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# **Section I Purpose Of The Plan**

Whenever servicing, maintenance, or modification is being performed on equipment, there is always the potential for the unexpected energization or start-up of the equipment, or the release of stored energy. This presents the very real hazard of injury to employees and/or damage to equipment.

In recognition of this hazard, the Occupational Safety and Health Administration (OSHA) has implemented a regulation [Lockout/Tagout (LOTO) 29 Code of Federal Regulations (CFR) 1910.147] to help protect workers from this hazard.

Hilscher-Clarke has implemented this Hazardous Energy Control Plan to meet the letter and intent of the OSHA Lockout/Tagout Standard. Our basis for this plan is as follows:

Any and all employees, in order to protect against accidental or inadvertent operation, when such operation could cause injury to personnel, must apply Lockout/Tagout (LOTO) whenever they are...

- ❑ Servicing;
- ❑ Maintaining;
- ❑ Modifying; or
- ❑ Installing

...machinery or equipment, regardless of the duration of the job or the employee(s) proximity to the energy isolating device (i.e., circuit breaker, switch, or valve.)

This program establishes Hilscher-Clarke's site minimum safety requirements for locking/tagging out equipment as well as establishing the "**Authorized Worker(s)**" performance requirements for Lockout/Tagout, and makes the application of Lockout/Tagout consistent across Hilscher-Clarke's work site(s) and permanent facilities.

All "**Authorized Workers**" will perform Lockout/Tagout the same way, using a graded approach. To use a graded approach Hilscher-Clarke takes into account such factors as:

- ❑ The complexity of the work;
- ❑ The complexity of the systems;
- ❑ The level of risk
- ❑ The number and type of energy sources;
- ❑ The number of authorized workers;
- ❑ The duration of the work project.

All these factors will be considered by the "**Authorized Worker(s)**" before the application of this program.

Hilscher-Clarke is committed to providing a safe and healthful work environment for our entire staff. In pursuit of this endeavor, the following Hazardous Energy Control Plan is provided to implement both the appropriate energy control and worker protection requirements.

This all-inclusive program applies to personnel employed by Hilscher-Clarke Electric and to all contractors and subcontractors working at any and all construction sites operated by Hilscher-Clarke

This program protects workers against the unexpected release of all sources of hazardous energy or materials. Examples include electrical, mechanical, hydraulic, pneumatic, chemical, thermal energies as well as various forms of potential energy, such as that stored in springs, compressed gasses, or in suspended objects (gravitational.)

However, Hilscher-Clarke has investigated and designated that Lockout/Tagout (LOTO) does not apply under the following conditions:

- ❑ Work on cord and plug electric equipment where exposure to the hazards of unexpected energization or start up of the equipment is controlled by unplugging the equipment from the energy source and keeping the plug under the exclusive control (within arm's reach and line of sight) of the employee performing the servicing, maintenance, or modification.
- ❑ Operations on energized equipment (i.e., calibration), where continuity of service is essential or shutdown of the system is impractical. Documented safety procedures that provide an equivalent level of safety will be established by the Safety Manager, who will also train and notify any and all "Affected Employees". Likewise the Safety Manger will oversee the purchasing, and related training, of any and all Special Safety Equipment that may be required in this situation.
- ❑ Routine operations (i.e., minor tool changes, adjustments, and other minor servicing taking place during normal production operations) provided the operation is repetitive and integral to the use of the equipment. The work must be performed using alternative measures that provide effective protection. The Safety Manager and/or Supervisor will establish and train any and all Affected Employees in the established alternative method of protection.  
**NOTE: *If, during routine operation(s), a guard or other safety device is removed or bypassed, or an employee is required to place any body part into an area of a machine or piece of equipment where work is actually performed upon the material being processed (point of operation), this exclusion does not apply and LOTO must be performed.***
- ❑ Locks and/or tags covered under the control of other programs, such as permanently deactivated systems during dismantling activities.

## **Section II Lockout/Tagout Definitions**

## Definitions

In an effort to maintain consistency in the interpretation and meaning of various terms and titles, Hilscher-Clarke has established the following definitions that will apply to this plan. These terms and definitions will be used by all personnel employed by Hilscher-Clarke, and by all contractors and subcontractors working at Hilscher-Clarke's work sites or in facilities operated by Hilscher-Clarke Site Contractors.

**Administrative Lockout** – Locks that are applied to equipment control circuits or energy isolating devices for the purpose of preventing operation by unauthorized personnel. Padlocks used for administrative purposes must be accompanied by a control tag which states “Caution, Operation Of This Equipment by Authorized Personnel Only” or “Out of Service”. Administrative Lockout shall never be used for isolation of an energy source.

