Old Dominion University

Lockout – Tagout Program

Prepared by
Environmental Health & Safety Office
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Responsibilities

The Administration shall:

- Support the requirements of this program
- Ensure funding is available for the administration, implementation, operation and maintenance of this program

The Environmental Health & Safety Office (EHSO) shall:

- Provide training for Affected Employees in recognition of lockout/tagout procedures.
- Arrange for training of Authorized Employees
- Maintain all training records required by the program
- Assist in the performance of hazard assessments if requested to do so by the Supervisor
- Retain copies of all Energy Control Procedures
- Coordinate with Supervisors to schedule annual evaluations of Energy Control Procedures
- Approve all Energy Control Procedures which use tagout either wholly or in part
- Supply tags to the affected department upon request from the Supervisor
- Evaluate this program at least annually and revise this program as necessary to ensure the requirements of VOSH standard 1910.147 are met

Supervisors shall:

- Comply with the requirements of this program and VOSH standard 1910.147 in the performance of their work
- Ensure Authorized Employees under their supervision are trained as required by this program prior to performing Energy Control Procedures
- Prepare and verify Energy Control Procedures
- Ensure Energy Control Procedures are complete, effective and current
- Generate new Energy Control Procedures as needed
- Provide the EHSO with current copies of the Energy Control Procedures
- Ensure adequate energy isolating devices, locks and tags are available
- Ensure this program and its procedures are being utilized by their personnel
- Request approval from the Environmental Health and Safety Office for use of Energy Control Procedures which exclusively use tagout
- Ensure adequate personal protective equipment is available for work on energized systems
- Order tags from the EHSO as needed
- Appoint Authorized Employees in writing and provide a copy of the appointing letter to the EHSO

The Authorized Employee shall:

- Comply fully with the requirements of this program, ODU Energy Control Procedures developed under this program, and VOSH standard 1910.147 in the performance of their work
- Recognize and appropriately control applicable hazardous energy sources
- Know the methods and means necessary to isolate and control energy sources (Energy Control Procedures)
- Have a detailed knowledge of the type and magnitude of the hazardous energy sources present in the workplace
- Ensure locks and tags are appropriately installed
- Notify their supervisor of any unsafe or incomplete Energy Control Procedures

The Affected Employee shall:

- Recognize when the lockout/tagout procedure is being or has been implemented
- Understand the purpose of the program and the importance of not attempting to start up or use machinery or equipment that has been locked or tagged out
- Not tamper with any lockout/tagout devices or the control devices to which they are attached
- Not attempt to start up or use any machinery or equipment that has been locked or tagged out

I. Purpose

The purpose of the Lockout / Tagout Program is to prevent unnecessary injuries and fatalities to employees whose job requires them to work in the vicinity of potentially dangerous high-energy systems. Implementation of this program is in accordance with the requirements of the Virginia Occupational Safety and Health (VOSH) program administered by the Virginia Department of Labor and Industry under standard 1910.147. This will be accomplished by establishing and utilizing procedures for affixing locks and tags to energy isolating devices, and otherwise disabling equipment and machinery to prevent inadvertent start up or release of energy. By directly involving the worker in this safety program, the University seeks to provide the highest level of system expertise to the preparatory stage of hazardous tasks. This program also emphasizes the active role of supervisors in the safety of their workers.

II. Scope

This program is applicable to all University employees involved in servicing or operating any machinery or equipment if:

- They are required to remove or bypass a guard or other safety device.
- They are required to place any part of his/her body into an area on a machine or piece of equipment where work is actually performed upon a material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.
- They may contact parts of fixed electrical equipment or circuits which have been de-energized

See **Section V** for exceptions to using lockout/tagout procedures.

III. Energy Control Program

The purpose of the Energy Control Program is to prevent employee injuries by ensuring that, whenever the possibility of unexpected machinery or equipment startup or energizing exists, the machinery or equipment is isolated from all its active and/or stored energy source(s) and rendered inoperative prior to servicing or maintenance.

It is the policy of the University to exclusively use lockout for the control of hazardous energy sources unless lockout is not possible. Currently, there are no known situations where lockout is required and is not possible. If the responsible Supervisor(s) and the Environmental Health and Safety Office both agree that lockout is not possible, that finding shall be written down, signed by all parties, and retained by the EHSO for as long as that situation continues to exist. Tagout may be used only with ***prior*** written approval of each such Energy Control

Procedure by the EHSO.

