



INDIANA UNIVERSITY

OFFICE OF THE EXECUTIVE VICE PRESIDENT
FOR UNIVERSITY ACADEMIC AFFAIRS

University Environmental Health and Safety

Control of Hazardous Energy Program (Lockout/Tagout Program)

June 13, 2017

1. INTRODUCTION

1.1. Purpose

Indiana University has developed the Control of Hazardous Energy Program or Lockout/Tagout (LOTO) Program to safeguard employees against the unexpected release of hazardous energy. Sources of hazardous energy may be any source of radiation, electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy. This Program establishes the minimum performance requirements for the control of such hazardous energy in accordance with the Occupational Safety and Health Administration (OSHA) Standards contained within [29 CFR 1910.147](#). Further performance requirements and provisions for achieving an electrically safe work condition can be found in the Indiana University Electrical Safety Program.

1.2. Scope

This Program applies specifically to the servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machines or equipment, or release of stored energy could cause injury to employees. Normal production operations are also covered by this Program when:

- An employee is required to remove or bypass a guard or other safety device; or
- An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

The following exceptions are not covered by this Program:

- Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start-up of the equipment is controlled by the unplugging of the equipment from the energy source and the plug remains under the exclusive control of the employee performing the servicing or maintenance;
- Minor tool changes and adjustments, and other minor servicing activities, which take place during normal maintenance operations, if they are routine, repetitive, and integral to the use of the equipment, provided that the work is performed using alternative measures which provide effective protection; and
- Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water or petroleum products when they are performed on pressurized pipelines, provided that the supervising department demonstrates:
 - a) Continuity of service is essential;
 - b) Shutdown of the system is impractical; and
 - c) Documented procedures are followed, and special equipment and procedures are used which will provide proven effective protection for employees.

2. AUTHORITY AND RESPONSIBILITY

2.1. Environmental Health and Safety (EHS) is responsible for:

- 2.1.1. Developing, updating, and promulgating basic training and standard guidelines;
- 2.1.2. Maintaining basic LOTO training records;
- 2.1.3. Maintaining a list of departmental Program Coordinators;
- 2.1.4. Validating Program implementation; and
- 2.1.5. Revising and updating the Program as necessary.

2.2. Departments involved in tasks covered by the program shall be responsible for:

- 2.2.1. Assigning a Program Coordinator and informing EHS that this individual will be responsible for Program implementation and oversight within the affected Department;
- 2.2.2. Identifying equipment and energy sources where LOTO protection is necessary;
- 2.2.3. Developing equipment-specific energy control procedures as necessary;
- 2.2.4. Providing all necessary LOTO equipment; and
- 2.2.5. Maintaining a current list of all authorized employees.

2.3. Program Coordinators shall be responsible for:

- 2.3.1. Removing or approving the removal a lockout device with approved methods, when necessary, if the initial authorized employee is unavailable;
- 2.3.2. Approving the use of specific lockout devices to be used for each type of equipment that may need to be serviced;
- 2.3.3. Ensuring that all affected employees receive training on the appropriate procedures as necessary for their particular job duties;
- 2.3.4. Taking the appropriate action when an employee or supervisor reports unsafe conditions;
- 2.3.5. Conducting or coordinating periodic inspections of LOTO procedures;
- 2.3.6. Pursuing the appropriate corrective action for employees that are not complying with the LOTO Program or any other energy control procedures; and
- 2.3.7. Ensuring coordination, cooperation, and conveyance of necessary information between employees and outside contractors when the unexpected energization or start-up of machines or equipment, or release of stored energy could cause injury to employees or contractor employees.

2.4. Employees involved in tasks covered by the Program shall be responsible for:

- 2.4.1. Complying with all aspects of the LOTO Program and related procedures;
- 2.4.2. Attending and completing basic LOTO training; and
- 2.4.3. Notifying the supervisor of any unsafe conditions.