**Administrative Tagout** – The placement of “Out of Service” or “Authorized Personnel Only” control tags to inform personnel that operating restrictions have been placed on a piece of equipment. Administrative Tagout can be applied without Administrative Lockout. Administrative Tagout shall never be used for isolation of an energy source.

**Affected Employee/Worker** – A person whose job requires him or her to be in an area where equipment or system(s) have been de-energized under the LOTO program. The Affected Worker *cannot* perform work under Lockout/Tagout.

**Authorized Employee/Worker** – A person who locks out and tags out machines, equipment, or systems to perform servicing or maintenance on that machine or equipment. This person must have completed the mandatory training to be qualified as an authorized worker. Only an Authorized Worker installs and removes his or her own lock(s) and “danger tag(s)” as required by this program.

**Boundary** – The safe limits of a given lockout/tagout as determined by those components that are configured to provide a safe condition where the work is to be performed.

**Control Circuit** – A circuit that contains switching devices that control the activation and/or specific operations of a piece of equipment. Control circuits are poor locations to apply lockout devices since they do not necessarily disconnect input power.

**Controlling Organization** – The organization or individual(s) responsible for the operation of a building, utility, facility, system, or equipment associated with the work to be performed.

**Disconnect Switch** – A lockable electrical switch that physically disconnects equipment from its input electrical power source.

**(Energy) Isolating Device** – A mechanical device that prevents the transmission or release of hazardous energy or hazardous materials. Examples include restraint blocks, electrical circuit breakers, disconnect switches, slide gates, slip blinds, or line valves. This term does not usually include push button or other control circuit-type devices. For lockout/tagout purposes, isolating devices that provide visible indication of the device's position are desirable.

**Energy Sources** – Are divided into two categories, for the purposes of this plan:

- **External Energy Sources** – Energy sources which are external to equipment such as electrical, hydraulic, pneumatic, gas, vacuum, high temperature, cryogenic temperature, mechanical, etc. that could cause harm to personnel or equipment.
- **Internal Energy Sources** – Energy sources such as capacitors, accumulators, air surge tanks, batteries, hydraulic line pressures, wound springs, etc. which are internal and could potentially be released and cause injury after all external energy sources have been disconnected and secured.

**Lockbox** – A device in which the key(s) for the energy control boundary lock(s) are stored and which is capable of being locked.

**Lock(s)** – A device that requires a key to operate (not a combination lock) and holds an isolating device in the required position for the protection of personnel. The lock(s) used for control of hazardous energy are to be singularly identified by either color, shape, or size. These lock(s) shall be the only device used for controlling hazardous energy and shall not be used for other purposes.

**Lockout** – The placement of a locking device, such as a padlock, on an energy isolating device, thereby preventing the energy isolating device and the equipment being controlled from being operated until the lockout device is removed. Lockout must always be accompanied by tagout.

**LOTO** – An acronym for Lockout/Tagout.

**Overlock/Overtag** – Lock(s) and danger tag(s) installed by an Authorized Worker on top of the controlling organization's Danger-Do Not Operate Tag(s).

**Safe Condition Check** – The inspection or test of a system or component performed by the controlling organization to ensure that the hazardous energy or materials are controlled adequately to prevent injury or accident.

NOTE: This is an essential step to ensure safety for personnel.

**Tag** – A “Danger Tag” or a “Danger – Do Not Operate Tag” and a means of attachment, which can be securely fastened to an energy isolating device in accordance with this program, to indicate that the energy isolating device and the equipment being controlled can not be operated until the tag is removed.

**Tagout** – The placement of “Danger Do Not Operate” tags on an energy isolating device to inform personnel that the energy isolating device and the equipment being controlled **MUST NOT** be operated. Tagout must always accompany lockout, and may only be used alone if the energy-isolating device cannot physically be locked out and when alternative isolating procedures are used (i.e. removal of a circuit breaker or fuse).

**Zero Energy State** – A term that applies to equipment or systems status in which all hazardous energy sources have been disconnected and secured and all internal energy sources have been relieved or restrained in a safe manner.

