

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

I. PURPOSE

This program establishes procedures for de-energizing, isolating, and ensuring the energy isolation of equipment and machinery. The program will be used to ensure that equipment and machinery is de-energized and isolated from unexpected start-up by physically locking machinery in a state of zero energy. In the absence of locking capabilities, tagout the device to warn against energization, and take at least one additional precaution, such as removing the fuse.

These procedures will provide the means of achieving the purpose of this program, prevention of injury to Village Services Department Employees (employees) from the unexpected energization or start-up of equipment and machinery, or from the release of stored energy.

II. APPLICATION

This program applies to the control of energy during the servicing and/or maintenance of equipment and machinery at Village of Bloomingdale.

Normal operations are covered by this program if a guard or other safety device is removed or bypassed, or any part of the body is placed into an area of the equipment or machinery where work is performed on the material, or a danger zone exists during the operating cycle. Minor tool changes, adjustments, and other minor servicing activities which take place during normal production operations do not require isolation and lockout/tagout if they are routine and integral to the use of the equipment, and the operator has direct control over all energy sources to the equipment. (Note: Once the operator leaves the area, direct control of the equipment has been lost and lockout/tagout is required.) Other exclusions include, but are not limited to the following:

- Work on cord and plug connected electric equipment when it is unplugged, and the employee working on the equipment has complete control over the plug.
- Hot tap operations involving gas, steam, water or petroleum products when the employer shows that continuity of service is essential, shutdown is impractical and documented procedures are followed to provide proven effective protection for employees.

III. SCOPE

This program will include all Village of Bloomingdale employees whose duties require them to service, install, repair, adjust, lubricate, inspect, or perform work on powered equipment or machinery which may also have the potential for stored energy.

IV. DEFINITIONS

Affected employee . An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized employee . A person who locks or implements a tagout system procedure on machines or equipment to perform servicing or maintenance. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment which must be locked or tagged out.

“Capable of being locked out” . An energy isolating device will be considered to be capable of being locked out either if it is designed with a clasp or other attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be 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.

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

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 slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch, and other control circuit type devices.

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

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 . A device that utilizes positive means such as a lock, either key or combination type, to hold an energy isolating device in the safety position and prevent the energizing of a machine or equipment.

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

Servicing and/or maintenance . Work place 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, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

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

Stored energy . Energy that is available and may cause movement even after energy sources have been isolated. Stored energy may be in the form of compressed springs, elevated equipment components, hydraulic oil pressure, pressurized water, air, steam, or gas, or rotating flywheels, shafts or cams.

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 . 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, to indicate that the energy isolating device and the equipment being controlled may not be opened until the tagout device is removed.

V. PROGRAM RESPONSIBILITIES

- A.** The Assistant Director of Village Services and Utilities Superintendent will have overall responsibility of the program to ensure that: authorized and affected employees receive adequate training and information; the program is evaluated annually; the lockout/tagout equipment is properly used; and the procedures of this program are followed. All Village Services Department Supervisors (supervisors) will have the responsibility to insure that their respective departments are complying with this program. They will insure that training, implementation, audits, and program evaluations are performed and the results are forwarded to the appropriate personnel as designated by the Assistant Director of Village Services and Utilities Superintendent.
- B.** The program evaluation will be conducted to ensure that the procedures and requirements of the program are being followed and will be utilized to correct any deviations or inadequacies that may be discovered. The evaluation will consist of one or more inspections or audits of actual lockout/tagout procedures being used to isolate equipment. Audits will be completed as determined appropriate by the Assistant Director of Village Services and Utilities Superintendent and/or after the any modification to applicable equipment or installation of new equipment covered under this program. A review of the authorized and affected employees responsibilities will be conducted at the time of the inspection/audit. The inspection/audit may be performed by any authorized employee, except the one(s) utilizing the energy isolation procedure being inspected.
- C.** A record will be maintained of program evaluation inspections and will include, at minimum:
 - 1. The identity of the equipment or machine on which energy control procedures were being utilized
 - 2. The date(s) of the inspection(s)
 - 3. The employee(s) included in the inspection(s)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

4. The person performing the inspection.

- D. Authorized employees (persons who implement lockout/tagout procedures) will be responsible for following the procedures established by this program (see Attachment B to this Program).

