

File Name: LO/TO Orig. Date: November 2005 Standard: OSHA: 29CFR1910147	Reviewed Date: January 2010
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**Messiah College
Lockout/Tagout
Policy and Procedure**

Policy: It is the policy of Messiah College to comply with regulations established under OSHA Control of Hazardous Energy Standard found at 29 CFR 1910147. This standard mandates training, audits and record keeping to ensure that workers will not be unintentionally injured by unexpected energization or start up of machines or equipment.

Objectives: To ensure that before any staff member performs any servicing or maintenance on machinery or equipment, where the unexpected energizing, start up or release of any type of energy could occur and cause injury, the machinery or equipment will be rendered safe to work on by being locked out and/or tagged out.

Definitions: **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 lock out tag out, 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 employees duties include performing servicing or maintenance covered under CFR 1910147

Equipment: Lockout/ Tagout Safety Training Video

Procedure:

Responsibility _____ Step Action

General Information

~ All equipment and machinery shall be locked out or tagged out to protect against accidental or inadvertent operation during any servicing or maintenance

activity. Anyone operating or attempting to operate any switch, valve, or other energy isolating device that is not locked or tagged out will be disciplined.

~ OSHA has promulgated standards that require lockout/tagout of machinery and equipment.

1. Control of Hazardous Energy (Lockout/Tagout) - 29 CFR 1910147.

~ Lockout is the preferred method of isolating machines or equipment from energy sources and shall be used whenever possible.

~ If tags are used additional steps shall be taken as may be necessary to provide the equivalent safety available from the use of a lockout device.

~ Equipment obtained or modified after January 2, 1990, will be equipped with lockout capability.

~ An energy source is any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

~ The terminology used in this instruction is derived from the OSHA standards.

Lockout/Tagout Procedures

This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. Note Specific Procedures for control of hazardous energy sources will be developed for any equipment or machinery before any maintenance or servicing is performed on it. Machines and equipment shall be evaluated using Appendix D (The Energy Source Determination Checklist). This information will be used to develop equipment specific LO/TO procedures.

Responsibility

Any staff member who could be exposed to

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hazardous energy sources shall be instructed in the safety significance of the lockout or tagout procedure. Staff members authorized to perform lockout or tagout shall receive training commensurate with their responsibilities and as per the OSHA requirements. Appendix A is a list of names and job titles of staff members authorized to lockout and tagout. Each new or transferred affected staff member and other staff members whose work operations are or may be in the area shall be instructed in the purpose and use of the lockout or tagout procedure. The job titles of the affected staff members are contained in Appendix A. Prior to lockout/tagout the Technician will brief all other personnel potentially exposed to the hazard in the area effected by the LO/TO. The procedures noted in the LOCKOUT OR TAGOUT SYSTEM PROCEDURE will be followed.

Preparation for Lockout or Tagout

The authorized staff member shall make a survey using Appendix B to locate and identify all isolating devices to be certain which switch(s), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out. More than one hazardous energy source and/or means of disconnect (electrical, mechanical, or others) may be involved. No work should proceed until the Authorized Employee has isolated all energy sources.

Lockout or Tagout System Procedure

Notify all affected Staff Members that a lockout or tagout system is going to be utilized and the reason therefore. The authorized staff member shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.

If the machine or equipment is operating, shut it down by the normal stopping procedure. This is usually done by depressing a stop button, open toggle switch, etc. In addition, ensure that all stored energy is dissipated or properly restrained.

Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s).

Lockout/tagout device application

1. Locks or tags shall be affixed to each energy isolating device only by an authorized staff member.
2. Locks and tags shall be singularly identified.
3. Locks shall be affixed in a manner that will hold the energy isolating devices in a safe or off position.
4. Tags, when used, shall be affixed in a manner that will clearly indicate that the operation or movement of the energy isolating device from the safe or off position is prohibited.
5. Tags that cannot be affixed directly to the energy isolating device 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. All potentially hazardous stored or residual energy shall be relieved, disconnected, restrained or otherwise rendered safe. (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).
7. After ensuring that no personnel are exposed, as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

CAUTION: RETURN OPERATING CONTROL(S) TO NEUTRAL OR OFF POSITION AFTER THE TEST.

Testing or Positioning of
Machines, Equipment, or
Components

In situations which lockout or tagout devices must be temporarily removed from the energy isolating device

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and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

- a. Clear the machine or equipment of tools and materials.
- b. Remove staff members from the machine or equipment area.
- c. Remove the lockout or tagout devices.
- d. Energize and proceed with testing or positioning.
- e. De-energize all systems and reapply energy control measures in accordance with the requirements set forth in this instruction.