# **Section III General Program Management**

- **The President:**
  - Is responsible for the control of this program and ensuring that all training meets the requirements of this program. The President will review and update the written Hazardous Energy Control Plan at least annually and whenever necessary to include new or modified tasks, procedures, equipment and tags.
  - The President may delegate the responsibility of various aspects of the Hazardous Energy Control Plan to a Qualified Organization. However, the President's ultimate responsibility for his/her aspects of the program cannot be delegated.
- **Safety Manager** is responsible for:
  - Questions on application of this program are to be directed to the Safety Manager.  
NOTE: For clarification purposes, all questions and/or requests must be submitted in writing; phone calls must be followed by written requests.
  - Will provide a verbal response to questions within one working day and a written response within 3 working days. The written response will be provided to every contractor and Sub-contractor's Safety Representative so that all parties are kept up to date; the contractor and subcontractor's Safety Representative will be the main method of getting information distributed.
  - Ensuring that LOTO supplies and equipment are available and consistent with Hilscher-Clarke's standards, as outlined in this policy and procedure.
  - Designing and implementing the Lockout/Tagout Training course.
  - Maintaining, administering, and suggesting revisions (of the Hazardous Energy Control Program to the President) as needed.
  - Determining the appropriate levels of training required for each employee.
  - Documentation of training.
  - Procuring, generating and/or maintaining equipment-specific written procedures where required (*See Equipment Specific Written Procedures Section 13.0*).
  - Assigning and documenting employee LOTO authorization, including:
    - Designating specific equipment or categories or equipment to be controlled;
    - Verifying that the employee is qualified to perform the necessary Energy-Control procedures.
  - The Safety Manager may delegate the responsibility of various aspects of the Hazardous Energy Control Plan to a Qualified Organization (as approved by the President). However, the Safety Manager's ultimate responsibility for his/her aspects of the program cannot be delegated.
- **Supervisory Personnel** are responsible for:
  - Prohibiting employees from working on equipment requiring LOTO until they are trained in and authorized to perform LOTO.
  - Removing LOTO devices in case of emergency and controlling emergency keys for all LOTO devices.
  - Ensuring that necessary, approved hardware is available.
  - The Supervisor may delegate the responsibility of various aspects of the Hazardous Energy Control Plan to a Qualified Organization, (as approved by the Safety Manager). However, the Supervisor's ultimate responsibility for his/her aspects of the program cannot be delegated.

- **Human Resources** is responsible for:
  - Documentation of Training and/or Retraining (*Appendix F*).
  - Making the written Hazardous Energy Control Plan available to employees, OSHA & NIOSH Representatives.
  
- **All Employees** are responsible for:
  - Becoming acquainted with all potential hazards in the area in which they work.
  - Only performing tasks for which they are qualified and authorized.
  - Requesting additional training to avoid working beyond their level of qualification or comfort.
  - Following applicable OSHA standards.
  - Learn and follow the appropriate standards, procedures, and hazard control methods.
  - Never undertaking a potentially hazardous operation without consulting with an appropriate Supervisor.
  - Notifying his/her Supervisors of any condition or behavior that poses a potential hazard.
  - Wearing and using appropriate ANSI approved PPE.
  
- **All Contractors and Subcontractors** working at any and all work sites operated by Hilscher-Clarke are required to comply with the procedures and work practices outlined in this Hazardous Energy Control Plan. The President is responsible for ensuring that said individuals/organizations, operating under the supervision of the Safety Manager and/or Supervisors, are informed of and adhere to Hilscher-Clarke's Hazardous Energy Control Program.

**Section IV**  
**Authorization**  
**Training & Retraining**

Hilscher-Clarke employees, who may be near to, or affected by, equipment on which LOTO is performed will receive LOTO awareness training. This training will include, but not be limited to:

- How to recognize LOTO;
- Why LOTO is implemented;
- The importance of leaving LOTO devices in place;
- Tampering with LOTO devices is considered by the Company to be a “Serious Safety Violation”;
- Attempting to restart equipment to which LOTO is applied is considered by the Company to be a “Serious Safety Violation”;
- General definitions (i.e., Affected Employee, Authorized Employee, etc...) as outlined in this plan.
- Only “Authorized Employees,” as outlined and defined in this plan, may perform LOTO.

Training will be provided to ensure that, the purpose and procedures of the Hazard Control Plan are understood by employees, and that the knowledge and skill required for the safe application, usage, and removal of lockout/tagout devices are conveyed to all employees. The training will include, but not be limited to the following:

- This plan’s specific *Scope, Purpose, Authorizations, Rules*;
  - Type and magnitude of the energy available at the work site;
  - Install and remove individually assigned lock(s) and danger tag(s) on the isolation device(s) for their safety in accordance with this program;
  - Methods and means necessary for energy isolation;
  - Safe Condition Checks;
  - Procedures for transfer of Lockout/Tagout (shift work & personnel changes);
  - Procedures for emergency/temporary lifting of tags;
  - Emergency and/or temporary removal of LOTO Devices
  - Use of different danger tags listed in Appendix A;
  - Use of Tagout only;
  - The procedure for authorized worker(s) that identifies the work scope, the hazards involved, the isolation methods, and other information specific to the task;
  - Lockbox Option(s)
  - Working on energized equipment;
  - LOTO vs. Administrative Locking;
  - Authorized LOTO equipment, its assignment and recordkeeping requirements;
  - Equipment-Specific Written Procedures;
  - Periodic inspection procedures.
  - Applicable OSHA Standards
- Hilscher-Clarke will prepare and maintain an Employee Education and Training Record (*see Appendix E*) upon completion of training and any retraining. These documents will include, but not be limited to;

## Training (cont.)

- Education & Training/Re-training Record (cont.):
  - Names or other identities of employees trained;
  - Signature of the person receiving the training;
  - Date of the training;
  - Date of Retraining;
  - Specific topics addressed during the training session;
  - Specific topic(s) addressed during the retraining session;
  - Signature of the person, or company, conducting the training;
  - Signature of the person, or company, conducting the retraining.

