

National Park Service Lockout/Tagout Policy

This standard helps safeguard employees from hazardous energy while they are performing service or maintenance on machines and equipment. The standard identifies the practices and procedures necessary to shut down and lockout or tagout machines and equipment, requires that employees receive training in their roles in the lockout/tagout program and mandates that periodic inspections be conducted to maintain or enhance the energy control program.

The standard requires employers to establish procedures for isolating machines or equipment from the input of energy and affixing appropriate locks or tags to energy-isolating devices to prevent any unexpected energization, start-up or release of stored energy that would injure workers. When tags are used on energy-isolating devices capable of being locked out, the employer must provide additional means to assure a level of protection equivalent to that of locks. The standard also requires the training of employees and periodic inspections of the procedures to maintain or improve their effectiveness.

This rule requires that, in general, before service or maintenance is performed on machinery or equipment, it must be turned off and disconnected from the energy source and the energy-isolating device must be either locked or tagged out. OSHA estimates that adherence to the requirements of this standard can eliminate nearly two percent of all workplace deaths in establishments affected by this rule and can have a significant impact on worker safety and health in the United States.

Scope

The lockout/tagout standard applies to NPS work environments, and covers the servicing and maintenance of machines and equipment in which the unexpected start-up or the release of stored energy could cause injury to employees. (If employees are performing service or maintenance tasks that do not expose them to the unexpected release of hazardous energy, the standard does not apply.) This program applies to all employees and volunteers of the National Park Service who use lockout/tagout in the course of their duties.

The standard establishes minimum performance requirements for the control of hazardous energy.

The standard does not apply in the following situations:

- While servicing or maintaining cord and plug connected electrical equipment. (The hazards must be controlled by unplugging the equipment from the energy source; the plug must be under the exclusive control of the employee performing the service and/or maintenance.)

- During hot-tap operations that involve transmission and distribution systems for gas, steam, water or petroleum products when: they are performed on pressurized pipelines; when continuity of service is essential and shutdown of the system is impractical; and when employees are provided with an alternative type of protection that is equally effective.

Normal Production Operations

OSHA recognizes that machines and equipment present many hazardous situations during normal production operations – i.e., whenever machines and equipment are used to perform their usual production function. These production hazards are covered by rules in other General Industry Standards, such as the requirements in Subpart O of Part 1910 for general machine guarding and guarding power transmission apparatus (1910.212 and 1910.219). In certain circumstances, however, some hazards encountered during normal production operations may be covered by the lockout/tagout rule. The following paragraphs illustrate some of these instances.

Servicing and/or Maintenance Operations

If a servicing activity, such as lubricating, cleaning or unjamming the production equipment, takes place during production, the employee performing the servicing may be subjected to hazards that are not encountered as part of the production operation itself. Workers engaged in these operations are covered by lockout/tagout when any of the following conditions occurs:

- The employee must either remove or bypass machine guards or other safety devices, resulting in exposure to hazards at the point of operation.
- The employee is required to place any part of his or her body in contact with the point of operation of the operational machine or piece of equipment.
- The employee is required to place any part of his or her body into a danger zone associated with a machine operating cycle.

In the above situations, the equipment must be de-energized and locks or tags must be applied to the energy-isolation devices.

In addition, when normal servicing tasks, such as setting equipment up, and/or making significant adjustments to machines, do not occur during normal production operations, employees performing such tasks are required to lock out or tag out if they can be injured by unexpected energization of the equipment.

OSHA also recognizes that some servicing operations must be performed with the power on. Making many types of fine adjustments, such as centering the belt on conveyors, is one example. Certain aspects of troubleshooting, such as identifying the source of the problem as well as checking to ensure that it has been corrected, is

another. OSHA requires the employer to provide effective protection for employees performing such operations. Although in these cases, a power-on condition is essential either to accomplish the particular type of servicing or to verify that it was performed properly. Lockout or tagout procedures are required when servicing or maintenance occurs with the power off.

Minor Servicing Tasks

Employees performing minor tool changes and adjustments and/or other minor service activities during normal production operations that are routine, repetitive and integral to the use of the production equipment are not covered by the lockout/tagout standard, provided the work is performed using alternative measures that give effective protection.