Restoring Machines or Equipment to Normal Production Operations

After the servicing and/or maintenance is complete and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.

After all tools have been removed from the machine or equipment, guards have been reinstalled and staff members are in the clear, the Authorized Employee will remove all lockout or tagout devices and notify the affected staff members of their removal. Operate the energy isolating the devices to restore energy to the machine or equipment.

Procedure Involving more than one Person

In the preceding steps, if more than one individual is required to lockout or tagout equipment, each shall place his/her own assigned lockout device or tagout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each staff member will then use his/her own assigned lock to secure the box or cabinet. As each person no longer needs to maintain his or her lockout protection, that person will remove his/her lock from the box or cabinet.

Removal of Lockout/Tagout Devices by Other than the Authorized Staff Member

Lockout/Tagout devices shall be removed from each energy isolating device by the staff member who applied it, EXCEPT:

1. Lockout/tagout devices may be removed by the Facility Maintenance Service Manager if the authorized staff members who applied it is not available and:
 - a. It is verified that the authorized staff member who applied the device is not at the facility;
 - b. All reasonable efforts were made to contact the authorized staff member to inform him/her that his/her lockout or tagout device has been removed and;
 - c. The authorized staff member has this knowledge before he/she resumes work at that facility.

Shift or Personnel Changes

In the case of shift or personnel changes, a change over period will be established so that the authorized staff members may exchange their assigned locks/tags. Authorized personnel assuming control of lockout or equipment shall be fully briefed in the scope and stage of the work by those whom are being relieved.

Periodic Inspections

Periodically (at least annually) the effectiveness of the entire program will be evaluated by an authorized staff member(s) other than the one(s) utilizing the energy control procedure being inspected. Any deviations or inadequacies shall be documented and corrected. These annual evaluations will be conducted during the month of **NOVEMBER** each year. Evaluations will be conducted by the Facility Maintenance Service Manager.

Training

Training shall be given to all authorized, affected and other personnel as required by 29 CFR 1910.147 (C)(7). Appendix C provides Key Points for Lockout/Tagout Training Program and shall be used as a training outline along with the appropriate sections of this policy. Appendix C also includes a pre and post test to be given to staff at training.

In addition, a copy of the illustrated overview of the

standard is provided in Appendix C, copies can be made and handed out at the training session or transparencies can be made and projected by an overhead projector.

The Facility Maintenance Service Manager or designee will conduct training and prepare a record and certify that the staff member training has been accomplished. The certification will be made on Appendix D (Training Record).

The Facility Maintenance Service Manager will conduct retraining whenever there is:

- a. A change in their job assignments,
- b. A change in their job assignments, a change in machines, equipment or processes that present a new hazard, or
- c. When there is a change in the energy control procedures.
- d. Additional retraining shall also be conducted whenever the periodic inspection reveals, or whenever there is reason to believe, that there are deviations from or inadequacies in the staff members knowledge or use of the energy control procedures.

Human Resources will send out Appendix F annually in November for baseline employee training and information.

Electrical Lockout/Tagout 29 CFR 1910.147

Electrical work requires a lock and a tag to be used together. However, a tag can be used by itself only if the electrical disconnecting source does not have lockout capabilities.

Locks can be placed without a tag only under the following conditions:

1. Only one circuit or piece of equipment is de-energized.
2. The lockout period does not extend beyond the work shift.
3. Staff Members exposed to the hazards associated with re-energizing the circuit or equipment are familiar with this procedure.

Hilary Kreider 1/20/2010
Hilary Kreider, Environmental Health Safety Manager Date

Daniel Smith 1/29/10
Daniel Smith, Facility Maintenance Service Mgr. Date

Russell J. Ehrich
Russ Ehrich, Project Manager Date

Cindy Burger 1/22/10
Cindy Burger, Safety Director Date

Amanda Coffey 1-27-10
Amanda Coffey, Human Resource Director Date

"Note - The signed copy of this procedure is filed in the Facility Service Department. By signing this policy you have agreed to enforce the contents and adhere to standards".