The original document will be kept with the employee's records at Hilscher-Clarke's main office and a copy of this training record may be kept in the "Safety File" at the work site, as appropriate.

- **Training for outside personnel** – Outside personnel will be trained as Hilscher-Clarke "Authorized Employee" or will be provided with Hilscher-Clarke Authorized Employee escort to assist in the correct placement of the outside service personnel's Lockout/Tagout devices.
- When interfacing with outside personnel, (i.e., vendors engaged in activities covered by this plan) the controlling organization and the outside employer must inform each other of their respective lockout/tagout procedures. The outside employer ensures that their personnel perform according to procedures outlined in this plan.

## Authorization

- Specific “Authorization” is provided by the Safety Manager, *after* the employee satisfies the training requirement(s). The Safety Manager must ensure that the employee is thoroughly familiar with the equipment (within the context of his or her job function) and with the energy-control procedures. A practical exercise may be required to demonstrate proficiency.
- Once satisfied that both the training and authorization requirements have been met, the Safety Manager may authorize an employee to perform LOTO. This authorization stipulates the specific equipment or types of equipment on which the “**Authorized Employee**” may perform LOTO.
- Retraining may be required for an employee to maintain their “Authorization” status. Retraining and reauthorization may be required when:
  - An Authorized Employee’s job changes or he or she is reassigned;
  - New equipment is to be used;
  - New energy-control procedures are to be implemented;
  - A Safety Manager or Supervisor has reason to believe that an employee has inadequate knowledge of LOTO procedures or policy;
  - A periodic inspection shows a deficiency in the Authorized Employee’s ability to implement LOTO policy correctly.