References

1. 29 CFR, 1910.147, OSHA General Industry Standards, Subpart J – General Environmental Controls.

Definitions

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 operations are performed. An affected employee does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing the energy control procedure. An affected employee becomes an “authorized” employee whenever he or she performs servicing or maintenance functions on machines or equipment that must be locked or tagged.

Authorized employee – 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.

Capable of being locked out – An energy-isolating device is considered capable of being locked out if it meets one of the following requirements:

- It is designed with a hasp to which a lock can be attached.
- It is designed with any other integral part through which a lock can be affixed.
- It has a locking mechanism built into it.
- It can be locked without dismantling, rebuilding or replacing the energy-isolating device or permanently altering its energy control capability.

Energized – Machines and equipment are energized when they are connected to an energy source or they contain residual or stored energy.

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

Energy control procedure – A written document that contains those items of information an authorized employee needs to know in order to safely control hazardous energy during servicing or maintenance of machines or equipment. (A more comprehensive explanation is given beginning on page six.)

Energy control program – A program intended to prevent the unexpected energizing or the release of stored energy in machines or equipment on which servicing and maintenance is being performed by employees. The program consists of energy control procedure(s), an employee-training program and periodic inspections.

Energy-isolating device – A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy-isolating devices.

Hot tap – A procedure used in the repair, maintenance and services activities, which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam and petrochemical distribution systems.

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.

Lockout device – Any device that uses positive means such as a lock (either key or combination), to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

Normal production operations – The utilization of a machine or equipment to perform its intended production function.

Servicing and/or maintenance – Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes when the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting up – Any work performed to prepare a machine or equipment for its normal production operation.

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.

Tagout device – Any prominent warning device, such as a tag and a means of attachment, that can be securely fastened to an energy-isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not to be operated until the tagout device is removed in accordance with the energy control procedure.

Program Elements

1. Energy Control Program

The lockout/tagout rule requires that the employer establish an energy control program that includes: documented energy control procedures; an employee-training program and periodic inspections of the procedures. The standard requires employers to establish a program to ensure that machines and equipment are isolated and inoperative before any employee performs service or maintenance where the unexpected energization, startup or release of stored energy could occur and cause injury.

The purpose of the energy control program is to ensure that whenever the possibility of unexpected machine or equipment startup exists, or when the unexpected release of stored energy could occur and cause injury, the equipment is isolated from its energy source(s) and rendered inoperative prior to servicing or maintenance.

Employers have the flexibility to develop a program and procedures that meet the needs of their particular workplace and the particular types of machines and equipment being maintained or serviced.

2. Energy Control Procedures

This standard requires that energy control procedures be developed, documented and used to control potentially hazardous energy sources whenever workers perform activities covered by the standard.

The written procedures must identify the information that authorized employees must know in order to control hazardous energy during service or maintenance. If this information is the same for various machines or equipment or if other means of logical grouping exists, then a single energy control procedure may be sufficient. If there are other conditions (such as multiple energy sources), different connecting means or a particular sequence that must be followed to shut down the machine or equipment, then the employer must develop separate energy control procedures to protect employees.

The energy control procedure must outline the scope, purpose, authorization, rules and techniques that will be used to control hazardous energy sources as well as the means that will be used to enforce compliance. At a minimum it includes, but is not limited to, the following elements:

- A statement on how the procedure will be used.
- The procedural steps needed to shut down, isolate, block and secure machines or equipment.
- The steps designating the safe placement, removal and transfer of lockout/tagout devices and who has the responsibility for them.
- The specific requirements for testing machines or equipment to determine and verify the effectiveness of locks, tags and other energy-control measures.

The procedure must include the following steps: (1) preparing for shutdown, (2) shutting down the machine(s) or equipment, (3) isolating the machine or equipment from the energy source(s), (4) applying the lockout or tagout device(s) to the energy-isolating device(s), (5) safely releasing all potentially hazardous stored or residual energy, and (6) verifying the isolation of the machine(s) or equipment prior to the start of service or maintenance work.

