** CURI LOCKOUT PROGRAM **

**1. Purpose**

This program is to provide guidelines to protect employees during installation, servicing and maintenance of systems that may have energy sources where the unexpected start-up or release of stored energy could occur.

**2. Lockout Policy**

1. The elimination and control of hazardous energy is critical to worker safety. When feasible, all energy sources must be controlled by lockout. Other methods which are equally stringent and effective as physically locking out the energy source is also acceptable.
2. Lockout is required where any exposure to hazardous energy could cause injury, machine movement or damage to people or property.

**3. Scope**

 A. This program covers all employees, interns and/or contractors performing work where unexpected energization, startup of machinery and equipment, or release of stored energy, could cause injury or property damage.

 B. This program provides awareness to the CURI Electrical Safety Program. Due to required compliance with NFPA70E, lockout of electrical systems requires special consideration beyond the CURI Lockout Program. Authorized employees must work with an employee familiar with the CURI Electrical Safety Program who has been qualified on the particular equipment.

 C. Servicing and/or maintenance are covered if:

1. An employee is required to remove or bypass a guard or other safety device; or
2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where an associated danger zone exists due to machine operation or energy exposure.
3. Where an electrical hazard is present.(special case of LO - governed by CURI Electrical Safety Program) )
4. Where stored energy or any other type of energy is present.

**4. Definitions**

1. Affected Employees – An individual who works in the area of or with machinery or equipment on which work is performed.
2. Authorized Employee – An individual who has been trained on this CURI Lockout Program and authorized to perform lockout (for electrical systems: may add lock to previously locked-out hasp or group lockout box but may not lead lockout).
3. Electrical LO Competent Employee (ELOC) – An individual who has been qualified on a particular piece of electrical equipment through the CURI Electrical Safety Program and may lead electrical lockout.
4. Energy Isolating Device – A physical device that prevents the transmission or release of energy that may include, but is not limited to:
	* 1. Manually operated electrical circuit breakers
		2. Disconnect switches
		3. Isolation Valves (May take many forms other than gate or ball)
		4. Blocks, Pins, Wedges
		5. Slip blinds or blanks
		6. Barriers
5. Hazardous Energy Source – Any energy source that could cause harm to an employee such as electrical, mechanical, hydraulic, pneumatic (i.e. compressed air or vacuum), chemical, thermal, radioactive, suspended load or any other energy source.
6. Lockout Device – A device to secure an energy isolating device in a safe position, such as a lock, scissors, gate valve device, plug cover, etc.
7. Lockout Hazard Analysis- A worksheet to be used by authorized employees to determine hazards associated with the work to be performed and how to control the identified hazards.
8. Other Employees – employees whose work operations are on or may be in an area where energy control procedures may be used.
9. Stored or residual hazardous energy – hazardous energy remaining in the machinery or equipment after hazardous energy sources have been isolated. Examples include capacitors in electrical systems and springs or suspended/displaced mass in mechanical systems, pressure in accumulators or fluid systems.

**5. Responsibilities**

A. Safety Department

1. Assist in developing a written lockout/energy control program that is functional and appropriately controls energy sources.
2. Assist in developing annual refresher training.
3. Ensure that training materials are adequate for educating authorized and affected employees.
4. Assist with coordinating training of the program.

B. Managers/Supervisors:

* + 1. Commit adequate resources to ensure all elements of the Lockout Program are implemented at the site
		2. Ensure an annual review of the site’s Lockout program is conducted to verify effectiveness
		3. Identify a “competent person” who will assist with technical issues and implementation
		4. Ensure that machine specific lockout procedures have been:
			- 1. Written and are accessible
				2. Updated when equipment modifications are made that effect their accuracy
				3. Annually reviewed and updated
		5. Ensure that all necessary equipment (ex. lockout devices, ID tags, etc.) for performing lockout /energy control procedures is available and provided to employees
		6. Ensure necessary training occurs with employees they supervise
		7. Conduct periodic observations of employees working to assure they are following lockout procedures
		8. Follow procedure for lockout lock removal, if needed