3. PROGRAM ELEMENTS

3.1. General Procedures and Employee Protection

Execution of LOTO procedures shall only be performed by authorized employees in accordance with the requirements of this Program. Affected employees shall be notified by the authorized employee prior to the application and removal of LOTO devices. No other employee may attempt to start, energize, or use a machine or piece of equipment that is locked out or tagged out. A LOTO device shall ONLY be removed from equipment by the employee who applied the device unless 1) the employee who applied the lockout or tagout device is unavailable and 2) approval has been received from the Program Coordinator to remove the device. When servicing and/or maintenance is performed by a crew, craft, department or other group, the group shall utilize a group LOTO procedure that provides an equivalent level protection to that of an individual LOTO procedure.

3.2. LOTO Devices and Hardware

Locks, tags, gang hasps, chains, gate valve locks, ball valve locks, wedges, key blocks, adapter pins, self-locking fasteners, and any other equipment necessary for complying with this Program shall be provided to employees by the supervising department. LOTO devices shall be identifiable to the authorized employee; shall be the only device(s) used for controlling energy; and shall not be used for other purposes. Devices must meet the following criteria:

3.2.1. Durable

- LOTO devices shall be capable of withstanding the environment for the expected duration of the LOTO;
- Tags 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; and
- Tags shall not deteriorate when used in corrosive environments such as where acid and alkali chemicals are handled and stored.

3.2.2. Standardized

- Lockout devices shall be standardized in at least one of the following criteria: color; shape; or size; and
- Tags shall use the same print and format.

3.2.3. Substantial

- 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; and
- Tags, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. The means of tag attachment 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.

3.2.4. Identifiable

- LOTO devices shall indicate the identity of the employee applying the device(s); and
- Tags devices shall warn against the specific hazards if the machine or equipment is energized and shall include a hazard statement such as the following: "Do Not Start.", "Do Not Open.", "Do Not Close.", "Do Not Energize.", or "Do Not Operate."

3.2.5. Approval

- Only LOTO devices approved by the Program Coordinator shall be used to perform a LOTO.

3.3. Equipment-Specific Energy Control Procedures

The Program Coordinator for each department shall coordinate the inspection of facilities and consult with employees and supervisors assigned to service and maintain equipment/machinery in order to develop equipment-specific energy control procedures. Equipment-specific energy control procedures shall be developed, documented, and utilized for the control of potentially hazardous energy during servicing and maintenance of equipment. If an energy isolating device is capable of being locked out, equipment-specific LOTO procedures shall specify the use of a lockout system. If an energy isolating device is not capable of being locked out, equipment-specific LOTO procedures may specify the use of a tagout system. Equipment that possesses a single hazardous energy source that can be easily identified and isolated with a single lock may be exempt from equipment-specific procedures. All exemption criteria specified under [29 CFR 1910.147\(c\)\(4\)\(i\)](#) must be adequately met for the exemption. Contact EHS for consultation if uncertain the equipment is exempt from equipment-specific lockout procedures.

LOTO procedures shall specify additional elements as necessary to provide an equivalent level of protection during a tagout versus a lockout. Additional means to be considered as part of the demonstration of full employee protection during a tagout shall include the implementation of

additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization. If typical equipment-specific LOTO procedures must be altered due to irregular conditions, the Program Coordinator must approve these alterations prior to the LOTO.

All equipment-specific LOTO procedures shall be designed to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked or tagged out before any employee performs servicing or maintenance on equipment. Equipment-specific LOTO procedures shall be designed to follow the general sequence of energy control (See Appendix C) and the general sequence of re-energization (See Appendix D); however, these procedures should include specific procedural details on how to safely control energy during servicing or maintenance of the specific equipment. See Appendix E for an example of an approved equipment-specific LOTO procedure. Other formats are acceptable upon approval by IUEHS, but all procedures must provide an equivalent level of protection.

3.4. Testing or Re-positioning of Equipment

In situations in which LOTO devices must be temporarily removed from the energy isolating device to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

- 1) Clear the machine or equipment of tools and materials;
- 2) Notify and remove all employees from the machine or equipment area;
- 3) Remove the LOTO devices;
- 4) Energize and proceed with testing or positioning; and
- 5) De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

3.5. Group Lockout or Tagout

A group LOTO shall be performed in accordance with the general procedures listed in this Program and include the following specific requirements:

- One authorized employee shall be designated as responsible for the group LOTO;
- The hazardous energy control procedures shall be reviewed with each group member;
- When more than one crew, craft, department, etc. is involved, the overall job-associated LOTO control responsibility shall be assigned to one authorized employee designated to coordinate affected work forces and ensure continuity of protection for the group; and
- Each authorized employee shall affix a personal LOTO 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.

