CAL POLY

Campus Safety Procedure
General Safety –1 (GS-1)

Lockout / Tagout (Control of Hazardous Energy)

1.0 Purpose

The purpose of this program is to establish procedures for affixing appropriate lockout or tagout devices to energy-isolating devices, and to otherwise disable machines or equipment to prevent unexpected energizing, start-up, or release of stored energy. Lockout devices and tags are intended to protect employees who may be working on the systems being shut down. They are not to be used to discourage tampering, to prevent unauthorized operation, or for other purposes.

2.0 Responsibilities

The following persons / entities have responsibilities as delineated below for implementation of this procedure:

2.1 Office of Environmental Health and Safety

It is the responsibility of the Office of Environmental Health and safety to:

a) Maintain and update this Procedure as necessary.

b) Provide consultation to Deans, Directors, Chairpersons, coordinators, Principal Investigators, managers, and supervisors regarding program compliance. E.H.&S. can provide consultation on such issues as: hazard identification and evaluation; procedures for correcting unsafe conditions; systems for communicating with employees; employee training programs; compliance strategies; and record keeping.

2.2 Deans, Directors, Department Chairs, Department Heads

Please see the Cal Poly Injury and Illness Prevention Program, section 7.4 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Deans, Directors, Department Chairs, and Department Heads to:

a) Ensure the development and maintenance of written departmental procedures as necessary and ensure that each supervisor and employee adheres to procedures.

b) Develop and implement an education and training program designed to instruct employees in safe work practices related to controlling potentially hazardous energies.

c) Provide necessary safety equipment, including lockout devices and tags, to employees, at no cost to the employee.

2.3 Principal Investigators and Supervisors

Please see the Cal Poly Injury and Illness Prevention Program, section 7.6 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of Principal Investigators and Supervisors to:

a) Direct the development of workplace procedures to ensure effective compliance with this and other Safety Procedures.

b) Ensure that each employee adheres to adopted procedures.

c) Instruct employees in the recognition and avoidance of unsafe conditions. Ensure that newly hired, newly assigned or reassigned employees are properly trained in all safety procedures associated with their new duties.

2.4 Employees

Please see the Cal Poly Injury and Illness Prevention Program, section 7.7 for a detailed description of responsibilities. For the specific requirements of this Procedure, it is the responsibility of all employees, including student employees, to:

a) Read and comply with procedures and guidelines.

b) Inform their supervisors of workplace hazards without fear of reprisal.

c) Attend established education and training sessions; understand and comply with all applicable safety requirements. Failure to comply with established safety rules may be reflected in performance evaluations and may lead to disciplinary action consistent with procedures described in respective collective bargaining contracts, where applicable.

d) Ask questions of their supervisors when there is concern about an unknown or potentially hazardous situation.

3.0 Procedure

Implementation of the lockout or tagout system shall be performed only by authorized employees. Affected employees and departments shall be notified of the application and removal of lockout or tagout devices. Notification shall be given before the controls are applied, and after they are removed from the machine or equipment.

The established procedure for the application of energy control shall cover the following elements and actions and shall be done in the following sequence. Specific lockout procedures for the specific machine, equipment, or item requiring the lockout shall be documented using the Equipment-Specific Lockout/Tagout Procedure (ELP) Template form:

A). **Preparation for Shutdown**: Before an employee turns off a machine or piece of equipment, they shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

B) **Machine or Equipment Shutdown**: An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of equipment de- energization.

C) **Machine or Equipment Isolation**: All energy- isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

D) **Lockout or Tagout Device Application**: Lockout or tagout devices shall be affixed to each energy-isolating device by authorized employees. Lockout devices, where used, shall be affixed in a manner that will hold the energy in a "safe" or "off" position. Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy-isolating devices from the "safe" or "off" position is prohibited.

1) Where tagout devices are used with energy- isolating devices designed with the capability of being locked, the tag shall be fastened at the same point at which the lock would have been attached.

2) Where a tag cannot be affixed directly to the energy-isolating device, the tag 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.

E) **Stored Energy**: Following the application of lockout or tagout devices to energy-isolating devices, all potentially hazardous stored energy shall be rendered safe. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

F) **Verification of Isolation**: Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and de-energization of the machine or equipment has been accomplished.

G) **Release from Lockout or Tagout**: Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

1) The Machine or Equipment: The work area shall be inspected to ensure that nonessential items have been removed and that machine or equipment components are operationally intact.

