



LOCKOUT/TAGOUT PROGRAM

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Revised March, 2014

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FLORIDA ATLANTIC UNIVERSITY

LOCKOUT/TAGOUT PROGRAM

29 CFR 1910.147

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INTRODUCTION

The Lockout/tagout regulations and guidelines are promulgated under the Occupational Safety & Health Act-Title 29 CFR 1910.147 (See [The control of hazardous energy \(lockout/tagout\). - 1910.147](#)). The standard covers the servicing/maintenance of machines and equipment in which the unexpected energization or release of stored energy could cause injury to employees.

Locking and tagging key points are proven methods of controlling the release of energy or hazardous materials, and an important way of safeguarding employees. This document will define individual and department responsibilities for Lockout/tagout, list general procedures to be followed, and outline training requirements.

POLICY

Employees shall utilize the Lockout/tagout procedures whenever equipment has the potential to release unexpected energy or hazardous chemical. To avoid personal injury or damage, employees are prohibited from repairing, servicing or cleaning equipment unless it is locked out and/or tagged out.

PURPOSE

The purpose of this program is to establish a safe means of isolating machinery, equipment and systems to prohibit unauthorized personnel or remote control systems from energizing the machinery or equipment while being serviced. The program provides a secondary control system (tagout) when it is impossible to physically lockout the machinery or equipment. In addition, responsibility is defined for implementing and controlling Lockout/tagout procedures.

PROGRAM RESPONSIBILITIES

Florida Atlantic University (FAU) is committed to provide a safe work environment to its employees, visitors and students and to comply with related regulatory agency requirements. It is the goal of the University to prevent and/or reduce the occurrence of accidents and associated risk through cooperative efforts of all employees.

ENVIRONMENTAL HEALTH AND SAFETY (EH&S)

EH&S is responsible for the development and administration of the Lockout/tagout program. Periodically, EH&S will evaluate each department's Lockout/tagout compliance program (See APPENDIX H: PERIODIC INSPECTION OF ENERGY CONTROL PROCEDURES). This is a generic document developed by EH&S. Each department will be expected to develop department and equipment specific procedures to achieve compliance.

DEPARTMENTS

The department will determine if the Lockout/tagout program is applicable to their employees and if so, the department will be solely responsible to ensure compliance with the Lockout/tagout program as outlined in this manual. The department will be responsible for adopting and implementing the lockout procedures. The department head or supervisor must ensure that employees under their supervision are following all program requirements.

UNIT/SHIFT SUPERVISORS

Supervisors will be responsible for implementing the Lockout/tagout program. Supervisors (with EH&S assistance) are responsible for enforcing the program rules and insuring compliance with the procedures developed in their department. Supervisors (with EH&S assistance) are responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized employees (See APPENDIX D: LOCKOUT/TAGOUT INSPECTION CERTIFICATION FORM).

EMPLOYEES

Employees will be held accountable for following all the procedures in this manual, and attending training. Unsafe behaviors and conditions should be reported to supervisors. Affected employees (all other employees in the area) are responsible for insuring they do not attempt to restart or re-energize machines or equipment that are locked out or tagged out.

PROCEDURES

SEQUENCE OF LOCKOUT/TAGOUT PROCEDURES

The following is the Lockout/tagout sequence procedures (See APPENDIX C: ENERGY CONTROL PROCEDURES FORM):

1. **Notify employees.** Inform all affected departments and employees of the impending lockout situation, the reason for it, and the estimated start and duration time.
2. **Equipment shutdown and isolation:** Place all the switches in the “off” or “safe” position. Disconnect sources of power, ensuring all sources of both the primary and secondary power to the equipment are interrupted (See APPENDIX E: SHUTDOWN PROCEDURES FORM).
3. **Dissipated residual energy:** Shutting down equipment does not mean the equipment is safe to work on. Check for trapped pressure or residual electricity in the system.

4. **Lockout or tagout all in-line points of control:** In most cases, this may be more than one place or more than one lock.
5. **Lockout verification:** Take nothing for granted. Ensure the system you will be working on is the same one that has been locked out. Verify that the lockout switch or control cannot be overridden. Test the equipment to be certain that the lockout switch is deenergized and not malfunctioning. Press all start buttons or valves to see if the equipment starts.
6. **Perform the scheduled work.** Try to foresee all the possible hazards. Ensure the new/repair work does not bypass the lockout and reactivate the system.
7. **Lock and/or tag removal.** All locks and tags are to be left in place until work is completely finished. Every person working on the system must place their own lock on the system; each person will remove their lock when they have finished their part of the job. A lock is never to be removed except by the person who placed it there.

