device from the "safe" or "off" position is prohibited. If the tag cannot be affixed directly to the energy isolating device, the tag must 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.

10. 0 Stored Energy

10.1 After the energy-isolating device has been locked out and tagged out, all potentially hazardous stored or residual energy must be relieved, disconnected, restrained, and otherwise rendered safe.

11. 0 Verification of Isolation:

11.1 Before any work begins on machines or equipment that have been locked out and tagged out, an authorized employee must verify that the machine or equipment has been properly isolated and de-energized.

12. 0 Release from Lockout Tagout

12.1 Before lockout or tagout devices are removed and energy restored, the following procedures must be followed by an authorized employee:

12.1.1 Machine/equipment inspection

The work area must be inspected to ensure that non-essential items (e.g., tools, spare parts) have been removed and that all of the machine or equipment components are operationally intact.

12.1.2 Positioning of employees

The work area must be checked to ensure that all employees have been safely positioned or have cleared the area. In addition, all affected employees must be notified that the lockout tagout devices have been removed before the equipment is started.

12.1.3 Lockout or tagout device removal

The employee who applied the device must remove each lockout and tagout device from the energy-isolating device.

12.1.3.1 Exceptions (Note: there may be unique circumstance whereby an employee other than the one who applied the lockout tagout device will be required to remove the device. In those circumstances, the following protocol must be followed):

- When the authorized employee who applied the lockout and tagout device is not available to remove it, that device may be removed under the direction of the supervisor.

- The supervisor must verify that the authorized employee who applied the device is not on campus.
- The supervisor must make all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout and tagout device has been removed.
- The supervisor must ensure that the authorized employee knows that the lockout device has been removed before they resume work on campus.

13. Group Lockout Tagout

13.1 When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure that affords employees a level of protection equivalent to that provided by the implementation of a personal lockout tagout device.

13.2 Group lockout tagout devices follow the procedure outline below:

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

- An authorized employee will ascertain the exposure status of individual group members with regard to the lockout tagout of the machine or equipment.

- When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout tagout control responsibility will be delegated by the supervisor in charge to an authorized employee designated to coordinate affected work forces and ensure continuity of protection.

- Each authorized employee shall affix a personal lockout and tagout device to the group lockout device or comparable mechanism when they work and shall remove those devices when they stop working on the machine or equipment being serviced or maintained.

14. Testing of Machines

14.1 In some circumstances, employees need to temporarily restore energy to a machine or piece of equipment during servicing or maintenance to test and/or reposition the machine or piece of equipment. Lockout tagout devices may be removed temporarily in order to perform these tasks as long as the following steps are followed:

- The machine or equipment must be cleared of tools and materials.

- Employees must be removed from the machine or equipment area.
- All lockout tagout devices may then be removed and authorized employees may then proceed to energize and test or position the equipment or machinery.
- Following testing or positioning, all systems must be de-energized and energy control measures reapplied to continue the servicing and/or maintenance.

15. Contractors

15.1 Whenever contractors and other outside servicing personnel perform tasks covered by Memorial's Lockout Tagout standard, they must adhere to Memorial's requirements. Contractors will be required to demonstrate their Lockout Tagout program meets or exceeds Memorial's standards. If a contractor fails to demonstrate meeting or exceeding Memorial's standards, they will be required to comply with the methods and procedures outlined in Memorial's Lockout Tagout procedures.

16. Responsibility

16.1 The head of the unit/department will assume responsibility for implementing this procedure within the unit/department, including appropriate instruction, training, and provision of isolation devices; i.e., locks, tags, testers, and personal protective equipment. The final responsibility for ensuring that the procedure is followed in the workplace rests with individuals overseeing/supervising work activities. All employees who may have occasion to work with energy sources/processes shall be aware and follow these procedures.

Legislative reference: OH&S Regulations Part IX