IV. Energy Control Procedures

The most vital element of the Lockout/Tagout Program is the Energy Control Procedure. Simply stated, an Energy Control Procedure is a written procedure, identifying the steps a worker must take to shutdown, deenergize/isolate, apply lockout/tagout, safely release any stored energy, and verify energy isolation prior to servicing or maintaining a piece of equipment. The procedure will outline the scope, purpose, authorization, rules, and techniques that will be used to control all applicable energy sources. An Energy Control Procedure shall contain, as a minimum, the following elements:

- A statement of how the procedure will be used;
- The procedural steps needed to shut down, isolate, block, and secure machines or equipment to control hazardous energy;
- The steps designating the safe placement, removal, and transfer of lockout/tagout devices and who has the responsibility for them;
- The specific requirements for testing machines or equipment to determine and verify the effectiveness of locks, tags, and other energy control measures; and
- The provision that the Authorized Employee must notify affected employees before lockout or tagout devices are applied and after they are removed from the machine or equipment.

Where tagout is approved by the EHSO, it is important to understand the limitations of the protection provided by tagout which includes the following:

- Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint and employee protection of a lock.
- When a tag is attached to an isolating means, as is the case with locks it is not to be removed except by the person who applied it, 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 able to withstand the workplace environment in which they are placed without deterioration.
- Tags may evoke a false sense of security. They are only one part of an overall energy control program.

- Tags must be securely attached to the energy isolating device so they cannot be detached during use.

The energy control procedure must specify the steps required to safely perform the following:

- notification;
- prepare for shutdown;
- shutting down the machine or equipment;
- isolating the equipment from all energy sources;
- application of adequate lockout devices/tags to energy isolating devices;
- safe release of all potentially hazardous stored or residual energy;
- monitoring to prevent reaccumulation of stored energy; and
- verification of isolation of equipment prior to commencement of work.

If various pieces of similar equipment or machines, or logical groupings of machines can be made, then a single Energy Control Procedure will be sufficient for all of them; however, when this is done, a list of each specific machine or equipment covered by an Energy Control Procedure must be included as part of that Energy Control Procedure.

The first step in preparing an Energy Control Procedure shall be a detailed hazard assessment. For each piece of equipment the hazard assessment shall specify the machine's description, location, serial number, manufacturer's name, and a detailed description of all energy sources, including any sources of stored hazardous energy that could be present, such as capacitor banks or pressurized components. The information collected during this hazard assessment is used to complete many of the sections on the ODU Energy Control Procedure form provided in **Appendix B** of this program. Properly done, a thorough hazard assessment shall identify all necessary energy control actions to safely lockout and deenergize the machinery in question. Hazard assessments shall be performed by the Supervisor in conjunction with an Authorized Employee. The Environmental Health and Safety Office will be available to assist with hazard assessments, if requested to do so.

All energy sources shall be locked out by use of an energy isolating device, lock, and a tag which is attached with a self-locking and non-releasable device equivalent to a one-piece, all environment-tolerant nylon cable tie. Tags shall be of a standardized design, supplied by ODU, and of durable, substantial, and chemical-resistant material. All tags shall bear a message such as: *Do Not Start, Do Not Operate,* etc. and bear the name of the employee who attached the tag, and the date and time of attachment. Grease pencil which may be smeared or wiped off, erasable

ball-point pens, pencil, and other non-permanent markers are not recommended to be used to write information on tags. Locks and tags shall be issued to authorized employees who perform lockout tagout procedures.

V. Exceptions

Lockout/tagout (i.e., energy control) procedures are not required when the following criteria are met:

- Work on cord and plug connected electric equipment where unexpected start up or energization is controlled by (1) unplugging the equipment from the energy source, and (2) the worker performing the work maintaining exclusive control of the plug.

- Minor adjustments, tool changes, and other minor servicing activities, which take place during normal operation of the equipment, provided they are routine, repetitive, and integral to the normal use of that item or equipment, provided that alternative measures are used which provide effective protection from injury to the employee.

In addition, a **WRITTEN** Energy Control Procedure is not required when **ALL** of the following conditions are met, *although the use of energy control procedures is required*:

- the machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down;

- the machine or equipment has a single energy source which can be readily identified and isolated;

- the isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment;

- the machine or equipment is isolated from that energy source and locked out during servicing or maintenance;

- a single lockout device will achieve a locked-out condition;

- the lockout device is under the exclusive control of the Authorized Employee performing the servicing or maintenance;

- the servicing or maintenance does not create hazards for other employees; and

- the University, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

VI. Lockout / Tagout System Procedure

The following procedures shall be used when locking or tagging out a system in accordance with an approved Energy Control Procedure.