Appendix A
List of Authorized Lockout and Tagout Individuals

Work Center	Lockout/Tagout Kit	Name/Title	Mechanical Yes or No	Electrical Yes or No
Facility Service Manager	Authorized	D. Smith	Yes	Yes
GMM Area 1	Authorized	Doug McCleaf	Yes	Yes
HVAC	Authorized	K. Kauffman	Yes	Yes
GMM Area 3	Authorized	K. Steele	Yes	Yes
GMM Area 4	Authorized	D. Barclay	Yes	Yes
Inventory	Authorized	M. Strayer	Yes	Yes
Lead Tech.	Authorized	D. Soltis	Yes	Yes
Electrician	Authorized	R. Luzier	Yes	Yes
Electrician	Authorized	C. Markley	Yes	Yes
Plumber	Authorized	B. Fleming	Yes	Yes
Plumber	Authorized	P. Groft	Yes	Yes
PMM	Authorized	S. King	Yes	Yes
PMM	Authorized	J. Jackson	Yes	Yes
GMM	Authorized	J. Soltis	Yes	Yes
GMM	Authorized	D. Nealy	Yes	Yes
GMM	Authorized	B. Shirk	Yes	Yes
Lock/Key	Affected	G. Ringer	Yes	Yes
Project Manager	Authorized	R. Ehrich	Yes	Yes
Fire Safety	Authorized	J. Fite	Yes	Yes
GMM	Affected	B. Grove	Yes	Yes
	Affected	E. Daugherty	Yes	Yes

NOTE: AUTHORIZED ELECTRICAL LOCKOUT/TAGOUT REQUIRES QUALIFIED WORKER IN ACCORDANCE WITH 29CFR 1910.

Appendix B
Lockout/Tagout Procedure/Checklist
Energy Source Determination

DATE: _____ CONDUCTED BY: _____

In order to determine all energy sources for each piece of equipment, all questions must be answered. If the question does not apply, write N/A in the blank. Circle yes or no or fill in the blank.

Building: _____ Area #: _____

Tag #: _____

Equipment Name: _____

1. Does this equipment have:

- a. Electric power (including battery)? Yes or No
If yes, Motor Control Center (MCC) or power panel and breaker number

Does it have a lockout device? Yes or No

Battery Location: _____

Battery disconnect location: _____

- b. Mechanical power? Yes or No

Mark each type of energy source that applies:

1. Engine driven: Yes or No

If yes, switch or key location _____

Is lockout device installed? Yes or No

If no, method of preventing operation _____

2. Spring loaded? Yes or No

If yes, is there a method of preventing spring activation? Yes or No

If no, how can spring tension be safely released or secured? _____

c. Chemical system? Yes or No

If yes, location of main control/shutoff valve _____

Can control/shutoff valve be locked in off/closed position? Yes or No

If no, location of closest manual shutoff valve _____

Does manual shutoff valve have lockout device? Yes or No

If no, what is needed to lock valve closed? _____

Is there a bleed or drain valve to safely reduce system pressure and drain system of chemicals? Yes or No

If no, how can system be drained and neutralized? _____

What personal protective clothing or equipment is needed for this equipment? _____

d. Thermal energy? Yes or No

If yes, location of main control/shutoff valve _____

Can control/shutoff valve be locked in off or closed position? Yes or No

If no, location of closest manual shutoff valve _____

Does manual shutoff valve have lockout device? Yes or No

Appendix C

Key Points for Lockout/Tagout Training Program

General Rules

- ~ Procedures developed, documented and utilized for control of potentially hazardous energy.
- ~ Staff Member has provided locks, tags, chains, wedges, key blocks, adapter pins, self locking fasteners, or other hardware for isolating, securing or blocking machines or equipment.
- ~ Lockout/Tagout devices singularly identified.
- ~ Lockout/Tagout devices are used only for controlling energy.
- ~ Lockout/Tagout devices are not used for other purposes.
- ~ Durable lockout/tagout devices must be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
- ~ For tagout devices, also standardized print and format.
- ~ Identifiable lockout/tagout devices must indicate the identity of the staff member applying the devices.
- ~ When major modifications are made to machinery electrical systems or when new machinery is installed, the energy source must be designed to accept a lockout device.
- ~ Policy review will be conducted at least annually.
 - *Performed by authorized staff members and management other than those utilizing energy control procedure under inspection.
 - *Designed to correct any deviations or inadequacies observed and policy modification.
 - *Include review of each authorized staff members responsibilities under the procedure(s). If tagout is used, include review of limitations of tags.

