

# Standard Operating Procedure (SOP): Safety Lockout/Tagout (LOTO) Protocol

This SOP describes the **Safety lockout/tagout (LOTO) protocol**, which includes procedures for safely de-energizing and isolating machinery and equipment to prevent accidental startup during maintenance and repair. It covers steps for identifying energy sources, applying lockout devices and tags, verifying isolation, safe release of stored energy, and proper removal of lockout/tagout devices. The purpose is to protect employees from hazardous energy and ensure compliance with regulatory standards for workplace safety.

## 1. Scope

This procedure applies to all personnel involved in installation, maintenance, service, or repair of equipment and machinery where the unexpected start-up, energization, or release of stored energy could cause injury.

## 2. Responsibilities

- **Authorized Employees:** Responsible for applying and removing LOTO devices and following this SOP.
- **Affected Employees:** Must recognize LOTO procedures and not attempt to operate locked/tagged out equipment.
- **Supervisors:** Ensure compliance with LOTO procedures and training requirements.

## 3. Procedure

1. **Preparation**
  - Identify all energy sources (electrical, mechanical, hydraulic, pneumatic, chemical, thermal, etc.).
  - Review machine-specific LOTO procedures.
2. **Notification**
  - Inform all affected employees that equipment will be shut down and locked/tagged out for maintenance or repair.
3. **Shutdown**
  - Shut down the equipment/machine as per manufacturer's instructions or procedures.
4. **Isolation**
  - Isolate the equipment from all energy sources using appropriate disconnects, valves, breakers, etc.
5. **Application of Lockout/Tagout Devices**
  - Attach approved lockout devices and tags to each energy-isolating device. Only authorized employees may apply locks/tags.
  - Tags must state the name of the person applying the tag and the date.
6. **Release of Stored Energy**
  - Relieve, disconnect, restrain, or otherwise render safe all stored or residual energy (springs, capacitors, pressure, etc.).
7. **Verification of Isolation**
  - Verify isolation by attempting to operate controls or using proper instruments to confirm zero energy state.
  - Return operating controls to the "off" or neutral position after verification.
8. **Maintenance or Service Work**
  - Proceed with the required maintenance or repair operations.
9. **Removal of Lockout/Tagout Devices (Re-energization)**
  - a. **Inspection**
    - Ensure equipment is intact and work is complete. Remove tools and materials.
  - b. **Area Clearance**
    - Confirm all personnel are safely positioned and clear of equipment.
  - c. **Device Removal**
    - Only the authorized employee who applied the lock/tag may remove it, after notification.
  - d. **Notification**
    - Notify affected employees that LOTO devices have been removed and equipment will be re-energized.

## 4. Training

- All affected and authorized employees must receive initial and periodic LOTO training.

## 5. Documentation

- Maintain records of LOTO procedures, training, and periodic inspections.

## 6. References

- OSHA Standard 29 CFR 1910.147 – “The Control of Hazardous Energy (Lockout/Tagout)”
- Company-specific LOTO procedures/manuals

**Note:** Noncompliance with LOTO procedures can result in severe injury or death. Strict adherence to this SOP is mandatory.