C. Employee Responsibilities:

1. Comply with the elements of this program as applicable to job responsibilities.
2. Attend training in this program as applicable to job responsibilities.
3. Never attempt to operate a piece of equipment that is locked out.
4. Never attempt to remove another employee’s lockout device (unless it is a supervisor that is following the procedure for lockout lock removal).
5. Perform work only to the level of training provided.
6. Identify the types of hazards before performing lockout. If this includes electrical, consult supervisor/manager to schedule training on CURI Electrical Safety Program or work with an employee familiar with the CURI Electrical Safety Program who has been qualified on the particular equipment.
7. Use only the approved lockout devices.
8. Use lockout devices only for lockout.
9. Ensure you are applying your own lock/tag when performing a lockout procedure (you cannot rely on someone else’s lock).
10. Review / develop the Machine Specific Lockout procedures for the equipment prior to performing work. If “No” machine specific instructions are present then a “machine specific energy Lockout risk assessment” must be developed with the assistance of the safety manager.
11. Report any deficiencies in Machine Specific Lockout procedure to your manager immediately.

**6. Lockout Procedures**

A. Steps for Energy Control

1. Prepare for shutdown
2. Inform affected employees in the area where lockout/energy control will take place.
3. Authorized employees must be familiar with the machine specific lockout/energy control procedures for the machinery which they are going to initiate lockout.
4. Shutdown the equipment using normal shutdown procedures.
5. Isolate equipment from energy sources using approved energy isolation devices on each energy source
6. Only approved Lockout locks shall be used (shown in Appendix A). It may also be necessary to use devices such as lockout hasps, valve covers, chains or other specialized devices to secure energy isolating devices.
7. Apply lock(s) to prevent removal of your energy isolating device(s) and tag the lock(s) to inform others of the Lockout (name, contact information, date, and purpose of Lockout).
8. Retain possession of the key(s) at all times.
9. Assure all personnel are clear of the machinery or equipment.
10. Safely release all stored or residual hazardous energy in the machinery or equipment.
11. Verify energy isolation.
For electrical systems, see CURI Electrical Safety Program for mitigation of electrical hazards during energy isolation verification process.
12. Attempt to operate the machinery or equipment controls to verify energy is isolated and there is no movement or energy present.
13. Return operating controls to the off or neutral position after each verification test to avoid unexpected startup of machinery or equipment when energy is restored

B. Steps for Restoring Energy / Removal of Lockout

* + - 1. Visually inspect the work area to ensure that tools and other nonessential materials have been removed. (Ensure all guards are in place, interlocks operable, etc.).
			2. Verify that all personnel are clear of the machinery or equipment.
			3. All affected employees shall be notified that the re-energization of the machinery or equipment is about to take place.
			4. Verify that all controls are in the “neutral” or “off” position
			5. Remove Lockout locks and energy isolating devices. Remember: Only the employee that applied the lock can remove it.
			6. Re-energize the machinery or equipment
			7. Restart equipment using normal startup procedures.

C. Cord and Plug Equipment – Energy control for cord and plug can be accomplished through the following methods:

1. The plug is unplugged and kept under the *exclusive control* of the employee performing the servicing or maintenance on the equipment.
2. Installing a plug lockout device over the plug and locking it.