Pre Test /Post Test

Directions: Read each question carefully and circle the correct answer

1. The term Lock out/Tag out is best defined as:
 - A. A. Blocking the flow of energy from a power source to a piece of equipment
 - B. B. Shutting down a piece of equipment for service or maintenance work
 - C. C. Applying a lock to a piece of equipment to show that it is not being used
 - D. D. Applying a tag to a piece of equipment to show that it is not being used

2. A lock out procedure is used whenever
 - A. A. The servicing or repair work to be done places an employee in danger
 - B. B. An equipment guard must be removed for servicing
 - C. C. A power source can be locked out for servicing
 - D. D. All of the above

3. Tagout refers to
 - A. A. The warning tag attached to a power source or piece of machinery telling other not to restart
 - B. B. The process of blocking energy from reaching a piece of equipment
 - C. C. Signing off that a piece of equipment has been serviced
 - D. D. A device that physically prevents others from restarting equipment

4. An authorized employee is one who
 - A. A. Works on machinery that is subject to lockout
 - B. B. Services machinery that is subject to lockout
 - C. C. Actually locks out machinery
 - D. D. Both B and C

5. An affected employee is one who
 - A. A. Works on machinery that is subject to lockout
 - B. B. Works in an area where lockout is used
 - C. C. Services machinery that is subject to lockout
 - D. D. Both A and B

6. Zero energy state refers to

- A. A. A power source that is locked out for servicing
- B. B. A power source that is locked out and tagged out for servicing
- C. C. The release of all stored energy from a power source
- D. D. The release of locks and tags so that energy can be restored

7. It is all right to lend your lock to a coworker if:

- A. A. The coworkers lock is in another part of the building
- B. B. The coworkers lock is in another building miles away from where he is working
- C. C. You know that you won't be using your lock
- D. D. None of the above

8. If you come across a piece of equipment that is turned off but not locked out, you should

- A. A. Ask someone working in the area if it can be turned back on
- B. B. Notify someone who is authorized to perform lockout
- C. C. Never restart the equipment
- D. D. Both A and B

9. A lock audit must be performed by

- A. A. An authorized person who works with the LO/TO procedure to be inspected
- B. B. An authorized person who doesn't work with the lock out procedure to be inspected
- C. C. A person from the safety department
- D. D. None of the above

10. LO/TO procedures are in place to

- A. A. Prevent the accidental start up of equipment
- B. B. Prevent workers from taking short cuts while servicing equipment
- C. C. Prevent accidents
- D. D. All of the above

NAME: _____

Date: _____

Answers: 1. A, 2. D, 3. A, 4. D, 5. D, 6. C, 7. D, 8. D, 9. B, 10. D

Appendix E

Methods of Tag and Lock Identification

- **** Number lock sequentially (1, 2, 3, etc.). Record lock number on Appendix A to identify staff member assigned.
- **** One key will be issued to the staff member and the second key will be issued to the Building and Property Service Office/Key Services.
- **** Tags will always be secured by a nylon self locking tie, which will require cutting the nylon self locking tie to remove.

Note: Other methods of identifying locks and tags are acceptable. These other methods are specified in 29CFR1910.147 (c) (5).

Appendix F

TO: All Employees of Messiah College
From: Amanda Coffey, Director of Human Resources
Date: December 1, 2006
RE: Control of Hazardous Energy (Lockout/Tagout)

In early 1990 the Occupational Safety and Health Administration (OSHA) created a standard (29 CFR 1910.147) that required organizations to establish the Lockout/Tagout policies and procedures to protect workers from the accidental release of energy. These standards were created so that workers could safely repair and service equipment.

It is the policy of Messiah College to comply with Federal Regulations established under the OSHA Control of Hazardous Energy Standard, but more importantly, it is our goal to provide a safe workplace for all of our employees. For this reason it is critical that all employees understand the importance of not trying to re-energize any equipment that is turned off and Locked or Tagged out.

Lockout is the process of blocking the flow of energy from a power source to a piece of equipment and keeping it blocked out. Lockout is accomplished by installing a lockout device at the power source so that equipment powered by that source cannot be operated. A lockout device is a lock, block, or chain that keeps a valve or lever in the off position.

Tagout is accomplished by placing a tag on the power source. The tag acts as a warning not to restore energy. The tag is not a physical restraint. Tags clearly state "Do Not Operate" and are applied by hand.

If you notice a lock or tag device on a piece of equipment and do not notice any Facility Service employees in the area, please do not make any efforts to restart the equipment without first calling 6011.

The accidental start up of equipment that was being serviced results in over 120 deaths and 28000 lost work days in America each year. We want our environment to be safe for our employees, as well as our students and visitors to our campus. Should you have any questions regarding our policy on The Control of Hazardous Energy OSHA Standard please feel free to contact me.