EXEMPTIONS TO APPLICATION OF THE FAU LOCKOUT/TAGOUT PROGRAM

The program requirements need not be documented when the employee performing the service/maintenance activities can completely de-energize the equipment by unplugging of the equipment from its energy source. The power cord must be under the exclusive control of the employee performing the service/maintenance.

Also whenever continuity of service is essential and shutdown of the system is impractical and proper protection of the employees has been provided, especially for hot tap operations involving gas, steam, or water.

RELEASE FROM LOCKOUT/TAGOUT

Before Lockout/tagout devices are removed and energy is restored to the machine or equipment, the following steps must be taken:

1. Inspection - Make certain the work is completed; tools and equipment used are removed.
2. Replace guards- Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments; however, all other guards must be put back into place.
3. Check controls - All controls shall be in a neutral or safe position.
4. Ensure employees safety - The work area shall be checked to ensure employees are clear of the affected area and notified that the Lockout/tagout devices are being removed.

5. Remove locks/tags -Remove only your lock or tag.

PROCEDURE INVOLVING MORE THAN ONE PERSON

When servicing and/or maintenance are performed by more than one-person, each authorized employee must place their own lock or tag on the energy-isolating source. All locks and tags are to be left in place until the employee's work is completely finished.

A lock is never to be removed except by the person who placed it there.

PROCEDURES FOR OUTSIDE PERSONNEL/CONTRACTORS

Outside personnel/contractors must be advised that FAU has and enforces/requires the use of Lockout/tagout procedures. The outside personnel/contractor must be informed of the use of locks and tags, and that it is prohibited to restart or re-energize machines or equipment that are locked out or tagged out.

The department supervisors must obtain a copy of the outside personnel/contractor Lockout/tagout procedures, and advise affected employees of this information.

The outside personnel/contractor will be required to sign a certification form unless a previously signed certification is on file (See APPENDIX G: EXCHANGE OF LOCKOUT/TAGOUT PROGRAM).

PROCEDURE FOR REMOVAL OF AN AUTHORIZED EMPLOYEE'S LOCK/TAGOUT

Each Lockout/tagout device shall be removed by the employee who applied the device. If an authorized employee who applied the lock device is not in the facility, the supervisor may remove the device under the following conditions. A reasonable effort must be made to inform that employee that their device has been removed. The supervisor shall ensure that the authorized employee has this knowledge before he or she resumes work on the affected equipment. The employees' immediate supervisor must also be notified of the lock removal when an attempt to inform an authorized employee fails.

PROCEDURES FOR SHIFT OR PERSONNEL CHANGES

The out-going and in-coming supervisors must ensure the continuity of lockout or tagout protection and ensure orderly transfer of lockout or tagout device protection between off-going and on-coming employees.

PROCEDURES FOR PERIODIC INSPECTION

A periodic inspection (at least annually) will be conducted of each authorized employee under

the Lockout/tagout procedure. The unit/shift supervisor, provided they are not the ones utilizing the energy control procedure being inspected, must perform this inspection. EH&S will conduct the inspection for supervisors. A copy of the annual inspection must be sent to EH&S.

The inspection will include a review between the inspector and each authorized employee, of that employee's responsibilities under the Lockout/Tagout procedure. The inspection will also consist of a physical inspection of the authorized employee while performing work under the procedures.

The unit/shift supervisor must certify in writing that the inspection has been performed (See APPENDIX D: LOCKOUT/TAGOUT INSPECTION CERTIFICATION FORM).

TRAINING

The key to workers safety is training and education. The goal of this document is for employees to understand the importance of Lockout/tagout. Each employee utilizing the Lockout/tagout procedures will be trained in the recognition of hazardous energy sources, (type and magnitude), and the methods necessary for energy isolation and control. The department supervisor is to ensure that employees are properly trained on the Lockout/tagout procedures. Supervisors may request training assistance by contacting EH&S at 7-3129

Each affected employee (all employees other than authorized employees utilizing the Lockout/tagout procedure) shall be instructed in the purpose and use of the Lockout/tagout procedure and the prohibition against restarting or re-energizing machines that are locked out or tagged out. Employees are responsible for their own safety, and also that of their co-workers.

RETRAINING

Annual refresher training must be performed when the following occur:

1. Whenever there is a change in job assignment
2. Whenever there is a change in machines, equipment or processes that present a new hazard or when there is a change in the energy control procedures.
3. Whenever periodic inspections show inadequacies in the employee's knowledge or use of the energy control procedures.
4. Whenever the Lockout/tagout program has been changed.

Training records, which include dates, time, attendance, signature and items covered, must be well documented. Affected departments will keep all records for the employee duration of employment.

EQUIPMENT

Equipment shall consist of the following:

1. Padlocks. Sufficient quantities of padlocks each lock to have an individual key and one master key controlled by Unit/shift supervisor.
2. Multiple lock tongues. To be used in case more than one department is involved in a job.
3. Danger/Warning tags. To be used whenever it is necessary to warn employees and operators of a repair.
4. Equipment shall be distributed and controlled by each department supervisor.