 D. Testing, Troubleshooting or Positioning of Machinery, Equipment or Systems.

1. Lockout of an energy source is the preferred method of energy control; however, it is recognized that certain tasks cannot be performed without energy / power. Lockout devices can be removed and the equipment re-energized to test, troubleshoot or reposition equipment as long as all energy sources where the employee could potentially be exposed, **are controlled**. If exposure occurs, lockout must be performed or the exposure eliminated through safe operating procedures such as work methods, repositioning, safeguarding, personal protective equipment, etc. The safe operating procedure shall be documented using the Energized Work Permit. (EWP)
2. If there is potential exposure to live electrical (>50V), employee must be qualified on the particular equipment through the CURI Electrical Safety Program to mitigate electrical hazards such as electrical shock and arc flash.
3. While working on equipment, ID tags or barricades should be used to allow others to be aware that the equipment is still in service.
4. Once the testing or troubleshooting is complete, lockout needs to be performed before work is started.
5. Energized Work Permit (EWP)
	* 1. A EWP needs to be completed when work is done while energy is present.
		2. The EWP is not required for the below instances. This will prevent numerous completions of the EWP. In these cases, a safety task analysis needs completed.
			+ Routine – the activity must be a regular course of procedure and be in accordance with established practices.
			+ Repetitive – the activity must be repeated as part of the process or cycle.
			+ Integral – the activity must be inherent to the process.
			+ Or traditional lockout prohibits the completion of those activities

**7. Lockout Devices**

1. Necessary tools and hardware to isolate and secure the hazardous energy of equipment will be provided by CURI. These tools may include locks, ID tags, chains, plug box, valve covers, wedges, key blocks, etc. Each lockout device shall
	* + - be uniquely identified;
			- shall be the only device(s) used for controlling hazardous energy;
			- shall not be used for other purposes;
			- shall follow the defined lock definitions.
2. Lockout Locks (RED LOCKS) shall be identified, or accompanied by a ID tag that identifies, the following:
3. “Danger” header which warns against hazardous conditions if the machine or equipment is energized and shall include a legend such as one of the following: “Do Not Start,” or “Do Not Operate.”
4. Employee’s Identity (printed first and last name)
5. Employee’s contact information
6. Date lock was applied
7. Purpose of the lock
8. Group Locks (BLUE LOCKS) are used when numerous people will work on the system.
	* + 1. Blue locks are installed on all lockout points and keys placed into a group lock box.
			2. Each person must affix their personal lockout lock (red) to the group box prior to work.
			3. Group hasps with the 6 lock capability can also be used for group lockout as long as the person working on the system applies their personal lock to the hasp.
9. Safety / Security Locks (GREEN LOCKS) are used to secure equipment such as a cabinet, gate, valve etc. The green lock shall be accompanied by an ID tag identifying the purpose of the lock.
	* + 1. Green lock keys shall be controlled by the person that installed the lock.
			2. Removal of green locks by those who did not install them must follow emergency lock removal protocol.

**8. Energy Source Identification Placards / Machine Specific Lockout Procedures**

1. A placard will be placed on equipment where the energy isolating device / lockout point might not be readily apparent to the authorized employee. Placards are designed to assist authorized personnel with identifying the types of energy, means of isolating and verifying the energy source is controlled.
2. Certain equipment may have energy sources that require certain supplemental procedures to control other energy sources for specific tasks. For example, a task that requires a person to be on top of a machine where an overhead crane is present.

**9. Lockout Lock Removal**

Each lockout / hazardous energy control device shall be removed by the authorized employee who applied the device. When the authorized employee who applied the lockout device is not available to remove it, that device may be removed by completing the Emergency Lock Removal Form. The procedure described in the form must be conducted by a supervisor or manager. Those procedures are:

A. Verify that the authorized employee who applied the device is not at the facility.

B. Make all reasonable efforts to contact the authorized employee to inform them that their lockout device will be removed.

C. Before removal of the lock, the person removing the lockout device must ensure that no unsafe condition exists by removing the device. The decision to remove must be a team decision (not an individual).

D. Ensure that the authorized employee has been notified that his/her device has been removed before he/she resumes work at that facility.