- E. Affected employees are responsible for understanding the significance of a lockout/tagout device and the prohibition relating to attempts to restart or re-energize equipment or machinery that is locked out or tagged out

VI. TRAINING

- A. Employees will be provided instruction in the purpose and function of the energy control program to ensure that they understand the significance of locked or tagged out equipment and also have the knowledge and skill to correctly apply and remove energy controls. Training will be divided into two categories: ~~%~~Affected Employees+ and ~~%~~Authorized Employees.+

- B. **Affected Employees:**
 1. Affected employees will be made aware of the purpose and use of energy control procedures and the prohibition relating to attempts to remove lockout or tagout devices, or operate locked out or tagged out equipment.
 2. Initial training will be provided to all new employees during their introductory period or when reassigned to a job that requires lockout/tagout training.
 3. Retraining will be conducted whenever there is a change in equipment that presents a new hazard, a change in the energy control procedures or when the program evaluation identifies inadequacies in the energy control program procedures.

- C. **Authorized Employees**
 1. Authorized employees will be made aware of the purpose, the recognition of applicable hazardous energy source(s), the type and magnitude of energy available, and the policies and procedures of the energy control program.
 2. Instruction in the limitations of tagout as a sole means of energy control.
 - a. Tags are warning devices and do not provide the physical restraint that a lock would.
 - b. Tags may provide a false sense of security.
 - c. Tags may become detached during use. Initial training will be provided during energy control program implementation.
 - d. Each Supervisor will receive initial training and will be provided with materials to train designated employees in their respective divisions, and provide training when new employees are hired. Training will be provided to employees who change status from an affected employee to an authorized employee.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

3. Retraining will be conducted whenever there is a change in job assignments that requires the employee to utilize energy control procedures, a change in equipment that presents a new hazard, a change in the energy control procedures or when the program evaluation identifies inadequacies in the energy control program procedures.
4. Initial training of a new employee will be conducted during the first sixty (60) days of employment and must be completed prior to an employee being allowed to work independently without direct and continuous supervision.

B. Training Records

Records of employee training will be maintained and will include the employee's name and date(s) of training (see **Attachment D**). All training records will be maintained with appropriate copies distributed to the Assistant Director of Village Services, Plant Chemist, Superintendent, Supervisor, Division copy.

VII. STANDARD OPERATING PROCEDURES

A. General

The Village of Bloomingdale will provide the necessary devices to effectively lockout or tagout energy isolating devices. Lockout/tagout devices will be the only devices used for controlling energy and shall not be used for other purposes. Any devices used for lockout/tagout will be capable of withstanding the environment to which they are exposed for the maximum period they are expected to be exposed. The devices will be substantial enough to prevent removal without excessive force. Excessive force for a locking device would be bolt cutters or other metal cutting tools. Tagout devices will be attached by a non-reusable method, attachable by hand, and very difficult to remove by hand. A nylon cable tie or equivalent will be used.

Lockout/tagout devices will indicate the identity of the employee who applied the device, the date applied, and the tagout device will warn against the hazards if the equipment is energized.

Lockout is the preferred method of energy isolation. When physical lockout is not possible, the energy isolation device will be tagged out of service with a warning tag attached at the power source. In the case of plug-in power source, the tag or a plug lock-out device will be attached at the Plug. To ensure full employee protection using tagout instead of lockout, additional steps should be taken to guard against accidental or inadvertent energization. These steps may include, where applicable: removal of fuses, blocking of switches, and removal of a valve handle.

Each Village Services Division (Division), which has equipment requiring lockout/tagout procedures, shall ensure the information is included in the Lockout/tagout database. New equipment and/or changes in the lockout/tagout procedures will require completing Appendices E and F of the Lockout/Tagout Policy and ensure that a copy is forwarded to the Superintendent or designated representative.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