3.6. Shift or Personnel Changes

The supervising department shall ensure continuity of LOTO protection by establishing provisions for the orderly transfer of lockout or tagout devices between off-going and oncoming employees for the purpose of minimizing exposure to hazards from the unexpected energization, start-up of the machine or equipment, or the release of stored energy.

Each employee shall be responsible for removing his/her own lockout device and tag at the completion of his/her shift. If the work is to cease until the following day, the supervisor shall place his personal lock and tag on the equipment and the employees shall remove their lock and tag. When work resumes, the employees shall affix his/her personal lock and tag to the equipment and the supervisor shall remove his/her lock and tag.

3.7. Lockout or Tagout Device Removal

Each LOTO device shall ONLY be removed from an energy isolating device by the employee who applied the device. When the authorized employee that applied a LOTO device is not available, the employees' immediate supervisor, under the approval of the department Program Coordinator, may remove the device. The department Program Coordinator shall verify that the employee who applied the device is not at the facility by:

- Inspecting the area, machine, equipment, or process to ensure that employee has left the facility;
- Checking the time card or other record to determine if the employee has left the facility;
- Contacting fellow employees to determine if the employee is still in the facility; and
- Attempting to contact the employee at home.

When an employee cannot be located:

- The direct supervisor for that employee should contact the department Program Coordinator for approval to remove the LOTO device;
- Continue to make all reasonable efforts to contact the employee to inform him/her that his/her LOTO device has been removed; and
- Ensure the authorized employee has knowledge regarding the removal of LOTO device before resuming work at the facility prior to his/her scheduled shift.

The absentee verification and notification process shall be documented by the applicable supervisor on the "Absentee Lock/Tag Removal Form" and shall be signed by the employee(s) whose LOTO device(s) were removed before they are authorized to resume work in that facility (See Appendix B).

3.8. Periodic Inspection of Energy Control Procedures

In [29 CFR 1910.147\(c\)\(6\)\(i\)](#), the standard states that the employer shall conduct a periodic inspection of energy control procedures at least annually. The purpose of periodic inspections is to correct any deviations or inadequacies identified by the inspector. This inspection should validate that the procedure is appropriate for the equipment and that the requirements of this Program are being followed appropriately by the authorized employee(s) performing the shutdown during the inspection. Periodic inspections shall be performed by an observing authorized employee (i.e. an authorized employee not participating in the LOTO) using the periodic inspection checklist (See Appendix F). The inspection shall be performed while directly observing other authorized individual(s) participate in the shutdown. The immediate supervisor shall be notified immediately if any of the inspection checklist criteria are not met during an inspection. The inspecting employee shall report any deviations or inadequacies to the immediate supervisor, and take appropriate action to ensure the safety of all affected individuals. The supervising department shall certify that periodic inspections have been performed through preventative maintenance documentation Or equivalent documentation through other preventative maintenance systems (See Appendix G).

4. Training and Recordkeeping

4.1. Training and Retraining

Supervising departments shall maintain a current list of all authorized employees. A copy of the list shall be accessible to IUEHS upon request to the department Program Coordinator.

IUEHS shall provide basic LOTO training for authorized employees to ensure that the purpose and function of the energy control program are understood and that employees possess the basic knowledge and skills required for the safe application, usage, and removal of energy controls. Each authorized employee shall receive training in 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. Authorized employees shall also be trained in the following specific limitations of tags:

- 1) 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;
- 2) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated;
- 3) Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective;
- 4) Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace;
- 5) Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program; and
- 6) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

The supervising departments are responsible for training employees and validating comprehension of equipment-specific LOTO procedures. The supervising department is also responsible for instructing any affected employees on the purpose and use of energy control procedures.

Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that presents a new hazard, or when there is a change in the energy control procedures.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the supervising department or IUEHS has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

The training shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

4.1.1. Recordkeeping

- 1) Each department shall verify that training is current. Basic lockout/tagout training records shall be maintained by IUEHS. Employee training records shall contain the employee name, date of training, and the subject of the training;
- 2) Absentee lock/tag device removal forms (Appendix B) shall be maintained by the supervising department for the lifetime of the applicable machine or equipment.
- 3) Specific energy control procedures shall be readily accessible in the area of the specific equipment. Note: This may be accomplished by electronic means, by posting procedures on the equipment, or by providing a binder in the mechanical room. Copies of all energy control procedures shall be kept by the department Program Coordinator. Energy control procedures shall be available to all affected employees upon request; and

- 4) Periodic inspection documentation, at a minimum, shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, any deviation or inadequacy, any corrective action taken, the employees included in the inspection, and the person performing the inspection (See Appendix G).

5. REFERENCES

- [29 CFR 1910.147 - The Control of Hazardous Energy](#)
- [Electrical Safety Program](#)

6. REVISIONS

Revised: June 13, 2017



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APPENDIX A – GLOSSARY

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 or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
2. **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 covered by the LOTO Program.
3. **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.
4. **Energized:** Connected to an energy source or containing residual or stored energy.
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.
6. **Energy source:** Any source of radiation, electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
7. **Hot tap:** A procedure used in the repair, maintenance and service activities which involves welding on 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.
8. **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.
9. **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.
10. **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.
11. **Setting up:** Any work performed to prepare a machine or equipment to perform its normal production operation.

12. **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.

13. **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.



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APPENDIX B: ABSENTEE LOCK/TAG REMOVAL FORM

By signing this document, the supervisor certifies that all reasonable attempts have been made to contact the individual whose device is to be removed. The supervisor removing the affected individual's energy control device will assure that this individual has knowledge of his device being removed before he/she resumes work at the facility.

Signature of Supervisor Initiating Removal: _____

Date/Time Lock/Tag Removed: _____

Name of Individual (i.e. whose device was removed): _____

Location/Name of Equipment (i.e. where device was removed): _____

Type of Energy (e.g. Electric, Radiation, Mechanical): _____

Detailed Reason for Removal:

Was this individual contacted and aware that his/her control device was going to be removed?

- Yes No

Phone Number or Method of Contact: _____

Date/Time Contact was Attempted: _____

By signing this document, the individual whose lockout/tagout device was removed certifies that they have been made aware of the fact that their energy control device identified above was removed under

the supervision of an authorized supervisor and realize that they no longer have this equipment under isolation.

Signature:

Date:



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APPENDIX C: GENERAL SEQUENCE OF ENERGY CONTROL

Preparation for Shutdown

- Before an authorized employee or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type of energy, the magnitude of the energy, the hazard to be controlled, and the method or means to control the energy.
- Notify all affected employees that servicing or maintenance is required on a machine or piece of equipment and that the machine or piece of equipment must be shut down and locked out to perform the servicing or maintenance.

Machine or Equipment Shutdown

- The machine or equipment shall be turned off or shut down using the procedures established for that machine or equipment.
- If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

Machine or Equipment Isolation

- De-activate the energy isolating device(s) so that that machine or equipment is isolated from the energy source(s).

Lockout or Tagout Device Application

- An authorized employee shall lockout the energy isolating devices with assigned individual lock(s). A tag shall be affixed with the lock to identify the employee who applied the lockout device. Or if the equipment cannot be locked out, seek appropriate approval to use a tag and follow any additional control requirements.

Stored Energy

- Following the application of lockout or tagout devices, all stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounds, repositioning, blocking, bleeding down, etc.

Verification of Isolation

- Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate;
- Return operating control(s) to "neutral" or "off" position after the test; and
- The equipment is now locked or tagged out.



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APPENDIX D: GENERAL SEQUENCE OF RE-ENERGIZATION

Restoring Equipment to Normal Operations

- Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact;
- Check the work area to ensure that all employees have been safely positioned or removed from the work area;
- Verify that the controls are in the neutral or “off” position;
- Notify all affected employees that the lockout devices are being removed;
- Remove the lockout devices and reenergize the machine or equipment. Note: The removal of some forms of blocking may require re-energization of the machine before safe removal; and
- Notify affected employees that the service or maintenance is completed and the machine or equipment is ready for use.