In addition, before lockout or tagout devices are removed and energy is restored to the machines or equipment, certain steps must be taken to re-energize equipment after service is completed, including: (1) assuring that machines or equipment components are operationally intact; and (2) notifying affected employees that lockout or tagout devices are removed from each energy-isolating device by the employee who applied the device.

3. Energy-Isolating Devices

The employer's primary tool for providing protection under the standard is the energy-isolating device, which is the mechanism that prevents the transmission or release of energy and to which all locks or tags are attached. This device guards against accidental machine or equipment startup or the unexpected re-energization of equipment during servicing or maintenance. There are two types of energy-isolating devices: those capable of being locked and those that are not. The standard differentiates between the existence of these two conditions and the employer and employee responsibilities in each case.

When the energy-isolating device cannot be locked out, the employer must use tagout. Of course, the employer may choose to modify or replace the device to make it capable of being locked. When using tagout, the employer must comply with all tagout-related provisions of the standard and, in addition to the normal training required for all employees, must train his or her employees in the following limitations of tags:

- Tags are essentially warning devices affixed to energy-isolating devices and do not provide the physical restraint of a lock.
- When a tag is attached to an isolating means, it is not to be removed except by the person who applied it. It is never to be bypassed, ignored or otherwise defeated.
- Tags must be legible and understandable by all employees.
- Tags and their means of attachment must be made of materials that will withstand the environmental conditions encountered in the workplace.
- Tags may evoke a false sense of security. They are only one part of an overall energy-control program.
- Tags must be securely attached to the energy-isolating devices so that they cannot be detached accidentally during use.

If the energy-isolating device is lockable, the employer shall use locks unless he or she can prove that the use of tags would provide protection at least as effective as locks and would assure "full employee protection."

Full employee protection includes complying with all tagout-related provisions plus implementing additional safety measures that can provide the level of safety equivalent to that obtained by using lockout. This might include removing and isolating a circuit element, blocking a controlling switch, opening an extra disconnecting device or removing a valve handle to reduce the potential for any inadvertent energization.

Although OSHA acknowledges the existence of energy-isolating devices that cannot be locked out, the standard clearly states that whenever major replacement, repair, renovation or modification of machines or equipment is performed and whenever new machines or equipment are installed, the employer must ensure that the energy-isolating devices for such machines or equipment are lockable. Such modifications and/or new purchases are most effectively and efficiently made as part of the normal equipment replacement cycle. All newly purchased equipment must be lockable.

4. Requirements for Lockout/Tagout Devices

When attached to an energy-isolating device, both lockout and tagout devices are tools that the employer can use in accordance with the requirements of the standard to help protect employees from hazardous energy. The lockout device provides protection by holding the energy-isolating device in the safe position, thus preventing the machine or equipment from becoming energized. The tagout device does so by identifying the energy-isolating device as a source of potential danger; it indicates that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed. Whichever devices are used, they must be singularly identified, must be the only devices used for controlling hazardous energy and must meet the following requirements:

- Durable – Lockout and tagout devices must withstand the environment to which they are exposed for the maximum duration of the expected exposure. Tagout devices must be constructed and printed so that they do not deteriorate or become illegible, especially when used in corrosive (acid and alkali chemicals) or wet environments.
- Standardized – Both lockout and tagout devices must be standardized according to color, shape or size. Tagout devices must also be standardized according to print and format.
- Substantial – Lockout and tagout devices must be substantial enough to minimize early or accidental removal. Locks must be substantial to prevent removal except by excessive force of special tools such as bolt cutters or other metal-cutting tools. Tag means of attachment must be non-reusable, attachable by hand, self-locking and non-releasable, with a minimum unlocking strength of no less than 50 pounds. The device for attaching the tag also must have the general design and basic characteristics equivalent to a one-piece nylon cable tie that will withstand all environments and conditions.
- Identifiable – Locks and tags must clearly identify the employee who applies them. Tags must also warn against hazardous conditions if the machine or equipment is energized and must include a legend such as the following: DO NOT START, DO NOT OPEN, DO NOT CLOSE, DO NOT ENERGIZE, DO NOT OPERATE.