Lockout/tagout devices shall be:

1. **Durable** - devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.
2. **Standardized** - devices shall be standardized within FAU in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.
3. **Substantial** – (a) 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.

(b) Tagout devices shall be substantial enough to prevent accidental removal. Attachment means shall non-reusable, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds
4. **Identifiable** - Devices shall indicate the identity of the employee applying the device(s).







APPENDICES

APPENDIX A: DEFINITIONS

Affected Employee: Employees who either work with or in the area where Lockout/tagout procedures are performed.

Authorized Employee: An employee who locks or tags out machines/equipment in order to perform service/maintenance activities.

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

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

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 equipment being controlled cannot be operated until the lockout device is removed.

Service/Maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, unjamming of machines/equipment, and making adjustments or tool changes where employees may be exposed to the unexpected energization or startup of the equipment or to the release of hazardous energy.

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.

APPENDIX C: ENERGY CONTROL PROCEDURES FORM

ENERGY CONTROL PROCEDURES

Florida Atlantic University

Lockout/Tagout Program

This form is used to identify Lockout/tagout procedures involved when servicing/maintaining the equipment/machine listed below.

Equipment/Machine Name: _____ Location: _____

Authorized Employees: _____

Affected Employees: _____

Service/Maintenance Activities Requiring Lockout/Tagout: _____

Procedure (Circle): Lockout Tagout

Energy Type (Circle): Steam, Natural Gas, Moving Parts, Chemicals, Electric, Power, Water, and Pneumatic,

Compressed Air, Hydraulic, Other:

Lockout Device (Circle): Switch, Valve, Block, Chain, Hasp, Other:

Energy Release Method (Circle): Ground, Dissipate, Drain, Restrain, Other:

Lockout/Tagout Checklist

- | | | | |
|-----------------------------------------------|--------------------------|------------------------------------------|--------------------------|
| 1. Complete an Energy Control Procedures form | | 8. Verify equipment isolation | <input type="checkbox"/> |
| 2. Identify all Energy Sources | <input type="checkbox"/> | 9. Perform task | <input type="checkbox"/> |
| 3. Notify all Affected Employees | <input type="checkbox"/> | 10. Remove Lo/To device, notify employee | <input type="checkbox"/> |
| 4. Shut down the equipment | <input type="checkbox"/> | 11. Return equipment to service | <input type="checkbox"/> |
| 5. Isolate equipment | <input type="checkbox"/> | | |
| 6. Apply Lockout/tagout devices | <input type="checkbox"/> | | |
| 7. Reduce equipment to a zero state | <input type="checkbox"/> | | |

Lockout/Tagout Record

Hazard	Action Required	Lock #	Name	Locks/Tags On, date/time	Locks/Tags Off, date/time

EXAMPLE FORM

ENERGY CONTROL PROCEDURES

Florida Atlantic University

Lockout/Tagout Program

This form is used to identify Lockout/tagout procedures involved when servicing/maintaining the equipment/machine listed below.

Equipment/Machine Name: Spinning Band Distiller Location: Chemical Waste Handling Facility

Authorized Employees: Henry, Dennis, Wayne

Affected Employees: Hourly employees currently employed

Service/Maintenance Activities Requiring Lockout/Tagout: Changing re-flux device

Procedure (Circle): Lockout Tagout

Energy Type (Circle): Steam Natural Gas Moving Parts Chemicals Electric Power
 Water *Pneumatic Compressed Air Hydraulic Other: _____

Lockout Device(s) (Circle): Switch, *Valve, Block, Chain, Hasp, other:

Energy Release Method (Circle): Ground, Dissipate, Drain, Restrain, Other:

Lockout/Tagout Checklist

- | | | | |
|-------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> 1. Complete an Energy Control Procedures form. | <input type="checkbox"/> | <input type="checkbox"/> 8. Verify equipment isolation | <input type="checkbox"/> |
| <input type="checkbox"/> 2. Identify all Energy Sources | <input type="checkbox"/> | <input type="checkbox"/> 9. Perform task | <input type="checkbox"/> |
| <input type="checkbox"/> 3. Notify all Affected | <input type="checkbox"/> | <input type="checkbox"/> 10. Remove lo/To device & notify employee | <input type="checkbox"/> |
| <input type="checkbox"/> 11. Return equipment to service | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> 4. Shut down the equipment |
| <input type="checkbox"/> 5. Isolate equipment | <input type="checkbox"/> | | |
| <input type="checkbox"/> 6. Apply Lockout/tagout devices | <input type="checkbox"/> | | |
| <input type="checkbox"/> 7. Reduce equipment to zero state | <input type="checkbox"/> | | |