B. Application of Controls

1. Preparing to Shut Down Equipment
 - a. Prior to equipment shutdown, the authorized employee(s) must have knowledge of:
 - i. The type(s) and magnitude of power
 - ii. The hazards of the energy to be controlled.
 - iii. The method(s) to control the energy.
 - iv. The location and identity of all isolating devices that control or feed the equipment to be locked/tagged out.
 - v. Notify all affected employees that the lockout/tagout system will be in effect. When shutting down equipment which will affect other personnel, insure that these personnel or areas are notified and signs or warnings are posted as necessary.
 - vi. Assemble applicable lockout/tagout devices . padlocks, tags, multiple lock hasps, etc.
2. Equipment Shutdown and Isolation
 - a. If equipment is in operation, shut it down by the normal stopping procedure (stop button, switch).
 - b. Operate disconnects, switches, valves, or other energy isolating devices so that the equipment is de-energized and isolated from its energy source(s).
 - c. Verify that equipment is shut down by operating equipment from the normal operating location and any remote locations.
3. Installation of Lockout/Tagout Device, Release of Stored Energy, and Verification
 - a. Attach individually assigned lock(s) or tag(s) to energy isolating device(s). Where it is not possible to lock a switch, valve, or other isolating device, electrical fuses must be removed, blank flanges installed in piping, lines disconnected, or other suitable methods used to ensure that equipment is isolated from energy sources. A tag must be installed at the point of power interruption to warn against energizing.
 - i. Each lock or tag must positively identify the person who applied it and locks must be individually keyed.
 - ii. If more than one person is involved in the task, each employee will place their own lock and tag. Multiple lock hasps are available for this.
 - b. Release, restrain, or dissipate stored energy such as spring tension, elevated machine members, rotating flywheels, hydraulic pressure, pistons and air, gas, steam, water pressure, etc. by repositioning, blocking, bleeding, or other suitable means.
 - c. Prior to starting work on equipment and after ensuring that no personnel are exposed, the authorized employee will verify that isolation and de-energization have been accomplished by:

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

- i. Attempting, through normal effort, to operate energy isolating devices such as switches, valves, or circuit breakers with locks or tags installed.
 - ii. Attempting to operate the equipment or machinery that is locked or tagged out. This includes all sources of energy . electrical, hydraulic, gravity, air, water, steam pressure, etc.
 - iii. Verifying the presence and effectiveness of restraints (blocking) and energy dissipation or release (bleeding).
- d. If there is a possibility of the re-accumulation of stored energy to a hazardous level, verification of isolation will be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.
4. Group Lockout/Tagout
- a. When more than one individual is involved in locking or tagging equipment out of operation, each individual will attach their individual lock or tag, or the equivalent, to the energy isolating device(s).
 - i. An equivalent lockout device may be in the form of a group lockout device such as a multiple lock hasp or lock box.
 - ii. Primary responsibility for a group of authorized employees working under a group lockout device will be vested in a designated authorized employee.
 - iii. Group lockout methods will provide a level of protection equal to that afforded by a personal lockout/tagout device.

C. Returning Equipment to Service

- 1. Restore Equipment to Normal Operating Status
 - a. Re-install all parts or subassemblies removed for servicing or maintenance.
 - b. Re-install all tools, rests, or other operating devices.
 - c. Re-install all guards and protective devices (i.e., limit switches).
 - d. Remove all blocks, wedges, or other restraints from the operating area of the equipment (ways, slides, etc.).
 - e. Remove all tools, equipment, and shop towels from the operating area of the equipment.
- 2. Verify Equipment Ready for Operation
 - a. Inspect area for non-essential items.
 - b. Ensure that all employees are safely positioned clear of the operating areas of the equipment. Post a watch if energy isolation devices are not in line of sight of the equipment.
- 3. Notify Affected Employees of Impending Start-up

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

- a. The sudden noise of start-up may startle nearby employees.
 - b. Equipment may need to be tested to determine operational safety by a qualified operator.
4. Remove Energy Isolation Devices: (Only by authorized employee(s) who installed it/them.)
- a. Remove line blanks, reconnect piping (if applicable), and remove warning tag.
 - b. Close bleeder valves, remove warning tag.
 - c. Replace fuse(s), close circuit breaker(s), and remove warning tag.
 - d. Remove lock and tag from control panel, valve, etc.
 - e. Exception to removal of lockout/tagout devices by employee who installed it.
5. If it is necessary to operate a piece of equipment which is locked/tagged out, every effort must be made to locate the employee whose lock or tag is on the equipment. If he or she cannot be located and only after positive assurance is made that no one is working on the locked out equipment, the supervisor, with the express permission of the appropriate Superintendent, may personally remove the lock.
6. If a lock is removed during the absence of the employee who installed it, positive stops must be put in place. The stop/s must ensure that the employee will meet with supervision for an explanation of what has transpired in his/her absence. One method would be to use a form note, which states ~~to~~ see the supervisor prior to returning to work.+
7. Employees will recheck locked out equipment if they have left the equipment (breaks, lunch, and end of shift) to make sure it is still de-energized and locked out.

