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Lockout/Tagout (LOTO) Program

REVISION

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1. PURPOSE

29 CFR 1910.147 the control of hazardous energy requires employers to establish a program and utilize procedures for affixing appropriate lock out devices or tag out devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start-up, or release of stored energy in order to prevent injury to employees during service, maintenance, repair, renovation, or installation activities.

2. SCOPE

- 2.1 This program applies to the servicing and maintenance of machines and equipment in which the unexpected energizing or start-up of the equipment or the release of stored energy could cause injury to employees.
- 2.2 LOTO applies to operations whenever the need exists to remove or bypass a guard or safety device or place any part of the body in a danger zone which potentially exposes anyone to the release of hazardous energy.

3. APPLICABILITY

This program applies to all NYCREATES sites and employees. Tenant employees, contractors, and sub-contractors shall comply with their company's program.

4. DEFINITIONS

- 4.1 **Authorized Employees** - 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 under this section.
- 4.2 **Affected Employees** - An employee whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under LOTO, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- 4.3 **Other Employees** - Employees who work in areas where implementation of energy control procedures are occurring.

- 4.4 **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.
- 4.5 **Energy Control Procedures** - Written procedure providing steps for securing equipment containing more than one source of hazardous energy.
- 4.6 **Equipment** - A term used in this document to denote tools, machines, equipment, and systems that utilize or produce energy.
- 4.7 **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.
- 4.8 **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, preventing the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.
- 4.9 **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.
- 4.10 **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, used to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

5. ASSOCIATED DOCUMENTS

- 5.1 **EHS-00008-F1** - Lockout/Tagout Procedure (Albany Only)
- 5.2 **EHSU-00008-F1** - Lockout/Tagout Procedure (Utica Only)
- 5.3 **EHS-00008-F2** - Lockout/Tagout Periodic Inspection Form
- 5.4 **EHS-00008-F3** - Authorization for Removal of Lockout Tagout Devices
- 5.5 **EHS-00008-F6** – Lockout-Tagout Sheet
- 5.6 **ANT-00004** - Contractor Safety Guide for Albany Nanotech Complex and Kiernan Plaza (referred to as Contractor Safety Guide)

6. ROLES AND RESPONSIBILITIES

- 6.1 **Management (includes supervisors)** – responsible for implementing the LOTO program.
- 6.2 **Authorized Employee** - responsible for completing necessary training, authorization, and adhering to LOTO requirements. Places locks or tags on equipment in order to perform servicing or maintenance. Employees are required to be authorized by their manager prior to performing LOTO.
- 6.3 **Affected Employees** - responsible for understanding the purpose and use of energy control procedures and never attempting to remove a LOTO device.
- 6.4 **Other Employees** - responsible for never attempting to remove a LOTO device.
- 6.5 **Site Facilities and Other Organizations Installing Equipment** - responsible for providing a point for controlling hazardous energies and meeting local codes and regulations.
- 6.6 **Environmental Health and Safety (EHS)** - responsible for program development and monitoring compliance.

7. EXCEPTIONS

7.1 Tasks exempted from the requirements of this program include:

- Minor tool changes, observations, adjustments, and servicing activities, performed as part of normal production operations, if they are routine, recurring, or integral to the production operation, and do not expose the individuals to inadvertent contact with an identified hazard.
- Work on plug-and-cord-connected equipment if the individual performing the work has exclusive control of the disconnected power cord and plug.
- 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 employer demonstrates that continuity of service is essential; shutdown of the system is impractical; and documented procedures are followed, and special equipment is used which will provide proven effective protection for employees.
- Installations under exclusive control of the electrical utilities or exposure to electrical hazards from work on, near, or with conductors or equipment in electric utilization installations covered by OSHA Standard 29CFR 1910 Subpart S, 1910.333 and additional electrical safe work practices can be found in Electrical Safety and in OSHA Standards 29CFR 1910 Subpart S, 331-335.

8. TRAINING

- 8.1 **"Authorized Employees"** - Training provides a basic understanding of LOTO as well as **equipment specific training** to ensure that the person performing the lockout has a thorough working knowledge of the equipment and the ability to locate and secure all energy sources involved. The training may be a combination of classroom and hands-on or on the job training.
- 8.2 **"Affected Employees"** - Training provides a basic understanding of LOTO, the potential hazards of not controlling hazardous energies effectively, and the hazards of removing a lockout lock and tag and attempting to restart a piece of equipment. This training is part of Safety Orientation.
- 8.3 **"Other Employees"** - Awareness training provides understanding of the risks of removing a lockout lock and tag or restarting equipment. This may be completed as part of the notification portion of the procedure, Safety Orientation, or by another communication method.

- 8.4 **Retraining** is required for authorized employees whenever there is a change in their job assignment; the equipment or process presents a new hazard; the LOTO procedure changes; or whenever a review, near miss, or injury reveals there are deviations from or inadequacies in the employee's use of the procedure.

9. ENERGY CONTROL (LOTO) PROCEDURES

- 9.1 Procedures shall be developed, documented, and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.

- 9.2 The procedures shall clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

- A specific statement of the intended use of the procedure including the identification of equipment affected;
- Specific procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy;
- Specific procedural steps for the placement, removal, and transfer of LOTO tagout devices and the responsibility for them;
- Specific requirements for testing a machine or equipment to determine and verify the effectiveness of LOTO devices, and other energy control measures;
- Returning equipment to normal service.