5. Employee Training

The employer must provide effective initial training and retraining as necessary and must certify that such training has been given to all employees covered by the standard. The certification must contain each employee's name and dates of training.

For the purposes of the standard, there are three types of employees – authorized, affected and other. The amount and kind of training that each employee receives is based upon (1) the relationship of that employee's job to the machine or equipment being locked or tagged out, and (2) the degree of knowledge relevant to hazardous energy that he or she must possess. For example, the employer's training program for authorized employees (those who are charged with the responsibility for implementing the energy control procedures and performing the service and maintenance) must cover, at minimum, the following areas:

- Details about the type and magnitude of the hazardous energy sources present in the workplace.
- The methods and means necessary to isolate and control those energy sources (i.e., the elements of the energy control procedure[s]).

By contrast, affected employees (usually the machine operators or users) and all other employees need only be able to (1) recognize when the control procedure is being implemented, and (2) understand the purpose of the procedure and the importance of not attempting to start up or use the equipment that has been locked or tagged out.

Because an "affected" employee is not one who is performing the service of maintenance, that employee's responsibilities under the energy control program are simple: whenever there is a lockout or tagout device in place on an energy-isolating device, the affected employee leaves it alone and does not attempt to operate the equipment.

Every training program must ensure that all employees understand the purpose, function and restrictions of the energy control program and that authorized employees possess the knowledge and skills necessary for the safe application, use and removal of energy controls.

Training programs used for compliance with this standard, which is performance-oriented, should deal with the equipment, type(s) of energy and hazard(s) specific to the workplace being covered.

Retraining must be provided, as required, whenever there is a change in job assignments, a change in machines, equipment or processes that present a new hazard, or a change in energy control procedures. Additional retraining must be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedure.

6. Periodic Inspections

Periodic inspections must be performed at least annually to assure that the energy control procedures (locks and tags) continue to be implemented properly and that the employees are familiar with their responsibilities under those procedures. In addition, the employer must certify that the periodic inspections have been performed. The certification must identify the machine or equipment on which the energy control procedure was used, the date of the inspection, the employees included in the inspection and the name of the person performing the inspection. For lockout procedures, the periodic inspection must include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control procedure being inspected. When a tagout procedure is inspected, a review on the limitation of tags, in addition to the above requirements, must also be included with each affected and authorized employee.

7. Application of Controls and Lockout/Tagout Devices

The established procedure of applying energy controls includes the specific elements and actions that must be implemented in sequence. These are briefly identified as follows:

- a. Prepare for shut down.
- b. Shut down the machine or equipment.
- c. Apply the lockout or tagout device.
- d. Render safe all stored or residual energy.
- e. Verify the isolation and de-energization of the machine or equipment.

8. Removal of Locks and Tags

Before lockout or tagout devices are removed and energy is restored to the machine or equipment, the authorized employee(s) must take the following actions or observe the following procedures:

- a. Inspect the work area to ensure that non-essential items have been removed and that machine or equipment components are intact and capable of operating properly.
- b. Check the area around the machine or equipment to ensure that all employees have been safely positioned or removed.
- c. Notify affected employees immediately after removing locks or tags and before starting equipment or machines.
- d. Make sure that locks or tags are removed ONLY by those employees who attached them. (In the very few instances when this is not possible, the device may be removed under the direction of the employer, provided that he or she strictly adheres to the specific procedures outlined in the standard.)

9. Additional Safety Requirements

Special circumstances exist when: (1) machines need to be tested or repositioned during servicing, (2) outside (contractor) personnel are at the worksite, (3) servicing or maintenance is performed by a group (rather than one specific person), and (4) shifts or personnel changes occur.

- Testing or positioning of machines.

OSHA allows the temporary removal of locks or tags and the re-energization of the machine or equipment ONLY when necessary under special conditions (for example, when power is needed for the testing or positioning of machines, equipment or components). The re-energization must be conducted in accordance with the sequence of steps listed below:

- a. Clear the machine or equipment of tools and materials.
- b. Remove employees from the machine or equipment area.
- c. Remove the lockout or tagout devices as specified in the standard.
- d. Energize and proceed with testing or positioning.
- e. De-energize all systems, isolate the machine or equipment from the energy source, and reapply lockout or tagout devices as specified.