# **Section V Hazardous Energy Control Plan**

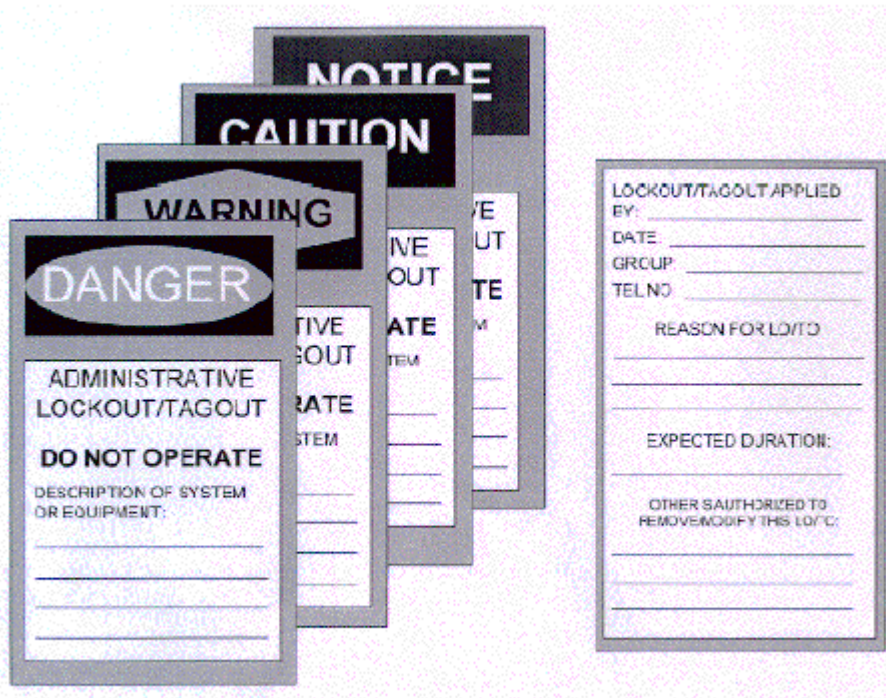
## 1.0 Basic Plan Principles

- 1.1 Each Authorized Worker installs his/her lock(s) and danger tag(s)** (*see appendix A*) during the Authorized Worker Lockout/Tagout process before starting work and removes them when leaving that work assignment. The personal “Lockout” and “Danger Tag” signifies that an Authorized Worker is working on a component.
- 1.2 The Authorized Worker’s “Danger Tag” is for the exclusive use of the Authorized Worker identified** (use permanent ink) on that Danger Tag.
- 1.3 No one shall authorize another person to ignore or violate this program.** No one shall operate any device on which a Lockout/Tagout device is installed.
- 1.4 No one shall remove a Lockout device when an unsafe condition exists** until that condition has been made safe or another Lockout device has been installed.
- 1.5 No Authorized Worker shall install a Lockout/Tagout on any system without notifying the controlling organization,** unless the work control system specifically addresses this issue. This is to ensure the controlling organization knows the status of its equipment/systems.
- 1.6 Only “Keyed Locks” are authorized for Lockout by Hilscher-Clarke Authorized Employees.**
- 1.7 The Authorized Worker maintains control of the key(s) for any lock(s) he/she applies.** If a back up key exists, it is locked in a safe location away from the work site and controlled by the Authorized Worker’s Supervisor to be used only in extreme circumstances.
- 1.8 Locks and tags can only be removed by the Authorized Worker who originally installed them.** When this Authorized Worker is not on site, the device(s) may be removed under the direction of the Authorized Worker’s management after all reasonable efforts to reach the worker have been taken. A “Notification of Lock Removal” form (*see Appendix B*) must be completed and given to the original Authorized Worker whenever this procedure is performed.

*NOTE: A phone conversation with the original Authorized Worker is considered adequate when documented. If contact with the original Authorized Worker was not possible, he/she must be informed of the Lockout/Tagout removal upon returning to work (see Appendix B).*
- 1.9 Each employer [contractor(s) and/or sub-contractor(s)] shall supply all locks and associated hardware to be used by their Authorized Workers at no cost to the Authorized Worker.** The locks may be issued on a permanent basis or on an as needed basis.
- 1.10 If an isolating device has the physical capability of being locked out, it shall be locked out and a danger tag installed with each lock.** If the isolating device cannot be physically locked out, it shall be tagged out.
  - 1.10.1** When a lock cannot be applied along with a danger tag, the tagout devices, including their means of attachment, must be durable and substantial enough to prevent inadvertent or accidental removal. Tagout attachment devices shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of not 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.
- 1.11 If an isolating device cannot be locked, then protective equivalent to that provided by locks must be established, and danger tag(s) used** to ensure the equivalent protection is maintained.
  - 1.11.1** Examples of measures that could be used to provide protection equivalent to locks and prevent a system from being energized include removing an isolating circuit element or fuse, blocking switch controls, opening extra circuit disconnects, and removing valve handles.

- 1.12 Install tags so that they do not interfere** with or obscure indications, switches, or other control devices.
- 1.13 Do not remove pieces of equipment with attached locks or tags from their installed location.** If a locked/tagged component must be removed (i.e., during demolition, replacement, or rework), then, reset or readjust the isolation boundaries so that any locks and tags may be properly cleared from the component that is to be removed.
- 1.14 When danger tag(s) used in a hazardous chemical control zone cannot be released, destroy or deface them** to prevent reuse and dispose of in accordance with appropriate disposal procedures.

- 2.1** Tags and locks used for administrative lockout/tagout shall be clearly distinguishable from those used for maintenance and service LOTO.
- 2.1.1** Locks shall be markedly different (i.e., different color, body style, etc.) from locks used for the control of hazardous energy.
- 2.1.2** Tags shall display the following information:
- The equipment or system(s) to be secured;
  - The date it was applied;
  - A briefly stated reason for its placement;
  - Who is authorized to remove the LOTO (in addition to the tagger); and
  - The name and phone number of the tagger.



Examples of administrative lockout/tagout tags

- 2.2** Whenever administrative LOTO is applied to an emergency control device (i.e., switch, valve, etc.) it shall be attached using a multi-lock hasp. This will allow other LOTO to be applied for personal protection during maintenance and service.
- 2.3 Duration of Administrative Lockout/Tagout** – Administrative LOTO often remains in place much longer than Hazardous Energy Control LOTO devices. There is no prescribed maximum duration for Administrative LOTO. If an employee applies Administrative LOTO, it is their responsibility to anticipate the inconvenience it may cause others affected by the equipment or system.
- Inform others of your action, give them your best estimate for the duration of disruption or unavailability, and keep them updated on progress.
  - Area Supervisory Personnel should always be notified of Administrative Lockout/Tagout actions in their area.
- 2.4 Emergency Removal of Administrative Lockout/Tagout** – Administrative LOTO may only be removed by someone other than the tagger (and others designated by the tagger on the tag), by following the procedures outlined in Section 7.0 (Emergency Removal of a LOTO Device).