1. **Notification:** Notify all affected employees that a lockout or tagout is going to be utilized and the reason for the lockout/tagout. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards presented by all the energy sources.

2. **Preparation for shutdown:** The Authorized Employee(s) who will apply lockout or tagout shall review any written Energy Control Procedure for the equipment or machinery to be locked or tagged out and ensure that he/she/they understand the procedure fully.

3. **Shutdown:** If the machine or equipment is operating, shut it down by the normal stopping procedure.

4. **Machinery or equipment isolation:** Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s) in accordance with the applicable Energy Control Procedure (if necessary, since sometimes the disconnect switch is used for normal shut down).

5. **Lockout/tagout device application:**

    - A lock and tag shall be affixed to each energy isolating device only by an Authorized Employee. Tags alone shall not be used unless their sole use is authorized in writing by the EHSO prior to use.

    - Locks and tags shall be singularly identified. Examples of the tags that shall be used at ODU are included in **Appendix C**.
    - Locks shall be affixed in a manner that will hold the energy isolating devices in a safe or off position

    - Tags 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

    - 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. **Stored energy release or restraint:** All potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe.

7. **Monitoring to prevent reaccumulation of stored energy:** If there is a possibility of reaccumulation of stored energy to a hazardous level, verification of isolation shall continue until the possibility of reaccumulation no loner exists.

8. **Verification of isolation:** After ensuring that no personnel are exposed to injury if the equipment starts or is energized, 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. **Return the operating controls to a "neutral" or "off" position after the test**. The de-energizing of electrical equipment shall be verified in accordance with **Section XII** of this program.

NOTE: In the preceding steps, if more than one individual is required to lock or tag out equipment, each individual shall place his/her own assigned lock on the energy isolating devices(s). When an energy isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device shall 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 employee shall 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.

VII. Removal of Lockout/Tagout Devices by Other Than the Authorized Employee

Lockout/tagout devices shall be removed from each energy isolating device by the employee who applied it. *Exception:* Lockout/tagout devices may be removed by an Authorized Employee who is also a supervisor if the authorized employee who applied it is not available and:

- it is verified that the Authorized Employee who applied the device is not at the facility;

- all reasonable efforts were made to contact the Authorized Employee to inform him/her that their lockout/tagout device has been removed, and~~;~~

- the supervisor who removes the lock can positively ensure that the Authorized Employee whose lock was removed shall be informed that the lock was removed before he/she resumes work at that facility. The following procedures shall be used to ensure that this

happens without fail:

- Supervisors shall require Authorized Employees to submit phone numbers, cell phone numbers, or other means in which they can be contacted in the event that they leave the facility. Authorized Employees who do not have a means of being contacted shall contact their supervisor as soon as possible after abandoning a job involving lockout tagout.

- Authorized Employees who abandon a job which involves the use of lockout tagout procedures shall check-in with their supervisor prior to resuming the work to ensure the locks and tags have not been removed and;

- Authorized Employees who abandon a job which involves the use of lockout tagout procedures shall personally verify that the locks and tags have not been removed prior to resuming the work.

VIII. Shift or Personnel Changes

In the case of shift or personnel changes, a change over period will be established so that the authorized employees may exchange their assigned locks/tags. Authorized personnel assuming control of lockout of equipment shall be fully briefed in the scope of the work by those whom are being relieved. Removal and replacement of locks or tags shall be done face-to-face without any interruption of lockout or tagout protection.

IX. Training Program

All Affected Employees whose job may take them in the vicinity of equipment that may be locked or tagged must be trained to recognize these precautionary measures, and the importance of not defeating them. All Affected Employees will be trained to:

- Recognizing when and why the Lockout/Tagout Program is being used.

- Understand the importance of not operating or defeating either an energy isolating device or a tagged out piece of equipment.

Authorized employees will, in addition to the above training, be trained on the following topics:

- recognition of applicable hazardous energy sources.

- types and magnitude of hazardous energy sources present in the workplace.

- how using the proper Energy Control Procedure can isolate and control those energy sources.

- identify the limitations of tags to include the following:

  * The use of tagout procedures exclusively are only authorized if such procedures are the only feasible options. Approval to use the procedures must be granted in writing and prior to use by the Environmental Health and Safety Office.

  * Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint and employee protection of a lock.