- Outside personnel (contractors, etc.).

The on-site employer and the outside employer must inform each other of their respective lockout or tagout procedures. Each employer must ensure that his or her personnel understand and comply with all restrictions and/or prohibitions of the other employer's energy control program.

- Group lockout or tagout.

During all group lockout/tagout operations where the release of hazardous energy is possible, each authorized employee performing service or maintenance shall be protected by his/her personal lockout or tagout device or comparable mechanism that affords equivalent protection.

- Shift or personnel changes.

Specific procedures must ensure the continuity of lockout or tagout protection during shift or personnel changes.

Technical Appendixes

Appendix A: Written Lockout/Tagout Program

Appendix B: List of Authorized Personnel for Lockout/Tagout Procedures

Appendix C: Certification of Training for Authorized Personnel

Appendix D: Certification of Training for Affected Personnel

Appendix E: Authorized Employee Lockout/Tagout Annual Certification

Appendix F: Outside Personnel/Contractor Certification

Appendix G: Equipment Specific Procedure

Appendix H: Lockout/Tagout Procedures Checklist

Appendix I: Supervisors' Safety Checklist – Lockout Tagout

Appendix J: Lockout/Tagout Decision Flowchart

Appendix A: Written Lockout/Tagout Program

Written Program Requirements

A written lockout/tagout program should be prepared that covers all workplaces where employees use lockout/tagout. The written plan must describe the park's flexibility to develop a program and procedures that meet the needs of their particular workplace and the particular types of machines and equipment being maintained or serviced. It must be maintained at each work site. The written program must include the following:

Lockout/Tagout Procedure for (Name Of Park)

1. Purpose

This procedure establishes the minimum requirements for controlling hazardous energy whenever maintenance or repair is done on machinery, utility supplies or electrical equipment and fixtures. It is used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

2. Introduction

This Standard Operating Procedure (SOP) has been written to guide and document the lockout/tagout of energy isolated devices as required by the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.147. The SOP is meant as a guiding document to help you understand and interpret OSHA regulations. It has been written with the park's specific equipment and machinery in mind.

If you have any questions about this program or identified procedures, contact your Supervisor or Park Safety Manager.

3. Objectives

To establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced.

- a. To establish a safe and positive means of shutting down machinery, equipment and systems.
- b. To prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
- c. To provide a secondary control system (tagout) when it is impossible to positively lockout the machinery or equipment.

- d. To establish responsibility for implementing and controlling lockout/tagout procedures.
- e. To ensure that only approved locks, standardized tags and fastening devices provided by the park will be utilized in the lockout/tagout procedures.

4. Areas Of Responsibility

- a. _____ will be responsible for implementing the lockout/tagout program.
- b. _____ are responsible to enforce the program and ensure compliance with the procedures in their department.
- c. _____ is responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized employees.
- d. Authorized employees (those contained in Appendix B) are responsible to follow established lockout/tagout procedures.
- e. Affected employees (all other employees in the facility) are responsible for ensuring they do not attempt to restart or re-energize machines or equipment which are locked out or tagged out.

Procedures

Preparation for Lockout or Tagout

Employees who are required to utilize the lockout/tagout procedure (see Appendix B) must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means.

The four types of energy sources are:

- a. Electrical (most common form)
- b. Hydraulic or pneumatic
- c. Fluids and gases
- d. Mechanical

Make a survey to locate and identify all isolating devices to be certain which switch(s), valve(s) or other energy-isolating devices apply to the equipment to be locked or tagged out. More than one energy source can be utilized on some equipment and the PROPER procedure must be followed in order to identify energy sources and lockout/tagout accordingly. See Appendix G for specific procedure format.

Electrical

- a. Shut off power at machine and disconnect.
- b. Disconnecting means must be locked or tagged.
- c. Press start button to see that correct systems are locked out.
- d. All controls must be returned to their safest position.
- e. Points to remember:
 - 1) If a machine or piece of equipment contains capacitors, they must be drained of stored energy.
 - 2) Disconnecting should include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches and electrical interlocks.