D. Temporary Removal of Lockout/Tagout Protection

1. In situations when the equipment must be temporarily energized to test or position the equipment or its components, the following steps will be followed:
 - a. Clear the equipment of tools and materials that are non-essential to the operation.
 - b. Ensure the equipment components are operationally intact.
 - c. Remove employees from the equipment area.
 - d. Remove the lockout/tagout devices by the employee who installed it/them.
 - e. Energize and proceed with testing or positioning.
 - f. De-energize all systems and re-install all energy control measures.
 - g. Verify re-installed energy control measures are effective.

E. Shift or Personnel Changes

1. The following steps will be followed to ensure continuity of employee protection during personnel changes.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

- a. All personnel involved in the maintenance or servicing activity will be notified that a transfer of personal locks/tags is about to occur.
- b. Clear all personnel from hazardous area(s) of equipment.
- c. Under the supervision of the division supervisor or designee, the off-going employee will remove his/her lock and tag and the on-going employee will immediately install his/her lock and tag.
 - i. If an entire group or more than one employee will be transferring work responsibility, locks/tags will be removed and replaced one at a time in order of installation. All employees must be present during this exchange.
- d. When the transfer of lockout/tagout devices is complete, the effectiveness of all energy isolation devices will be verified to the satisfaction of all personnel involved.
- e. Once the effectiveness of energy isolation protection is confirmed, the service/maintenance operation may continue.

E. Contractor Notification

1. Whenever outside personnel may be engaged in activities covered by this program, the Department administering the contract will inform the contractor of applicable lockout/tagout procedures used to protect Village of Bloomingdale employees from the hazards of working near energized equipment.
 - a. The contractor will be expected to ensure that his/her employees understand and comply with the restrictions and prohibitions of this program.
 - b. Requires, under these circumstances, the contractor to inform us of their lockout/tagout procedures so that Village of Bloomingdale employees can comply with the restrictions and prohibitions of the contractor's program.
 - c. Also requires the contractor to notify the Public Works Superintendent/Utilities Superintendent or designee, and affected employees prior to de-energizing, isolating, and locking out equipment. Conversely, notification is also required when this equipment will be returned to service.

VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM

ATTACHMENT A - AUDIT FORM

DATE OF INSPECTION: _____

NAME OF EMPLOYEE(S): _____

DEPARTMENT/DIVISION: _____

EQUIPMENT AND/OR MATERIAL(S) ON WHICH ENERGY CONTROL MEASURES BEING UTILIZED:

_____	_____
_____	_____
_____	_____

COMMENTS: _____

NAME OF INSPECTOR/AUDITOR: _____

TITLE OF INSPECTOR/AUDITOR: _____

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

ATTACHMENT B - AUTHORIZED EMPLOYEES

NAME (Optional)	JOB TITLE/POSITION	DEPARTMENT/DIVISION
Calvin Boyd	Crew Leader/Buildings Grounds	PW . Buildings & Grounds
Kelly Cusack	Maintenance II Worker	PW . Buildings & Grounds
Rich Meyer	Bldg & Grounds/ Vehicle Maintenance Supervisor	PW . Buildings & Grounds
James Monkemeyer	Asst Dir of Village Services	Public Works
Robert Maguire	Utilities Superintendent	Utilities
Kevin ODea	Water Production Supervisor	UT . Water Production
Pat Maranto	Water Systems Operator	UT . Water Production
John Thorpe	Maintenance II Worker	UT . Water Production
Vacant	Maintenance II Worker	UT . Water Production
Juana Stoiser	Plant Operator I	UT . Water Reclamation
Shirley Burger	Water Rec Supervisor	UT . Water Reclamation
Grant Sharp	Plant Chemist	UT . Water Reclamation
Kurt Domianus	Plant Operator II	UT . Water Reclamation
Tim Heffron	Plant Operator I	UT . Water Reclamation
Juan Arce	Plant Mechanic II	UT . Water Reclamation
Mike Young	Plant Mechanic I	UT . Water Reclamation
Anthony Coronato	Plant Mechanic I	UT . Water Reclamation
Joe Witczak	Maintenance I Worker	UT . Water Reclamation
Vern Fasse	Water Distribution Supervisor	UT . Distribution
Rob Blum	Crew Leader	UT - Distribution
Robert Jensen	Crew Leader	UT . Distribution
Ed Lewen	Streets Supervisor	PW - Streets
Paul Dublin	Crew Leader	PW . Streets

VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM

ATTACHMENT D
TRAINING CERTIFICATION RECORD

_____ has been trained to
(Employee Name/Title) (Print)

recognize the type and magnitude of hazardous energy sources
encountered in the _____.
(Department/Division and/or Member Name)

Additionally, all applicable methods and means for energy
isolation and control have been instructed/reviewed on _____.
(Date)

Instructor's Signature Title Date

Employee's Signature Date

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

**ATTACHMENT F
ADDITIONAL MEASURES**

EQUIPMENT/LOCATION

ENERGY SOURCES/LOCATION

ADDITIONAL MEASURES THAT WILL BE IMPLEMENTED TO ENSURE A LEVEL OF SAFETY EQUIVALENT TO A LOCK:

EQUIPMENT/LOCATION

ENERGY SOURCES/LOCATION

ADDITIONAL MEASURES THAT WILL BE IMPLEMENTED TO ENSURE A LEVEL OF SAFETY EQUIVALENT TO A LOCK:

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

**ATTACHMENT G
OSHA REGULATION 29 CFR 1910.147**

Scope, application and purpose -

1910.147(a) (1)

Scope

1910.147(a)(1)(i)

This standard covers the servicing and maintenance of machines and equipment in which the **unexpected** energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. This standard establishes minimum performance requirements for the control of such hazardous energy.

1910.147(a)(1)(ii)

This standard does not cover the following:

1910.147(a)(1)(ii)(A)

Construction, agriculture and maritime employment;

1910.147(a)(1)(ii)(B)

Installations under the exclusive control of electric utilities for the purpose of power generation, transmission and distribution, including related equipment for communication or metering; and

1910.147(a)(1)(ii)(C)

Exposure to electrical hazards from work on, near, or with conductors or equipment in electric utilization installations, which is covered by Subpart S of this part; and

..1910.147(a)(1)(ii)(D)

1910.147(a)(1)(ii)(D)

Oil and gas well drilling and servicing.

1910.147(a)(2)

Application.

1910.147(a)(2)(i)

This standard applies to the control of energy during servicing and/or maintenance of machines and equipment.

1910.147(a)(2)(ii)

Normal production operations are not covered by this standard (See Subpart O of this Part).

Servicing and/or maintenance which takes place during normal production operations is covered by this standard only if:

1910.147(a)(2)(ii)(A)

An employee is required to remove or bypass a guard or other safety device; or

1910.147(a)(2)(ii)(B)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Note: **Exception to paragraph (a)(2)(ii):** Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection (See Subpart O of this Part).

1910.147(a)(2)(iii)

This standard does not apply to the following:

..1910.147(a)(2)(iii)(A)

1910.147(a)(2)(iii)(A)

Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

1910.147(a)(2)(iii)(B)

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-

1910.147(a)(2)(iii)(B)(1)

continuity of service is essential;

1910.147(a)(2)(iii)(B)(2)

shutdown of the system is impractical; and

1910.147(a)(2)(iii)(B)(3)

documented procedures are followed, and special equipment is used which will provide proven effective protection for employees.

1910.147(a)(3)

Purpose.

1910.147(a)(3)(i)

This section requires employers to establish a program and utilize procedures for affixing appropriate lockout devices or tagout 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.

1910.147(a)(3)(ii)

When other standards in this part require the use of lockout or tagout, they shall be used and supplemented by the procedural and training requirements of this section.

1910.147(b)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Definitions applicable to this section.

Affected employee. An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

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 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.

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

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.

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

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. 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 and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

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

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

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, where 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 to perform 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. 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, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

..1910.147(c)

1910.147(c)

General -

1910.147(c)(1)

Energy control program. The employer shall establish a program consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

1910.147(c)(2)

Lockout/tagout.

1910.147(c)(2)(i)

If an energy isolating device is not capable of being locked out, the employer's energy control program under paragraph (c)(1) of this section shall utilize a tagout system.

1910.147(c)(2)(ii)

If an energy isolating device is capable of being locked out, the employer's energy control program under paragraph (c)(1) of this section shall utilize lockout, unless the employer can demonstrate that the utilization of a tagout system will provide full employee protection as set forth in paragraph (c)(3) of this section.