  * When a tag is attached to an isolating means, it is not to be removed except by the person who applied it, 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 able to withstand the workplace environment in which they are placed.

  * Tags may evoke a false sense of security. They are only one part of an overall energy control program.

  * Tags must be securely attached to the energy isolating device so they cannot be detached during use.

X. Informing Outside Contractors

Appropriate supervisory personnel shall inform outside contractors of this program and ensure that contractor personnel will comply with the University's Energy Control Program. All outside contractors shall be responsible for administering their in-house safety programs to comply with all relevant VOSH regulations. When ODU personnel are required to coordinate work efforts with contractor personnel, this program will take precedence, and lockout/tagout will be performed by ODU authorized personnel in accordance with ODU Energy Control Procedures.

XI. Working on Energized Electrical Circuits

Approval must be obtained from the Electrical Shop Supervisor prior to any work on

energized electrical circuits. Only Qualified Personnel, as defined by VOSH and as designated by the Electrical Shop Supervisor shall perform such work. The Electrical Shop Supervisor will verify that deenergizing circuits will create additional or increased hazards or that it is unfeasible due to equipment design or operational limitations.

NOTE: Working on energized circuits requires the use of appropriate procedures and personal protective equipment. The Electrical Shop Supervisor shall be responsible for specifying appropriate protective equipment to be used, to ensure compliance with VOSH Standard 1910.335. Personal protective equipment for electrical hazards shall meet and be used and maintained in accordance with the most recent revision of the applicable ANSI standards.

XII. Electrical Test Verification of Deenergized Circuits

The Authorized Employee, if qualified to do so by the Electrical Shop Supervisor, shall use test equipment to test the circuit elements and electrical parts of equipment to which they will be exposed and shall verify that the circuit elements and equipment parts are deenergized. Otherwise, such testing shall be performed by a Qualified Employee designated by the Electrical Shop Supervisor. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. If the circuit to be tested is over 220 volts, nominal, the test equipment shall be checked on a live circuit of known voltage for proper operation immediately before and immediately after this test.

XIII. Annual Evaluations of Energy Control Procedures

Each Energy Control Procedure that is used more than once a year shall be evaluated on an annual basis. This evaluation shall be performed by Authorized Employees, other than the person using the Energy Control Procedure. Annual evaluations shall be performed in accordance with the Evaluation Form in **Appendix A**. The Environmental Health and Safety Office will be responsible for arranging the annual evaluations and shall maintain a record of the completed Evaluation Forms for three (3) years. The Environmental Health and Safety Office shall coordinate with the Supervisor to schedule the evaluations and ensure they are accomplished in a timely manner.

XIV. Definitions

Affected Employee means 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.

Authorized Employee means a person who locks 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 this Program

Capable of being locked out means that an energy isolating device will be considered to be capable of being locked out either if it was designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, replace, or permanently alter its energy control capability.

Employee means any person hired by the University or Research foundation as full or part-time personnel, including administrators, faculty, staff, students and work study students.

Energized means a machine or piece of equipment connected to an energy source or containing residual or stored energy.

Energy Isolating Device means 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 slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switches, and other control circuit type devices.

Energy Source means any source of electrical, mechanical (e.g., rotating flywheels, elevated machinery members, springs), hydraulic (e.g., water pressure, pressurized hydraulic fluid) , pneumatic (e.g., compressed air, steam), chemical, thermal (e.g., liquid nitrogen, steam), or other energy.

Energy Control Procedure means a written document that contains those items of information an authorized employee needs to know in order to safely control an energy source during servicing or maintenance of machines or equipment.

Energy Control Program means a program intended to prevent the unexpected energizing or the release of stored energy in machines or equipment during servicing or maintenance. The program consists of energy control procedures(s), an employee training program, and periodic inspections.

Lockout means 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.

Lockout Device means any device that uses a positive means such as a lock, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment.

Research Foundation means a separate, public, not-for-profit corporation which serves as the fiscal and administrative agent for ODU's sponsored research agreements.

Supervisor means an employee who oversees the work of another employee (e.g. Principal Investigator, superintendent, lab manager).

Tagout means 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.

Tagout Device means a prominent warning device, in this case a University-provided tag and means of attachment, that 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. tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. tagout device attachment means 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.

University means Old Dominion University and its associated Research Foundation.