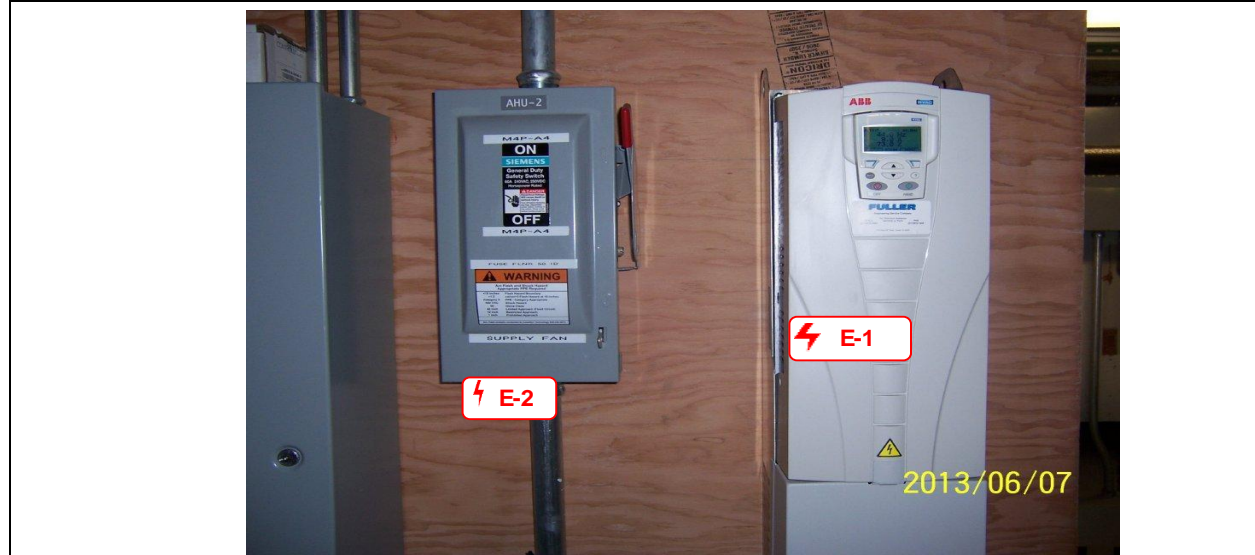
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APPENDIX E: EXAMPLE EQUIPMENT-SPECIFIC LOTO PROCEDURE

Building: Riley Research		Room/Location: 499A
Date: 6/7/2013	CAUTION	
 2 LOCKS & TAGS NEEDED	<p>This procedure establishes the minimum requirements for the control of hazardous energy when maintaining or servicing this equipment. Lockout or tagout shall be performed only by authorized employees. Failure to follow the lockout or tagout procedures will result in disciplinary action up to and including termination of employment.</p>	



ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS

ID	Source	Location	Method	Check	Device
	Electrical 480V	Supply Fan VFD is located ... and is marked AHU2-A, SF-2	Push "off" button on control pad of Supply Fan VFD marked AHU2-A, SF-2 VFD arm/lever handle to "off", Then Lock Out.	▼	Gang Hasp, Lock & Tag
	Electrical 480V	AHU2-A Disconnect Box located west of unit, and marked AHU2-a, Supply Fan, M4P-A4	On AHU2-A Supply Fan Disconnect, Marked AHU2-A, SF-2, Pull Arm/Lever Down to "Off" Position, Then Lock Out.		Gang Hasp, Lock & Tag

OPENING A GUARD DOES NOT CONSTITUTE A LOCKOUT

CP = CONTROL PANEL	C = CHEMICAL	E = ELECTRICAL	G = GAS	GL = GLYCOL	P = PNEUMATIC	S = STEAM	V = VALVE	W = WATER
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Any modifications must be shown in procedure. Contact Control Center to update procedure.