Note:

- 1) Some equipment may have a motor isolating shut-off and a control isolating shutoff.
- 2) If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee or the plug end of the cord must be locked out or tagged out.

Hydraulic/Pneumatic

- a. Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lock out or tag out the valve supplying energy to this piece of equipment.
- b. Stored pressure from hydraulic/pneumatic lines shall be drained/bled when release of stored energy could cause injury to employees.
- c. Make sure controls are returned to their safest position (off, stop, standby, inch, jog, etc.).

Fluids and Gases

- a. Identify the type of fluid or gas and the proper [NEED MORE INFO HERE]
- b. Close valves to prevent flow, lockout/tagout.
- c. Determine the isolating device, close and lockout or tagout.
- d. Drain and bleed lines to zero energy state.

NOTE: Some systems may have electrically controlled valves; if so, they must be shut off, locked or tagged out.

- e. Check for zero energy state at the equipment.

Mechanical Energy (Gravity activation, stored in springs, etc.)

- a. Block out or use die ram safety chain.
- b. Lockout or tagout safety device.
- c. Shut off, lockout or tagout electrical system.
- d. Check for zero energy state.
- e. Return controls to safest position.

Release From Lockout/Tagout

- a. Inspection – Make certain the work is completed; inventory tools and equipment used.
- b. Clean-up – Remove all towels, rags, work-aids, etc.
- c. Replace guards – Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
- d. Check controls – All controls should be in their safest position.
- e. The work area shall be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
- f. Remove locks/tags – Remove only your lock or tag.

Procedure Involving More Than One Person

When servicing and/or maintenance is performed by more than one person, each authorized employee shall place his or her own lock or tag on the energy-isolating source. This shall be done by utilizing a multiple lock scissors clamp if the equipment is capable of being locked out. If the equipment cannot be locked out, then each authorized employee must place his or her tag on the equipment.

Procedure for the Removal of an Authorized Employee's Lockout/Tagout by the Park

Each location must develop written procedures under the above heading that complies with 1910.147(e)(3) that can be utilized at that location. Your procedures should include the following:

1. Verification by employer that the authorized employee who applied the device is not in the facility.
2. Make reasonable efforts to advise the employee that his or her device has been removed. (This can be done when he returns to the facility).
3. Ensure that the authorized employee has this knowledge before he resumes work at the facility.

Procedures for Shift or Personnel Changes

Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection. This includes provision for the orderly transfer of lockout or tagout 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.

Should the shift change before the machinery or equipment can be restored to service, the lockout and tagout must remain. If the task is reassigned to the next shift, those employees must lockout and tagout before the previous shift may remove their lock and tag.

Procedures for Outside Personnel/Contractors

Outside personnel/contractors shall be advised that the park has and enforces the use of lockout/tagout procedures. They will be informed of the use of locks and tags and notified about the prohibition relating to attempts to restart or re-energize machines or equipment that are locked out or tagged out.

The park will obtain information from the outside personnel/contractor about their lockout/tagout procedures and advise affected employees of this information.

The outside personnel/contractor will be required to sign a certification form (see Appendix F). If the outside personnel/contractor has previously signed a certification that is on file, there is no need to have them sign a new certification.

Training and Communication

Each authorized employee who will be utilizing the lockout/tagout procedure will be trained in the recognition of applicable hazardous energy sources, type and magnitude of energy available in the work place and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the lockout/tagout procedure) shall be instructed in the purpose and use of the lockout/tagout procedure and the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

Training will be certified using Appendix C: Authorized Personnel or D: Affected Personnel. The certification will be retained in the employee's personnel file.

Procedures for Periodic Inspection

A periodic inspection (at least annually) will be conducted of each authorized employee under the lockout/tagout procedure. This inspection shall be performed by the **(Responsible person)** provided they are not the ones utilizing the energy control procedure being inspected.

The inspection will include a review between the inspector and each authorized employee of that employee's responsibilities under the energy control (lockout/tagout) procedure. The inspection will also consist of a physical inspection of the authorized employee while performing work under the procedures.

The **(Responsible person)** shall certify in writing that the inspection has been performed. The written certification (see Appendix E) shall be retained in the individual's personnel file.