2) Employees: The work area shall be checked to ensure that all employees have been safely positioned or removed. Before lockout or tagout devices are removed and before machines or equipment are energized, affected employees shall be notified.

H) **Lockout or Tagout Device Removal**: Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device.

Exception: When the authorized employee who applied the lockout or tagout device (installer) is not available to remove it, that device may be removed under the direction of the installer's immediate supervisor. Specific training and procedures for such removal shall be provided by each department involved in lockout or tagout operations. The procedures and training shall be documented. The documentation shall demonstrate that safety equivalent to the original process of

having only the installer remove the device is maintained. The specific procedure shall include at least the following elements:

1) Verification by the immediate supervisor that the employee who applied the device is not at the facility,

2) Making all reasonable efforts to contact the authorized employee to inform them that his/her lockout or tagout device has been removed, and

3) Ensuring that the authorized employee has this knowledge before they resume work at the facility.

I) **Testing or Positioning of Machines, Equipment, or Components Thereof**: In situations where lockout or tagout devices must be temporarily removed from the energy- isolating device and the machine or equipment energized to test or position the equipment or component thereof, the following sequence of actions shall be followed:

1) Clear the machine or equipment of tools and materials.

2) Remove employees from the machine or equipment area.

3) Remove the lockout or tagout devices.

4) Energize and proceed with testing or positioning.

5) De-energize all systems and reapply energy control measures to continue the servicing and/or maintenance.

J) **Outside Personnel (contractors, etc.)**: Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this program, the designated Cal Poly representative (contract manager) and the outside employer shall inform each other of their respective lockout or tagout procedures. The designated Cal Poly representative shall ensure that his/her personnel understand and comply with restrictions and prohibitions of the outside employer's energy control procedures. If the outside employer has no documented lockout or tagout procedures, they shall ensure that their personnel understand and comply with the procedures established in this program.

K) **Group Lockout or Tagout**: When servicing and/or maintenance is performed by a crew or department, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. This shall be accomplished by:

1) The application of a multi-lock accepting device by the primary authorized employee to the energy- isolating device.

2) The primary authorized employee attaching his/her lock to the multi- accepting device.

3) Each authorized employee shall affix a personal lockout or tagout device to the multi-lock accepting device when they begin work, and shall remove those devices when they stop working on the machine or equipment being serviced or maintained.

4) The primary authorized employee removing his/her lock and the multi-lock accepting device when all service or maintenance has been completed.

L) **Shift or Personnel Changes**: To insure the orderly transfer of lockout or tagout devices between off-going and on-coming employees and minimize exposure to hazards from unexpected

energization, start-up of the machine or equipment, or release of stored energy, these procedures shall be followed:

1) The on-coming personnel shall notify the off-going personnel that they are ready to begin work on the machine or equipment.

2) All lockout and/or tagout devices attached to the machine or equipment by the off-going personnel shall be removed and immediately replaced with like devices by the on-coming authorized personnel.

3) The primary authorized employee shall insure that all pertinent co-ordination between off-going and on-coming personnel has been completed before the on-coming authorized personnel begin work on the machine or equipment and that all necessary energy has been rendered safe.

4.0 Glossary of Terms

Affected Employee - an employee who performs the duties of his or her job in an area in which the energy control procedure is implemented and servicing or maintenance operation are performed, or work with the equipment to be locked or tagged out.

Authorized Employee - an employee who performs servicing or maintenance on machines and equipment. Lockout or tagout is used by these employees for their own protection.

Energy Isolating Device - any mechanical device that physically prevents the transmission or release of energy . These include electrical circuit breakers, disconnect switches, line valves, and blocks.

Energy Source - any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

Energy Control Procedure - written documentation that contains all information needed for authorized employees to safely control hazardous energy during servicing or maintenance of machines or equipment.

Lockout - the placement of a lock on an energy isolating device such as a circuit breaker, disconnect switch, line valve or block in accordance with established procedure so that the equipment or machine controls cannot be activated until the lockout device is removed.

Tagout - placement of a tag, sign or label to an energy isolating device as a warning to others that the equipment or machine cannot be operated until the tagout device is removed.

Campus Safety Procedures are prepared by Cal Poly Environmental Health & Safety. Questions should be directed to David Ragsdale at extension 66662 or e-mailed to dragsdal@calpoly.edu.
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