E. The Lockout Lock Removal Form and the removed lock will be turned in to the Safety Manager.

**10. Group Lockout**

1. Each authorized employee must affix their personal lock to the energy isolating device or group lockout device (group lockbox) before beginning work. Removal of their personal lock is required when work stops.
2. If a group lockbox is used for the maintenance or servicing task, a Primary Authorized Employee will be designated for the people working under the protection of the group lockout.
3. The Primary Authorized Employee will follow the notification, shutdown and lockout steps and then will place all keys to the group locks (BLUE LOCKS) into a group lockbox. He/she will then affix his/her personal lock to the front hasp of the group lockbox.
4. All authorized employees conducting work on the equipment must verify that the equipment was locked out. Following verification that all energy sources were controlled appropriately, their personal lock should then be affixed to the group lockbox
5. The Primary Authorized Employee will be the last person to remove his/her personal lock from the group lockbox. Removal of the group locks should be in accordance with the steps for restoring energy.

**11. Periodic Observations**

A. Documented periodic observations must be performed to assure authorized employees are performing lockout / energy control procedures correctly.

B. Procedure review should be conducted to assure the program is achieving its purpose. The safety steering team and safety manager is responsible for this review.

C. The audit shall include a review of:

1. Adherence to established lockout/hazardous energy control procedures.

2. The proper use of lockout devices.

3. Machine specific lockout procedure (verify all energy sources are captured)

4. Employee knowledge of Lockout (verify training effectiveness)

**12. Training**

* 1. Training shall be provided to authorized, unauthorized and affected employee(s) at the time of initial job assignment. "Authorized" employees and their direct supervisors must be fully trained in the identification of energy sources, proper use of energy control devices, and responsibilities under the program prior to assignment that requires the use of lockout. The training must include:
		1. The purpose and importance of lockout/energy control, local procedure/policy, lockout devices, steps for shutting down and re-energization, etc.
		2. Verification that employees understood classroom training through use of a quiz or other means
		3. Employees must display competence by demonstrating to the trainer that they can physically lockout a typical system/equipment by utilizing specific lockout procedure.
		4. Refresher training must be completed **annually. Refresher training** must include areas of emphasis related to audit/observation results.
		5. Retraining shall be provided when an audit of the lockout/energy control program indicates deficiencies in the existing program, modifications to equipment where the energy control procedures change, or if an authorized or affected employee requests additional training.
	2. "Affected" employees must be trained to be aware of the purpose of the program and their responsibilities under the program. The project manager will ask the customer for verification that their employees have been trained as required. If they have not, they need to complete the training before work is started.

**13. Means of Compliance**

1. If any employee fails to comply with any requirement of the Lockout / Energy Control Program, appropriate corrective actions will be taken consistent with the state of South Carolina and Clemson University.
2. Managers/ Supervisors are required to monitor and enforce compliance with established Lockout / Energy Control procedures at all times. Any failure to conform to these procedures that is observed by a member of management must be immediately corrected, discussed with the employee(s) involved, and documented. A copy of the documentation must be provided to the safety manager.
3. The following conditions are examples that are considered violations:
4. Employee deliberately by-passed a safety switch and is potentially exposed to a source of energy.
5. Employee removed or reached around a guard that protected the hazard energy without Lockout.
6. Employee or member of management removing another employee’s lock without following the established local procedures for lock removal.
7. A member of management allowed the practice to occur.

5. The following are examples that would be considered serious

1. Using another employees lock or tag
2. Using an unauthorized lockout device
3. Inappropriate use of a lock or ID tag i.e. on toolbox etc...

**14. Contractor Requirements**

1. Contractors brought into the facility by a CURI project manager must be informed of CURI’s lockout /energy control procedures. (If applicable)
2. Contractors shall adhere to the facility’s lockout/energy control procedures unless the contractor’s lockout/energy control procedures are more stringent. The project manager shall ensure the contractors understand and comply with the CURI lockout procedures.