Lockout/Tagout Record

Hazard	Action Required	Lock #	Name	Locks/Tags On, date/time	Locks/Tags Off, date/time
110 volt power	Lockout breaker #4 on electric panel	6	H. Hutchinson	Nov. 10 3:00 PM	Nov. 11 9:00 AM
*Water	Close water valve FW2	7	D. Zabel	Nov. 10 3:00 PM	Nov. 11 9:00 AM

APPENDIX D: LOCKOUT/TAGOUT INSPECTION CERTIFICATION FORM

Florida Atlantic University

LOCKOUT/TAGOUT INSPECTION CERTIFICATION

I CERTIFY THAT _____ WAS INSPECTED ON THIS DATE UTILIZING
LOCKOUT/TAGOUT PROCEDURES. THE INSPECTION WAS PERFORMED WHILE WORKING
ON _____

AUTHORIZED EMPLOYEE SIGNATURE DATE

INSPECTOR SIGNATURE DATE

APPENDIX E: SHUTDOWN PROCEDURES FORM

Florida Atlantic University

Shutdown Procedures

List (in order) the steps necessary to shut down and de-energize the equipment. Be specific.

Procedure:

Lock Type & Location:

De-energized State To Be Verified:

NOTIFY ALL AFFECTED EMPLOYEES WHEN THIS PROCEDURE IS IN APPLICATION

APPENDIX F: START UP PROCEDURES

Florida Atlantic University

Start Up Procedures

List (in order) the steps necessary to reactivate (energize) the equipment. Be specific.

Procedure:

Energy Source Activated:

NOTIFY ALL AFFECTED EMPLOYEES WHEN THIS PROCEDURE IS IN APPLICATION

Approved by (& date):

APPENDIX G: EXCHANGE OF LOCKOUT/TAGOUT PROGRAM

Exchange of Lockout/Tagout Program
Florida Atlantic University
Lockout/Tagout Program

The Lockout/tagout standard requires that the department exchange energy control procedures with outside employers who service and/or maintain FAU equipment/machines that require Lockout/tagout. This form is used to notify both parties that they must comply with the restrictions and prohibitions of those procedures.

I. Identification of Outside Employer:

Company Name: _____ Phone: _____

Address: _____

Project Name/Equipment: _____

II. Check here to indicate that energy control procedures for the equipment/machine have been exchanged:

Comments: _____

III. After comparing the two Lockout/tagout programs, note any additional restrictions or prohibitions below:

IV. Affected personnel (listed below) must understand and comply with these differences:

(Printed Name)

(Signature)

V. Acknowledged acceptance of the provisions of this form:

Outside Employer Rep: _____

(Signature)

(Date)

FAU Department Contact: _____

(Signature)

(Date)

APPENDIX H: PERIODIC INSPECTION OF ENERGY CONTROL PROCEDURES

Periodic Inspection of Energy Control Procedures

Florida Atlantic University
Lockout/Tagout Program

This form is used to inspect the energy control procedures for the following equipment/machine:

Basic Information: (Complete/Compare with Existing Energy Control Procedures)

Department: _____ Building: _____ Date: _____

Location/Area: _____

Inspector: _____

Authorized Employees involved: _____

Other employees affected: _____

Service/maintenance activities requiring Lockout/tagout: _____

Review the current Lockout/tagout procedures and indicate whether procedures are satisfactory. Any procedures marked NO must be explained under Comments/Deficiencies below.

a. Control methods:	Satisfactory?	___	Yes	___	No
b. General Review of Responsibilities and Procedures:	Satisfactory?	___	Yes	___	No
c. Energy Identification:	Satisfactory?	___	Yes	___	No
d. Lockout Device:	Satisfactory?	___	Yes	___	No
e. Energy Release Methods:	Satisfactory?	___	Yes	___	No
f. Lockout Steps: Satisfactory?		___	Yes	___	No
g. Comments/Deficiencies: _____					

Certification:

This energy control procedure is adequate (or modified as noted above). The inspector has reviewed appropriate responsibilities with the Authorized Employee(s). Tag limitations were inspected and appropriate Affected Employees included in this review where tagout devices are used.

Inspector's Signature: _____ Date: _____

Authorized Employee's Signature: _____ Date: _____

APPENDIX I: THE CONTROL OF HAZARDOUS ENERGY STANDARD

Contact Environmental Health and Safety for a hard copy of the Lockout/Tagout Standard, 29 CFR 1910.147, or visit the following links to the Occupational Safety and Health Administration's web site.

OSHA: [Occupational Safety and Health Administration - Home](#)

The control of hazardous energy
(Lockout/tagout) 1910.147: [The control of hazardous energy \(lockout/tagout\). - 1910.147](#)