XV. References

VOSH Standard 1910.147, The control of hazardous energy (lockout / tagout)

VOSH Standard 1910.333, Selection and use of work practices

VOSH Standard 1910.335, Safeguards for personnel protection

APPENDIX A

ENERGY CONTROL PROCEDURE
ANNUAL INSPECTION FORM

Energy Control Procedure Annual Inspection Form

Name of Equipment: _____

ODU Energy Control Procedure #: _____

Printed Name of Inspector(s): _____

Signature of Inspector(s): _____ Date: _____

Is the information on the Energy Control Procedure (ECP) accurate (i.e. correct location, equipment name, energy sources, serial numbers, etc.)? Yes / No

Does the ECP completely isolate the equipment from all energy sources? Yes / No

Does the ECP completely dissipate all sources of stored energy? Yes / No

Is the ECP clearly written and easy to follow? Yes / No

Are all energy sources capable of being locked out? Yes / No

Was the lockout/tagout procedure properly followed? Yes / No

Were the proper Energy Isolating Devices used? Yes / No

Does the Authorized Employee have a detailed knowledge of the type and magnitude of the hazardous energy present in the equipment? Yes / No

Comments:_____

_____

_____

Reviewed by: _____ Date: _____

Action: _____

_____

APPENDIX B

ENERGY CONTROL PROCEDURE WORKSHEET

LOCKOUT/TAGOUT PROCEDURE

OLD DOMINION UNIVERSITY **LOCKOUT/TAGOUT PROCEDURE**	Page 1 Date:
Facility:	Location:

SCOPE:
This procedure covers the necessary safety precautions and procedures for servicing and maintenance of machines and equipment in which the unexpected energization or start up, or release of stored energy could cause injury to employees.

PURPOSE:
This procedure covers the minimum requirements for lockout and/or tagout of energy isolating devices to protect employees from hazardous energy including electrical, mechanical hydraulic, pneumatic, or other energy. It will be used as a facility wide general procedure for isolating all potentially hazardous energy (lockout/tagout) before employees perform any servicing and maintenance activities where unexpected energizations, start up or release of stored energy could cause injury. This procedure, when used in conjunction with the specific information recorded on the attached pages of this procedure, provides the necessary information for lockout/tagout.

PROCEDURE:

1. Only trained, authorized employees can lockout/tagout.
2. All affected and other employees working in or entering work areas where lockout/tagout is performed must be trained.
3. Determine all energy isolating devices requiring lockout/tagout to ensure effective control of hazardous energy.
4. Determine the type and magnitude of the energy and required controls.
5. Notify all affected employees of the plans to lockout/tagout.
6. Shutdown the equipment/process by normal procedures.
7. Locate the necessary energy isolating device(s) to equipment/process and operate them to isolate energy sources and affix lockout/tagout devices.
8. Relieve all stored or residual energy and take appropriate measures to ensure it does not reaccumulate. Affix lockout/tagout device as necessary.
9. Verify energy isolation and relief of stored energy after ensuring employees are not exposed and before beginning work. After start buttons are activated, press the stop button.
10. Perform the servicing and maintenance.
11. To safely restore machines, equipment or process to normal production operations, replace all guards and safety devices, remove all personnel, remove all tools and equipment.
12. Notify affected employees.
13. Remove lockout/tagout devices (by authorized employee installing lockout/tagout devices).

LOCKOUT/TAGOUT DEVICE REMOVAL BY EMPLOYER:
When it becomes necessary to remove the lockout/tagout devices of an employee who is unavailable at the facility, it can be done only by the employer and then under a special, approved procedure, as follows: _____.

GROUP LOCKOUT/TAGOUT
When a lockout/tagout job involves numerous lockout/tagout devices and many employees, a group lockout/tagout procedure may be used. A separate, special written procedure or permit is required.

CONTRACTORS
All contractors must comply with the lockout/tagout procedures specified by the site employer and employees of the employer must not violate the contractors lockout/tagout.

Procedures Prepared By:	Date:	Procedure Authorized By:	Date:

NOTE: Use this form for specific Machines as needed:

LOCKOUT/TAGOUT PROCEDURE

Date:

Department Work Area:	Equipment/Machine:	Process:

Description (Equipment/Machine/Process):

Energy Sources:

Additional Hazards:

ENERGY ISOLATION DEVICES

No.#	Device	Location	Lockout/tagout Means	Comments	Locked Tagged
1					
2					
3					
4					

STORED/RESIDUAL ENERGY

Comments:

Completed By:	Date:	Authorized By:	Date:

APPENDIX C

TAGS USED BY THE UNIVERSITY