- 3.1** The following steps are used to achieve Authorized Worker Lockout/Tagout. Hilscher-Clarke's Safety Manager (*Controlling Organization*) will decide and inform/instruct the Authorized Employee(s) of the method of application. The *Controlling Organization* will base their decision on the following factors:
- Complexity of the work;
  - Complexity of the system;
  - Number and types of energy sources;
  - Number of authorized workers;
  - Duration of the work project.
- 3.2** The Authorized Worker's "***lock and danger tag***" is to be applied in the following 3 ways:
- As an overlock/overtag of the Controlling Organization's Lockout/Tagout;
  - By itself, using the Lockout/Tagout procedure outlined in section 4.0 of this plan;
  - By itself, without a Lockout/Tagout procedure and ***only*** if it meets the following:
    - The machine or equipment has no potential for stored or residual energy or reaccumulation of stored energy after shutdown that could endanger employees. (*This must be confirmed by the controlling organization*).
    - The machine or equipment has a single energy source that can be readily identified and isolated.
    - The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
    - The machine or equipment is isolated from that energy source and locked out during servicing or maintenance.
    - A single lockout device will achieve a locked out condition.
    - The lockout device is under the exclusive control of the Authorized Employee performing the servicing or maintenance.
    - The servicing or maintenance does not create hazards for other employees. (*This must be confirmed by the controlling organization*)
- 3.3** As referenced in the above criteria, the Authorized Worker "lock(s) and danger tag(s)" (*see Appendix A*) signify that an Authorized Worker is working on a component or system. Lock(s) and "Danger Tag(s)" are installed by Authorized Worker prior to starting work and are removed by that Authorized Worker when he/she leaves that work assignment.

## 4.0 Authorized Worker Lockout/Tagout (LOTO) General Procedure

The LOTO General Procedure is divided into three sections **Application of Lock/Tag** (4.1 through 4.5.8), **Performing a Tagout Only** (4.6 through 4.6.3), and **Removal of a Lockout/Tagout Device** (4.7 through 4.7.6).

- 4.1** Notify equipment users of work. Before beginning work on any equipment or system, always notify equipment users and employees in the area that could be affected by the shutdown and the reason(s) for the shutdown. Whenever possible work should be scheduled and coordinated with other employees to minimize programmatic interruptions.
- 4.2** Verify that it is safe to shut equipment down and confirm the appropriate shutdown procedures for the equipment with the Affected Employee(s). The Authorized Employee must turn off or shut down the equipment using established methods for that equipment.
- 4.3** Use written procedure, if applicable. The Authorized Employee must determine if an Equipment-Specific Written Procedure is applicable to the task (the Safety Manager will present the Authorized Employee with any applicable material at the assignment of the task.) If the Authorized Employee feels that the current Equipment Specific Written Procedure is inadequate or needs to be updated and/or changed, he/she should contact the Safety Manager. The Safety Manager will then discuss and investigate the issues raised by the Authorized Employee. The Safety Manager will then, if applicable, re-issue the Equipment-Specific Written Procedure with approved changes and/or additions.
- 4.4** Identify all Internal and External Energy Sources. Many pieces of equipment have more than one energy source that must be controlled. Written Lockout/Tagout procedures are required for all equipment/systems that have more than one energy source. All external energy sources such as the input electrical supply, compressed air lines, water supplies, etc. must be addressed. In addition, internal energy sources such as charged capacitors, batteries, wound springs, etc. must be identified. Schematic diagrams and operator's manuals should be available and referenced for assistance in identifying input power requirements and internal energy sources. The specific LOTO procedure shall be referenced by the Authorized Employee.
- 4.5** Physically disconnect and isolate the energy source(s). Once all energy sources have been identified, the next step is:
  - 4.5.1** Physically disconnect and/or shut off the source(s) with appropriate energy-isolating-devices;
  - 4.5.2** Secure them in the off/disconnect position (*It may be necessary to leave bleed valves open to prevent the reaccumulation of stored energy. The written LOTO procedure must specify how this is accomplished.*)
  - 4.5.3** The Authorized Employee then affix's his/her LOTO lock to this device.
  - 4.5.4** Before applying a lockout device, be sure that the energy source(s) have been disconnected. The Authorized Employee must physically attempt to operate the energy-isolating device and attempt to restart the equipment using the normal equipment controls (i.e., start buttons, or computer software controls).

## 4.0 Authorized Worker Lockout/Tagout (LOTO) General Procedure

**4.5.5** Test the equipment for zero-energy state. The Authorized Employee must test potential energy sources using appropriate instruments or testers. Any instrument used to test for voltage, pressure, or temperature must be checked for proper operation both before and after use. If the Authorized Person is not qualified to test the energy being isolated, he or she must ensure that the energy is tested by a Qualified Person. The qualified tester, if other than the Authorized Employee, must be identified in the “Remarks” section on the tag.

