INTRODUCTION
This program establishes the use of devices, positive methods and procedures to effectively isolate or secure prime movers (the source of mechanical power), machinery and equipment from hazardous energy sources. This includes the cleaning, repairing, servicing, setting-up, adjusting, and unjamming prime movers, machines, and equipment.

SCOPE
1. During Cleaning, Servicing, Adjusting Operations:
   - Machinery or equipment capable of movement must be stopped and power source(s) de-energized or disengaged.
   - Accident prevention signs or tags or both must be placed on the controls of the power source of the machinery or equipment.
   - If necessary, the moveable parts must be mechanically blocked or locked out to prevent inadvertent movement or release of stored energy.

2. During Repair Work and Setting-Up Operations, Machines, Equipment / Prime Movers:
   - Must be locked out or positively sealed in the "off" position if they have lockable controls (or are readily adaptable to lockable controls).
   - Must be de-energized or disconnected from their power source (or other actions taken to effectively prevent inadvertent movement or release of stored energy) if they do not have lockable controls
   - Accident prevention signs and tags (or both) must be placed on the controls.

3. Contractors Working at the Institute
   - Whenever outside contractors are to be engaged in activities covered by the lockout/tagout program, the Institute's on-site lockout or tagout procedures must be followed.

APPLICABLE REGULATIONS
- California Code of Regulations, Title 8 § 2320 and 3314
DEFINITIONS

Affected Employee - An employee whose job requires them to operate or use a machine or equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are being performed under lockout or tagout, or whose job requires the employee to work in an area in which such activities are being performed under lockout or tagout.

Authorized Employee - A qualified person who locks out or tags out specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment.

Assigned Individual Tag – An individual photo tag used to identify the person applying the tagout device.

Blocked – A device that will prevent the sliding, falling, or rolling of raised machinery or equipment.

Energy Isolating Devices – A mechanical device that physically prevents the transmission or release of energy.

- Manually operated circuit breaker
- Disconnect switch
- Line Valve
- Block

Push buttons, selector switches, software controls, interlocks, and other control circuit devices are not considered energy isolating devices.

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

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

Hazardous Energy Control – Using mechanical means to prevent hazardous energy from flowing to a person.

- Isolated – All sources of energy have been controlled by breaking the energy path
- Dissipated – All stored energy has been reduced to a non-hazardous level

Lockout – The placement of a lockout device on an energy isolating device, ensuring that the energy isolating device, and the equipment being controlled cannot be operated until a lockout device is removed.
**Lockout Device** – A device utilizing a means such as a lock, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

**Pressure** – Pressure providing equipment and machinery, such as compressed air, hydraulic systems, gas supplies, and compressed springs, which must be bled off, disconnected, drained, and/or released in a proper manner.

**Tagout** – The placement of a tagout device on an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

**Tagout Device** – A prominent warning tag capable of being securely attached that provides a warning not to use the machine or equipment. The tag shall include the following:
- Name and picture of person placing the tag
- Contact information of placing the tag
- Date the tag was placed
- “Do not operate” or “Do not energize”

**Zero Energy State** – A condition where no energy or pressure is stored in the machinery or equipment.

**RESPONSIBILITIES**

**FACILITIES SUPERVISORS**
- Ensure that all Affected Employees are trained in the significance, purpose, and use of these lockout/tagout procedures.
- Ensure that all Authorized Employees receive the proper level of training and that these employees are provided with the proper equipment and personal protective equipment (PPE) to perform the job safely.
- Ensure that only Authorized employees perform lockout/tagout work.
- Write equipment specific lockout/tagout procedures.

**ENVIRONMENT, HEALTH, AND SAFETY**
- Assisting Facilities Supervisors in writing equipment specific lockout/tagout procedures.
- Assisting in the coordination of appropriate training for Authorized Employees performing lockout/tagout work.
- Annual review of the lockout/tagout program.
PROGRAM COMPONENTS

STEPS FOR LOCKOUT
1. Notify all Affected Employees, including building occupants, that lockout/tagout work will be performed. Authorized Employee will have the Service Center issue a Utility and Service Interruption Notice.
2. If the machine or equipment is operating, shut it down by normal operating procedures (depress the start button, open the switch, close the valve, etc.).
3. Open the energy isolating device, such as a circuit breaker and switch to the “off” position. Push buttons, selector switches, software controls, interlocks, and other control circuit devices are not considered energy isolating devices.
4. All energy isolating devices must be locked out. Lockout the energy isolating device(s) with an assigned lock, hasp, and assigned individual warning tag with the date of the shutdown.
5. When placing a lock is not possible, an assigned individual warning tag must be used along with another means of disconnecting the circuit, machine, or equipment. This can include unplugging the equipment.

VERIFICATION OF LOCKOUT
1. Dissipate all forms of stored energy.
2. Verify that all forms of energy sources have been disconnected.
3. Remove all unnecessary personnel from the area.
4. Test energy isolating devices by trying to operate the machine or equipment using the normal operating controls.
5. Verify that the machine or equipment is at a zero energy state.

STEPS TO RESTART
1. Reinstall and adjust all machine or equipment guards or guarding devices.
2. Remove all tools and parts from the immediate area.
3. Remove all unnecessary personnel from the area.
4. Inform all Affected Employees, in the immediate area, of the startup of the machine or equipment.
5. Remove all assigned locks, hasps, and assigned individual warning tags or other energy isolating devices.
6. Energize all energy sources.
7. Start machine or equipment using normal operating procedures.