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ID: IN014-499A-AHU2-A Facility: Riley Research Location: Room 499A Date: 6/7/2013

Lockout/Tagout Steps

Notes:

Shutdown, Lock, Tag & Test Sequence

1	Notify	Verify shutdown request approved for PM, call control room on PTT or call 274-5229 and inform them that AHU2-A, Room 499A will be shutdown temporarily for PM
2	Review Lockout Procedure	"Gang Hasp" with padlocks and tags will be needed to completely shutdown Supply Fan VFD marked "AHU2-A, SF-2".
3	Perform Machine Stop	Push "off" button on control pad of Supply Fan VFD marked AHU2-A, and SF-2 VFD arm/lever handle to "off".
4	Isolate Energy	Once unit has stopped, pull AHU2-2 SF-2 Main Disconnect Panel Box arm/lever to "off" position.
5	Lockout Energy	Install gang hasp, padlock, & tag on AHU2-A, SF-2 VFD arm/lever. Install gang hasp, padlock, & tag on SF-2 Main Disconnect Panel Box arm/lever.
6	Dissipate Energy	Not applicable on this unit.
7	Attempt Restart	Push "on" soft button on AHU2-A, SF-2 VFD control pad to see if unit starts up.
8	Perform Service	See PM WO steps. Document as appropriate.

Restore To Service Sequence

1	Check Machine	Make sure that filters are in place and secure, grease is wiped down/off of fittings, remove old filters/belts from area, doors are closed and unit is ready to be put back in service.
2	Check Area	Pick up and remove old filters/belts, rags, grease gun, and any tools from area. Check to ensure tha all individuals have been safely positioned or removed. Notify all affected employees that the lockout devices are being removed.
3	Remove Lockout Devices	Remove all padlocks, gang hasp lockout devices and tags off of AHU2-A, SF-2 Disconnect Box and push arm/lever up to "On" position. Remove all padlocks, gang hasp lockout devices and tags off of AHU2-A, SF-2 VFD, Turn arm/lever handles on supply fan VFD to "on" position. Push the supply fan VFD's key pad "auto" button and let unit ramp up. Make sure equipment is running proficiently.
4	Notify	Notify control room via PTT or by calling 274-5229 that the servicing/maintenance of IN014-499A-AHU2-A unit is completed and the equipment is ready for use.



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APPENDIX F: LOTO PERIODIC INSPECTION CHECKLIST

The immediate Supervisor and Program Coordinator shall be notified immediately if any of the following criteria are not met during an inspection. The inspecting employee shall report any deviations or inadequacies, and take appropriate action to ensure the safety of all affected individuals.

- Authorized employee(s) notified all affected employees that the machinery or equipment will be locked and tagged out while servicing and maintenance is being completed.
- Authorized employee(s) identified all types of energy sources, potential hazards, and all control devices that were related to the piece of machinery or equipment that is to be serviced.
- Procedures are legible and adequately isolate the equipment during maintenance and servicing.
- Authorized employee(s) turned off all necessary operating controls.
- Authorized employee(s) located all energy sources.
- Authorized employee(s) locked out and tagged out the energy-isolating device in the "OFF" or "SAFE" position.
- The lock or tag out device was properly applied and labeled by the Authorized Employee(s) for the shutdown.
- Authorized employee(s) isolated all energy sources by blocking, bleeding and venting stored energy as found in springs, hydraulic systems, and pneumatic systems.
- Authorized employee(s) verified isolation of the equipment from energy sources.
- Once maintenance and/or servicing of the machine or equipment was complete, authorized employee(s) confirmed that tools were cleared away prior to restart, affected individuals were safely positioned prior to restart, affected individuals were notified that the lockout devices were being removed and finally, all affected individuals were notified that the machine and equipment was ready for use after restart.



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APPENDIX G: LOTO PERIODIC EQUIPMENT INSPECTION FORM

Equipment ID: _____

Date	Inspector Signature	Authorized Employee(s) Signature	Deviations and Corrective Action Taken (if applicable)
<i>xx/xx/xxxx</i>	<i>John Doe</i>	<i>Jane Doe</i>	<i>Lock out procedure was missing a step after a renovation project. Procedures were updated and corrected.</i>

*By signing this document, the inspector certifies that the periodic inspection was performed in accordance with the LOTO periodic inspection checklist.