NOTES:

- Energy control procedures are required for equipment containing more than one hazardous energy source.
- The EHS-00008-F1 can be used for LOTO of equipment by filling in the applicable blanks for the specific equipment or types of equipment and may be tailored for complex equipment.
- For equipment that cannot be locked out, the tagout must be supplemented by additional measures such as removing an element of the circuit (remove wires from a component and taping them off) or by opening and tagging of an additional valve or disconnect so that more than one tagout must be violated to put an employee at risk.

NOTE: Exception - A written procedure for a particular piece of equipment is not required when all of the following elements exist:

- The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shutting down which could endanger employees;
- The equipment has a single energy source which can be readily identified and isolated;
- The isolation and locking out of that energy source will completely de-energize and deactivate the equipment;
- The 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
- In utilizing this exception, no accidents involving the unexpected activation or re-energizing of the equipment have occurred during servicing or maintenance.

9.3 Periodic Inspection of the Energy Control (LOTO) Procedure

9.3.1 The periodic inspection of the LOTO procedure shall:

- 1) Be conducted at least annually to ensure the procedure is accurate and the requirements of the LOTO program are being followed.
 - Energy control procedures used less frequently than once a year need to be inspected only when used Per OSHA Directive: CPL 02-00-147-29 CFR 1910.147.
- 2) Be conducted by an **authorized employee** other than the employee(s) using the procedure being inspected.
- 3) Be used to correct any deviations or inadequacies observed. The results of the review must be shared with all authorized employees. In the case of a tagout-only procedure, the review must include the limitations of tags as an energy control measure.
 - Examples of methods to review the results are a group meeting, one-on-one with each employee, or email communication.

- 4) Certify that the periodic inspections have been performed. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

9.4 **Protective Materials and Hardware**

9.4.1 Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided by the employer (i.e., NY CREATES) for isolating, securing, or blocking of machines or equipment from energy sources.

9.4.2 LOTO devices shall be unique to the company's lockout program.

9.4.3 Tags and locks shall be:

- Only used for LOTO
- Singularly identified with the employee's name
- Durable and Substantial

9.4.3.1 Locks shall be substantial enough to prevent removal without the use of excessive force or unusual techniques. The lockout device for each employee shall have an individual key. The unique lockout device (lock) shall be a red lock.

9.4.4 Tag devices shall be standardized in print and format, and color, shape, or size. Tagout devices, including their means of attachment, must be substantial enough to prevent inadvertent or accidental removal.

9.4.5 The unique tagout device (Tag) shall have the word DANGER in white letters on a red background on both the front and back of the tag, the words "Do Not Operate" in bold lettering on the front and back of the tag.

9.5 **Contractors and Tenants**

9.5.1 Whenever contractors or tenants are engaged in maintenance or service of equipment, they shall exchange with the site their respective LOTO requirements or procedures. This may be completed during the evaluation process by exchanging the Contractor Safety Guide, through designated representatives, or by other means. Programs shall be compatible with the requirement for the use of locks and tags, and the supplementing of tagout with additional measures, as required by this program, if equipment is not capable of being locked out.

9.5.2 The site shall ensure that employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

9.6 **New, Relocated, or Modified Equipment**

When equipment is installed, relocated, replaced, or undergoes major engineering modification, energy-isolating devices shall be designed and installed that will accept a lockout device.

9.7 **Application and Removal of LOTO Devices**

Each employee who locks out a piece of equipment for servicing to eliminate the exposed hazard is required to place their own lockout lock and tag on the energy control point. Each LOTO device shall be removed from each energy-isolating device by the employee who applied the device.

Exception: When the authorized employee who applied the LOTO device is not available to remove it, that device may be removed under the direction of the employee's manager, who must ensure the following and complete **EHS-00008-F3**:

- Verification by the employer that the authorized employee who applied the device is not at the facility,
- All reasonable efforts are made to contact the authorized employee to inform him/her that his/her LOTO device has been removed, and
- The authorized employee has this knowledge before he/she resumes work at that facility.

9.8 **Group LOTO**

9.8.1 If group LOTO is utilized, the LOTO procedure used must afford a level of protection equivalent to that provided by the implementing of a personal LOTO device. The LOTO procedure used must comply with the following specific requirements:

- Primary responsibility for implementation of the procedure must be assigned to one lead employee who must attach a group lockout device to each energy-isolating device. Examples of group lockout devices: multi-lock hasp and group lock box.
- The lead employee must ascertain the exposure status of each of the other employees involved in the group LOTO.
- When more than one group is involved in the maintenance activity, one lead employee must be designated to coordinate the overall activity and ensure continuity of protection.

- Each employee must affix their personal lockout device to each group lockout device or to the lock-box, verify that isolation and de-energization have been effectively accomplished before starting work and must remove their lockout device(s) when they stop working on the equipment.
- When multiple energy-isolating devices require lockout, locks and a lock-box may also be used. The group lockout device must then be attached to the lock-box and each authorized employee must affix his/her personal lock and tag to the group lockout device. The last space in a group lockout device should not be used; instead, place another group lockout device in that space.
- **EHS-00008-F4** May be used for systems having multiple LOTO points as well as projects requiring multiple LOTO locations.

9.9 Shift or Personnel Changes

Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of LOTO protection, including provision for the orderly transfer of LOTO device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

9.10 Administrative Control Devices, Locks, Warning Signs, and Tags

For purposes other than performing service and a non-red control lock and administrative control tag or only an administrative control tag should be used.

10. RECORDS

10.1 Training

Managers and EHS must maintain (hardcopy or electronic) employee training records.

10.2 LOTO Procedures

Managers must maintain (hardcopy or electronic) the LOTO procedures.

10.3 LOTO Periodic Inspections

Managers must maintain (hardcopy or electronic) completed LOTO periodic inspections for the current year and prior two years.