Appendices H-J contain checklists and a flowchart that may be used as a tool for the park's annual self-evaluation.

**Appendix B: List of Authorized Personnel for
Lockout/Tagout Procedures**

NAMES

JOB TITLE

Appendix C: Certification of Training for Authorized Personnel

Training Certificate

Name _____ Department _____

I understand the training I have received on the Mandatory Lockout – Tagout Program. The training consisted of:

- Location of equipment, control operation and energy isolation points
- How to safely turn on and off equipment
- Types and hazards of energy sources
- Type and magnitude of the energy
- Methods and means necessary for energy isolation

I understand the hazards of electricity, hydraulic force and machines in motion. I understand that I have been trained to protect myself by not reaching into (breaking the plane on) any machinery until I have personally locked and tagged all sources of energy and ensured that the machinery controls have been disabled.

I understand that if I chose to isolate a machine energy source by unplugging the power cord, I must be in control of the plug at all times, and that I may not leave the area until the machine is in a condition that would allow the machine to be safely plugged into a receptacle.

I acknowledge receipt of necessary locks, hasps, tags, etc. required for effective isolation of electrical power to a single piece of equipment, and that I have available (from Supervisors) material needed for isolating hydraulic fluid flow to hydraulic motors. I understand that if I need additional lockout/tagout material, I am accountable for requesting it from a Supervisor in my Department.

I understand that VIOLATING THE LOCKOUT/TAGOUT PROCEDURE will result in disciplinary action up to and including termination of employment.

Employee _____

Trainer Signature _____ Date _____

Appendix D: Certification of Training for Affected Personnel

I CERTIFY THAT I RECEIVED TRAINING AS AN AFFECTED EMPLOYEE UNDER
_____ LOCKOUT/TAGOUT PROGRAM. I FURTHER
CERTIFY AND UNDERSTAND THAT I AM PROHIBITED FROM ATTEMPTING TO
RESTART OR RE-ENERGIZE MACHINES OR EQUIPMENT WHICH ARE LOCKED
OUT OR TAGGED.

AFFECTED EMPLOYEE SIGNATURE

DATE

**Appendix E: Authorized Employee
Lockout/Tagout Annual Certification**

The Authorized Employee listed below was observed conducting a Lockout/Tagout. The purpose of this observation is to ensure this employee understands the procedures used at this facility for the control of energy associated with equipment. The below listed employee successfully conducted the Lockout/Tagout and understands the 10-step procedure listed below.

Employee _____ Date _____

Department _____ Shift _____

Selected Piece of Equipment _____

10 Step Procedure

Installing Locks and Tags

- Notified Affected Employees
- Shutdown equipment
- Isolated all energy to the equipment
- Locked and Tagged energy controls
- Released stored and/or residual energy
- Tested controls to ensure inadvertent startup is not possible

Restoring from Lockout/Tagout

- Notified Affected Employees – Locks and Tags to be removed
- Checked equipment to ensure all guards in place and tools removed
- Ensured controls were in Neutral or Off position
- Properly removed Locks and Tags and made equipment ready for use

Changes or Recommendations in Procedure

Inspector Signature _____

Employee Signature _____

Appendix F: Outside Personnel/Contractor Certification

I CERTIFY THAT _____ AND _____
(OUTSIDE PERSONNEL/CONTRACTOR) HAVE INFORMED EACH OTHER OF OUR
RESPECTIVE LOCKOUT OR TAGOUT PROCEDURES.

NAME (PRINTED)

SIGNATURE

DATE

OUTSIDE PERSONNEL/CONTRACTOR (PRINTED)

SIGNATURE

DATE

Appendix G: Equipment-Specific Procedure

Equipment Specific Procedure

FOR _____

DATE _____

Machine Identification

General Description:

Manufacturer:

Model Number:

Serial Number:*

Location of equipment:

Operator Controls

The type of controls available to the operator need to be determined. This should help identify energy sources and lockout capacity for the equipment.

List types of operator controls:

* If more than one piece of same equipment, list all serial numbers.

Energy Sources

The energy sources present on this equipment are: (electrical, steam, hydraulic, pneumatic, natural gas, stored energy, etc.).