**4.5.6** Lockout the Energy- Isolating Device. Each energy source must be locked out to prevent others from inadvertently reconnecting or re-energizing the equipment. Lockout devices must always be applied at the input power source and not at the control circuit. Remember that many pieces of equipment have more than one switch or switching method in which they can be turned on, thereby making control circuits poor places to apply lockout devices. Users with multiple locks shall record the details of each application (date, lock number, location, etc.) in their User Log (*see Appendix C*)

**4.5.7** Tagout the Energy-Isolating Device. A “Danger Do Not Operate” tag shall be installed at the energy-isolating device(s). The tag will be marked with the name and phone number of the person performing the Lockout/Tagout, the date, and other relevant information, and applied with a lock or plastic locking tie.

*NOTE: If the placement of the tag would compromise safety by obscuring indicator lights or controls, the tag may be located as close as is safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.*

**4.5.8** Perform final, and periodic verifications. Always perform a final verification before proceeding with work that is to be performed. Verification shall include:

- Check that all electrical systems show no voltage present (and are grounded if applicable.)
- Steam, fluid and pneumatic systems are depressurized and vented (or drained if applicable), and all isolation devices are properly positioned, inoperable and appropriately tagged. If the work will be performed for an extended time period, periodic verifications must be performed to ensure the integrity of the lockouts that have been applied.

**4.6 Performing a Tagout Only** If a device is incapable of being locked out, a “Tagout Only” procedure may be employed. Any energy-isolating device capable of being locked must be **locked without exception**. To conduct a tagout only procedure, follow the procedures outlined in the “Tagout Only” section of this policy and procedure.

**4.6.1** The placement of the lock in the sub-section of step 4.5.6 is omitted. Instead, the Authorized Employee must utilize a second means of isolating the hazardous energy. Removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnect device, or removal of a valve handle are all examples of secondary measures. The second means of isolation must be identified on the tag, and the tag must be affixed as in Section 4.5.7.

- 4.6.2** Extra caution must be exercised when using a Tagout Only Procedure. Tags may evoke a false sense of security. Tags are warning devices and do not provide the physical restraint provided by a lock.
- 4.6.3** Whenever possible, machinery or equipment not capable of being locked out shall be renovated or modified to accept a Lockout device.
- 4.7** ***Removal of a Lockout/Tagout Device*** - Lockout/Tagout devices shall only be removed by, or under the direction of, the individual who applied the device and whose name appears on the tag. Before LOTO devices are removed and energy is restored to the equipment, the authorized employee must follow the procedures below:
  - 4.7.1** Verify that it is safe to re-energize; The last authorized employee to remove his/her LOTO must verify that the work for which the LOTO was applied has been completed and that it is safe to re-energize equipment.
  - 4.7.2** Clear all tools and personnel; The authorized employee must check the work area to ensure that all tools and personnel are at a safe distance from the equipment.
  - 4.7.3** Remove all isolating device(s); The authorized employee must remove any device(s) applied under Section 4.5.
  - 4.7.4** Replace safety guards; The authorized employee must check the equipment to ensure that any removed guards are reinstalled.
  - 4.7.5** The lock and tag may now be removed, the energy-isolating device reset, and the machinery returned to service.
  - 4.7.6** If safety is compromised by following the above prescribed sequence, the authorized employee may modify the sequence; however, all steps (4.5 through 4.5.8) must be performed.

- 5.1** Whenever possible a padlock must be used to secure the disconnect mechanism or the energy isolating device. The use of a padlock and appropriate key control measures are the most effective way to prevent other workers from inadvertently re-energizing a piece of equipment. *All new equipment installations, and existing installations requiring periodic work involving hazardous energy sources shall be equipped with energy-isolating devices capable of being locked-out.*
- 5.2 Padlocks** - All padlocks used for controlling hazardous energy sources shall be identifiably different from locks used for other applications (i.e., securing gates, cabinets, etc.). ***Therefore, only padlocks that are red in color will be issued for the purpose of locking out hazardous energy sources.*** Likewise, red padlocks will not be used for purposes other than controlling hazardous energy sources. Each padlock will be individually keyed and numbered, and all padlocks will be inventoried and assigned by the Safety Manager, who is Hilscher-Clarke's Lockout/Tagout Coordinator. Employees authorized to perform a Lockout/Tagout shall obtain the padlocks from the Safety Manager or Supervisor, and the Safety Manager or Supervisor will maintain a log sheet of padlock assignment (*see Appendix D*).
- 5.2.1** Padlocks are assigned on an individual basis. Sharing of locks or use of locks by others than the individual to whom the lock was assigned, is strictly prohibited.
- 5.2.2** Padlocks used for controlling hazardous energy sources must be accompanied by a "Danger Do Not Operate Tag" (*see Appendix A*).
- 5.2.3** Locking devices must be substantial so that they cannot be removed or bypassed while workers are depending on them for protection.
- 5.2.4** LOTO locks are the property of Hilscher-Clarke and must be turned in to the Safety Manager upon termination of employment.
- 5.3 Keys** – Each Hilscher-Clarke, approved padlock has two keys, ***primary & emergency***. The primary key must be in the possession of the Authorized Employee who applied the lock. The emergency key must be kept in a secured area (i.e., a lock box) with access limited to the Authorized Employee's immediate Supervisor and one level of management above the Authorized Employee's immediate Supervisor (Safety Manager).
- 5.3.1** A group of locks with a common key may be used for equipment with multiple energy-isolation devices, if desired. If a group of locks is keyed alike for this purpose, one key only may be issued for use by the Authorized Employee and a second key may be kept for emergency use, as described above.
- 5.4 User Log** - Employees assigned multiple locks are required to maintain a User Log (*See Appendix E*) that identifies the location and purpose of each LOTO application. User Log information shall include date of application, lock number, location, purpose of installation, and date of removal.
- 5.5 Key Control** - Keys for locks that are used to control hazardous energy sources must be strictly controlled for the program to be effective. Each padlock will have only two keys;
- One key is assigned to the employee at the time the lock is checked out;
  - The second key is retained by the employee's immediate Supervisor. All keys assigned to employees must remain under the control of the Supervisor.
- 5.6 Multi-Lock Hasps (Gang Locks)** - Whenever more than one employee is working on a system or piece of equipment, multi-lock hasps or a group lock box must be used, and each worker must apply his/her lock to the hasp. Multi-lock hasps are available from the Supervisor and are to be returned to the Supervisor upon completion of the project.