**Attachments**

* + - 1. Approved Lockout Locks
			2. Energized electrical work permit
			3. Pre-Job Briefing and Planning Checklist
			4. Lockout Observation Checklist
			5. Example of Machine Specific Lockout/Energy Control Procedure
			6. Lockout Lock Removal Form
			7. Electrical LO Competent SOP template

**ATTACHMENT A**

**Approved Lockout Locks**

Shackle Diameter: 1/4"
Shackle Vertical Clearance: 1-1/16"

  

Personal

Group

 

 **ATTACHMENT B**

Green – Secure without potential hazard

Yellow – Secure with potential hazard

**ENERGIZED ELECTRICAL WORK PERMIT**

 **TO BE COMPLETED BY THE REQUESTER:**

 (1) Description of circuit/equipment/job location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Description of work to be done: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage: \_\_\_

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 Start Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Expire Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Requester/Title\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS *DOING* THE WORK:**

|  |  |  |  |
| --- | --- | --- | --- |
| (1) |  | Detailed procedure to be used in performing the above detailed work including hazards, conditions, mechanical, environmental, space obstructions, other voltages:­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   |  |
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| (2) |  | Description of the Safe Work Practices: [ ]  LO [ ]  Two Workers [ ] Safety Watch [ ] Notify affected workers [ ]  Other\_\_\_\_\_\_\_\_\_\_\_\_\_Reason not to Lockout: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  |  |
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|  |  | Restart Checks Required: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
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| Flash Hazard (0 to 4) |  | Shock Hazard (max V) |  | Working Distance |  |
| Flash Boundary |  | Limited Approach |  | Glove Class, minimum |  |
| Incident Energy (cal/cm2) |  | Restricted Approach |  | Voltage Hazard(Volts) |  |
| Prohibited Approach |  |

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| Protective Equipment

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| --- | --- | --- | --- |
| [ ]  Natural Fiber Clothing | [ ]  Safety Glasses/Goggles | [ ]  Ear Plugs | [ ]  Leather Shoes |
| [ ]  FR Clothing | [ ]  Face Shield | [ ]  Leather Gloves | [ ]  Voltage-rated Shoes |
| [ ]  Voltage-rated Tools | [ ]  Balaclava Hood  | [ ]  Voltage-rated Gloves  | [ ]  Hard Hat  |
| [ ]  Category III Meter | [ ]  2 Layer Switching Hood | [ ]  Flash suit  | [ ]  Other |

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| Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| (5) |  | Means employed to restrict the access of unqualified persons from the work area: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |

(6) **Authorized Workers**  **Date Initials**

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**APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:**

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 Department Manager/Designee Date

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Independent Reviewer Date

**WORK**

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|  | Evidence of completion of Job Briefing including discussion of any job-related hazards: |  |
|  | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |

**POST WORK-FEEDBACK (Worker Initials) \_\_\_\_\_\_\_\_\_\_\_**

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 Manager/Representative Close-out Date

Return to CURI safety mgr.

**ATTACHMENT C**

**CURI PRE-JOB BRIEIFING AND PLANNING CHECKLIST**

**Identify:**

 The hazards

 The voltage levels involved

 Skills required

 Any additional or secondary source

 Any unusual work conditions

 Number of people needed to do the job

 The shock protection boundaries

 The available incident energy

 Potential for arc flash (Conduct a flash-hazard analysis)

 Flash protection boundary

**Inquire / Ask:**

 Can the equipment be de-energized?

 Is a “standby person” required?

 Are back-feeds possible?

**Check:**

 Job plans

 Single-line diagrams and prints

 Status board

 Information on plant and vendor resources is up to date

 Safety Procedures

 Vendor Information

 Individuals are familiar with the facility

**Know:**

 What the job is

 Who is in charge?

 Who else needs to be informed of the work?

**Think:**

 About the unexpected event (what if).

 Lock-Tag-Test-Try

 Test for voltage-FIRST VERIFY

 Use the right tools and equipment including PPE

 Install barriers and barricades

 What else…?

**Emergency Preparation:**

 Is the standby person CPR trained?