1910.147(c)(2)(iii)

After January 2, 1990, whenever replacement or major repair, renovation or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machine or equipment shall be designed to accept a lockout device.

1910.147(c)(3)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Full employee protection.

1910.147(c)(3)(i)

When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program.

..1910.147(c)(3)(ii)

1910.147(c)(3)(ii)

In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety obtained by using a lockout program, the employer shall demonstrate full compliance with all tagout-related provisions of this standard together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection shall include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

1910.147(c)(4)

Energy control procedure.

1910.147(c)(4)(i)

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.

Note: **Exception:** The employer need not document the required procedure for a particular machine or equipment, when all of the following elements exist: (1) The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shut down which could endanger employees; (2) the machine or equipment has a single energy source which can be readily identified and isolated; (3) the isolation and locking out of that energy source will completely deenergize and deactivate the machine or equipment; (4) the machine or equipment is isolated from that energy source and locked out during servicing or maintenance; (5) a single lockout device will achieve a locker-out condition; (6) the lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance; (7) the servicing or maintenance does not create hazards for other employees; and (8) the employer, in utilizing this exception, has had no accidents involving the unexpected activation or reenergization of the machine or equipment during servicing or maintenance.

1910.147(c)(4)(ii)

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:

1910.147(c)(4)(ii)(A)

A specific statement of the intended use of the procedure;

1910.147(c)(4)(ii)(B)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;

1910.147(c)(4)(ii)(C)

Specific procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them; and

..1910.147(c)(4)(ii)(D)

1910.147(c)(4)(ii)(D)

Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

1910.147(c)(5)

Protective materials and hardware.

1910.147(c)(5)(i)

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

1910.147(c)(5)(ii)

Lockout devices and tagout devices shall be singularly identified; shall be the only devices(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

1910.147(c)(5)(ii)(A)

Durable.

1910.147(c)(5)(ii)(A)(1)

Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

1910.147(c)(5)(ii)(A)(2)

Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

1910.147(c)(5)(ii)(A)(3)

Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

..1910.147(c)(5)(ii)(B)

1910.147(c)(5)(ii)(B)

Standardized. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

1910.147(c)(5)(ii)(C)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Substantial -

1910.147(c)(5)(ii)(C)(1)

Lockout devices. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

1910.147(c)(5)(ii)(C)(2)

Tagout devices. Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all environment-tolerant nylon cable tie.

1910.147(c)(5)(ii)(D)

Identifiable. Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

1910.147(c)(5)(iii)

Tagout devices shall warn against hazardous conditions if the machine or equipment is energized and shall include a legend such as the following: **Do Not Start. Do Not Open. Do Not Close. Do Not Energize. Do Not Operate.**

..1910.147(c)(6)

1910.147(c)(6)

Periodic inspection.

1910.147(c)(6)(i)

The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed.

1910.147(c)(6)(i)(A)

The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure being inspected.

1910.147(c)(6)(i)(B)

The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

1910.147(c)(6)(i)(C)

Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

1910.147(c)(6)(i)(D)

Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in paragraph (c)(7)(ii) of this section.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

..1910.147(c)(6)(ii)

1910.147(c)(6)(ii)

The employer shall 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.

1910.147(c)(7)

Training and communication.

1910.147(c)(7)(i)

The employer shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

1910.147(c)(7)(i)(A)

Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

1910.147(c)(7)(i)(B)

Each affected employee shall be instructed in the purpose and use of the energy control procedure.

1910.147(c)(7)(i)(C)

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 reenergize machines or equipment which are locked out or tagged out.

1910.147(c)(7)(ii)

When tagout systems are used, employees shall also be trained in the following limitations of tags:

..1910.147(c)(7)(ii)(A)

1910.147(c)(7)(ii)(A)

Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

1910.147(c)(7)(ii)(B)

When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

1910.147(c)(7)(ii)(C)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.

1910.147(c)(7)(ii)(D)

Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

1910.147(c)(7)(ii)(E)

Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

1910.147(c)(7)(ii)(F)

Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

1910.147(c)(7)(iii)

Employee retraining.

..1910.147(c)(7)(iii)(A)

1910.147(c)(7)(iii)(A)

Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

1910.147(c)(7)(iii)(B)

Additional retraining shall also be conducted whenever a periodic inspection under paragraph (c)(6) of this section 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 procedures.