Stored Energy: Following the application of the lockout or tagout devices to the energy-isolating devices, all potential or residual energy will be relieved, disconnected, restrained and otherwise rendered safe.

ENERGY	LOCATION	LOCKABLE		TYPE OF LOCK OR BLOCK NEEDED
		YES	NO	

Location shall positively identify the exact breaker, valve, switch or other disconnect or blocking device to be locked and tagged to isolate the source of energy from the work area.

Type of Lockout shall specifically name the exact type of locking device needed to ensure the disconnect or blocking device stays in the isolated condition/position (i.e. Breaker Clip, Valve Handwheel Cover, Blank Flange, etc.).

Shutdown Procedures

List the steps in the order necessary to shut down and de-energize the equipment. Be specific. For stored energy, be specific about how the energy will be dissipated or restrained.

Procedure:

Lock Type and Location:

De-energized State To Be Verified? How?

Notify all affected employees when this procedure is in application

Start-Up Procedures

List the steps in the order necessary to reactivate (energize) the equipment. Be specific.

Procedure:

Energy Source Activated:

Notify all affected employees when this procedure is in application

Procedures for Operations and Service/Maintenance

List those operations where the procedure above does not apply (see 29 CFR 1910.147 (a)(2)). Alternate measures that provide effective protection must be developed for these operations. Job Safety Analysis is one method of determining appropriate measures.

Operation Name:

Affected and Authorized Employees

List each person affected by this procedure and those authorized to use this procedure.

AFFECTED EMPLOYEES	
NAME	JOB TITLE

Appendix H: Lockout/Tagout Procedures Checklist

LOCKOUT/TAGOUT PROCEDURES CHECKLIST	
YES/NO	
	Where the power disconnecting means for equipment does not also disconnect the electrical control circuit:
	Are the appropriate electrical enclosures identified?
	Is means provided to assure the control circuit can also be disconnected and locked out?
	Is the locking out of control circuits in lieu of locking out main power disconnects prohibited?
	Are all equipment control valve handles provided with a means for locking out?
	Does the lock-out procedure require that stored energy (mechanical, hydraulic, air, etc.) be released or blocked before equipment is locked out for repairs?
	Are appropriate employees provided with individually keyed personal safety locks?
	Are employees required to keep personal control of their key(s) while they have safety locks in use?
	Is it required that only the employee exposed to the hazard, place or remove the safety lock?
	Is it required that employees check the safety of the lock out by attempting a startup after making sure no one is exposed?
	Are employees instructed to always push the control circuit stop button immediately after checking the safety of the lock out?
	Is there a means provided to identify any or all employees who are working on locked-out equipment by their locks or accompanying tags?
	Are a sufficient number of accident preventive signs or tags and safety padlocks provided for any reasonably foreseeable repair emergency?
	When machine operations, configuration or size requires the operator to leave his or her control station to install tools or perform other operations, and that part of the machine could move if accidentally activated, is such element required to be separately locked or blocked out?
	In the event that equipment or lines cannot be shut down, locked out and tagged, is a safe job procedure established and rigidly followed?

Appendix I: Supervisor's Safety Checklist-Lockout/Tagout

SUPERVISOR S SAFETY CHECKLIST LOCKOUT/TAGOUT		
Supervisor:		Department/Area:
Date:		
YES	NO	
Area Safety Check		
		No broken valve hand-wheels, controls or switches
		All controls, valves and switches are labeled
		Each authorized employee has been issued locks and tags
		Locks and tags are standardized throughout facility
		Locks and tags are identifiable to a specific employee
		Locks and tags are not used for other purposes
		Locking devices are available for every type of isolation device
		Material used to affix tag rated at 50 pounds or greater – no strings allowed
		All breakers are labeled
Employee Training – Workers are trained:		
		that only authorized employees may attach a lock and tag
		that only the person who attached the lock and tag may remove it
		to verify isolation before beginning work
		to notify "affected" employees before locking out equipment
		to re-install machine guards before removing locks and tags
		to notify "affected" employees before removing locks or re-starting

Appendix J: Lockout/Tagout Decision Flow Chart