 Is the required emergency equipment available? Location

 Where is the nearest telephone?

 Where is the fire alarm?

 Is confined space rescue available?

 What is the exact location?

 How is the equipment shut off in an emergency?

 Are the emergency telephone numbers known?

 Where is the fire extinguisher?

 Are radio communications available?

**ATTACHMENT D**

**LOCKOUT OBSERVATION CHECKLIST**

**Applying Energy Controls Periodic Evaluation**

**Instructions:**

**1- Authorized employees must be evaluated to determine effectiveness of LO protocol.**

**2- Supervisor must ensure Lockout procedures and requirements are being followed.**

**3- Return completed form to the Safety Manager. File will be in the Lockout program files.**

**Employee Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Employee Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Location/Equipment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Description of work: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **PASS (Y/N)**

**1- Preparation for Shutdown**

 **Before turning off the equipment, do you know the amount \_\_\_\_\_\_?**

 **and type of energy that powers the equipment?**

**2- Equipment Shutdown**

 **Has the Supervisor and employees in the area been notified \_\_\_\_\_\_**

 **that equipment will be shut down and LO procedures applied?**

 **Have all switches, valves and other devices that need to be \_\_\_\_\_\_**

 **locked been identified?**

**3- Equipment Isolation**

 **Is all equipment isolated from its energy sources? \_\_\_\_\_\_**

 **Are all secondary power supplies also isolated? \_\_\_\_\_\_**

**4- Apply Lockout devices**

 **Authorized employee used appropriate lock? \_\_\_\_\_\_**

 **Was the ID tag fill out by the employee? \_\_\_\_\_\_**

**5- Control of Stored Energy**

 **Has all residual energy been removed and/or blocked? \_\_\_\_\_\_**

 **Has system been double-checked to make sure all parts are de-energized \_\_\_\_\_\_**

 **and stored energy has been controlled?**

**6- Equipment Isolation Verification**

 **Are all danger areas clear of personnel? \_\_\_\_\_\_**

 **Has the main disconnect switch or circuit**

 **breaker been locked and can’t be activated? \_\_\_\_\_\_**

**Print Name of AUTHORIZED Employee observing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Signature of AUTHORIZED Employee making Observation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ATTACHMENT E**

****

**APPENDIX F**

** CURI LOCK REMOVAL FORM **

**Director / Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lock Owners Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone#:\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**INSTRUCTIONS: Complete the below checklist.**

1. **Verify authorized person who installed the lock is no longer at the facility:**
	1. **\_\_\_ Attempted contact by cell phone and desk phone.**
	2. **\_\_\_ Searched premises for individual.**
	3. **\_\_\_ Discussed whereabouts of lock owner with staff / team.**
	4. **\_\_\_ Lock owner was contacted and gave permission to remove lock.**
	5. **\_\_\_ Lock owner was not contacted.**
2. **Equipment has been inspected, operationally intact and able to start safely?**
3. **\_\_\_ an authorized employee has reviewed the machine and approved re-energization.**
4. **\_\_\_ all guards and safety devices are in place.**
5. **\_\_\_ Lock / ID tag removed and equipment returned to operation.**

 **3. Notification:**

1. **\_\_\_ Director / Supervisor who authorized lock removal assures authorized person who had lock removed will be informed of lock removal prior to start of work.**
2. **\_\_\_ Affected employees will be notified of the removal of the lockout lock. \_\_\_**
3. **Signature of Director / Supervisor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_ Submit completed form to Safety Manager\_\_\_\_\_\_\_**

**CURI SAFETY**

**APPENDIX G**

**CURI ELECTRICALLY LO COMPETENT REVIEW TEMPLATE**

**Employee Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Electrically Qualified Employee Name:**

Work where employee will be exposed to live electrical component:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Standard Operating Procedure to be used:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Controls to be implemented to assure energy is isolated:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Specific Protocols to be implemented to assure safety:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_