1910.147(c)(7)(iii)(C)

The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

1910.147(c)(7)(iv)

The employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

1910.147(c)(8)

Energy isolation. Lockout or tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

1910.147(c)(9)

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

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

..1910.147(d)

1910.147(d)

Application of control. The established procedures for the application of energy control (the lockout or tagout procedures) shall cover the following elements and actions and shall be done in the following sequence:

1910.147(d)(1)

Preparation for shutdown. Before an authorized or affected employee turns off a machine or equipment, the authorized employee 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.

1910.147(d)(2)

Machine or equipment shutdown. The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

1910.147(d)(3)

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).

1910.147(d)(4)

Lockout or tagout device application.

1910.147(d)(4)(i)

Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.

..1910.147(d)(4)(ii)

1910.147(d)(4)(ii)

Lockout devices, where used, shall be affixed in a manner to that will hold the energy isolating devices in a "safe" or "off" position.

1910.147(d)(4)(iii)

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.

1910.147(d)(4)(iii)(A)

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

1910.147(d)(4)(iii)(B)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

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.

1910.147(d)(5)

Stored energy.

1910.147(d)(5)(i)

Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

..1910.147(d)(5)(ii)

1910.147(d)(5)(ii)

If there is a possibility of reaccumulation 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.

1910.147(d)(6)

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 deenergization of the machine or equipment have been accomplished.

1910.147(e)

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:

1910.147(e)(1)

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

1910.147(e)(2)

Employees.

1910.147(e)(2)(i)

The work area shall be checked to ensure that all employees have been safely positioned or removed.

1910.147(e)(2)(ii)

After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout device(s) have been removed.

1910.147(e)(3)

Lockout or tagout devices removal. Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device. **Exception to paragraph (e)(3):** When the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of the employer, provided that

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

specific procedures and training for such removal have been developed, documented and incorporated into the employer's energy control program. The employer shall demonstrate that the specific procedure provides equivalent safety to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

1910.147(e)(3)(i)

Verification by the employer that the authorized employee who applied the device is not at the facility;

1910.147(e)(3)(ii)

Making all reasonable efforts to contact the authorized employee to inform him/her that his/her lockout or tagout device has been removed; and

1910.147(e)(3)(iii)

Ensuring that the authorized employee has this knowledge before he/she resumes work at that facility.

..1910.147(f)

1910.147(f)

Additional requirements.

1910.147(f)(1)

Testing or positioning of machines, equipment or components thereof. In situations in which lockout or tagout devices must be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions shall be followed:

1910.147(f)(1)(i)

Clear the machine or equipment of tools and materials in accordance with paragraph (e)(1) of this section;

1910.147(f)(1)(ii)

Remove employees from the machine or equipment area in accordance with paragraph (e)(2) of this section;

1910.147(f)(1)(iii)

Remove the lockout or tagout devices as specified in paragraph (e)(3) of this section;

1910.147(f)(1)(iv)

Energize and proceed with testing or positioning;

1910.147(f)(1)(v)

Deenergize all systems and reapply energy control measures in accordance with paragraph (d) of this section to continue the servicing and/or maintenance.

1910.147(f)(2)

Outside personnel (contractors, etc.).

1910.147(f)(2)(i)

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the on-site employer and the outside employer shall inform each other of their respective lockout or tagout procedures.

..1910.147(f)(2)(ii)

1910.147(f)(2)(ii)

The on-site employer shall ensure that his/her employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

1910.147(f)(3)

Group lockout or tagout.

1910.147(f)(3)(i)

When servicing and/or maintenance is performed by a crew, craft, department or other group, 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.

1910.147(f)(3)(ii)

Group lockout or tagout devices shall be used in accordance with the procedures required by paragraph (c)(4) of this section including, but not necessarily limited to, the following specific requirements:

1910.147(f)(3)(ii)(A)

Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

1910.147(f)(3)(ii)(B)

Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment and

1910.147(f)(3)(ii)(C)

When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and

..1910.147(f)(3)(ii)(D)

1910.147(f)(3)(ii)(D)

Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

1910.147(f)(4)

Shift or personnel changes. Specific procedures shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including 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.

**VILLAGE SERVICES DEPARTMENT
LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM**

Note: The following appendix to §1910.147 serves as a non-mandatory guideline to assist employers and employees in complying with the requirements of this section, as well as to provide other helpful information. Nothing in the Attachment Adds to or detracts from any of the requirements of this section.