**5.7 Group Lock Box** – Lockboxes are an option that can be used for single or multiple isolation points to simplify lockout/tagout or to reduce the hazards of applying lock and tag. The principle of the lockbox use is the security of the lockout key(s) and control of the key(s) by the Authorized Worker. The most practical location for the lockbox(es) is at the job site. This allows the Authorized Worker to easily confirm the integrity of their Lockout/Tagout. Specifically identify the lockbox to the job being performed. Posting the tagout authorization form on the lockbox is one method of meeting this requirement. Typical situations where lockboxes are used:

**5.7.1** Multiple isolation points – Apply lock(s) and danger-do not operate tag(s) to the isolation points and place the key in the lockbox. All Authorized Workers apply their Authorized Worker lock and danger tag to the lockbox. The use of a lockbox does not absolve the Authorized Worker from personally checking that no hazardous energy exists;

**5.7.2** If the isolation point may not support or accept multiple Lockout/Tagout;

**5.7.3** ALARA – If the isolation points are in an area of chemicals, radiation or other hazards, use the lockbox to keep the Authorized Workers from being exposed to the hazard.

**5.7.4** ALARA – If the isolation points are in an area of chemicals, radiation or other hazards, use the lockbox to keep the Authorized Workers from being exposed to the hazard.

**5.7.5** In areas of poor or restricted access (confined space, etc.), one person enters to perform Lockout/Tagout and places the key in the lockbox located adjacent to the hazardous area.

**5.7.6 Supplemental Locking Devices** - A number of energy isolating mechanisms such as circuit breakers, valves, plugs, etc. may require the use of supplemental equipment before a padlock can physically be applied for the purpose of securing an energy source. Devices are now available which allow workers to lockout energy sources that previously could not be locked out. Whenever possible, supplemental devices must be obtained and utilized in lieu of simply applying a tagout. These devices are available from the Safety Manager.

**5.8 “Danger Do Not Operate” Tags** – These tags are available from the Supervisor. At a minimum, tags must include the following information:

- Name and telephone number of the individual who is applying the tag;
- Date that the tag is applied;
- Information on the tag as to its purpose.

**5.8.1** The tags must never be used on equipment that is energized or in service. Tags used for the purpose of controlling a hazardous energy source shall be durable enough to withstand exposure to the environment where they are installed (i.e., laminated for wet environment), for as long as they are expected to be there.

**Reference Appendix A for examples of various Lockout devices.**

- 6.1** When servicing, maintenance, modification, or equipment installation is performed by a crew, the Safety Manager may determine that the use of a group LOTO procedure is appropriate. This determination must be made only:
- If the size of the crew and the nature of the work precludes the feasibility of individual LOTO's, and;
  - If the level of protection provided by the group LOTO procedure is equivalent to that of individual LOTO.
- 6.2** A group LOTO procedure is a special procedure where the responsibility for applying and removing the lockout devices of a group of authorized employees is vested in a single ***designated Authorized Employee***.
- 6.3** Application of Group LOTO using a Gang Lock Box.
- 6.3.1** The Safety Manager or Supervisor will determine that group LOTO is appropriate.
- 6.3.2** The Safety Manager or Supervisor will conduct a meeting of all members of the group to be covered under the procedure.
- The Safety Manager or Supervisor will describe the task(s) to be performed;
  - The Safety Manager or Supervisor will delegate primary responsibility to a designated Authorized Employee for a specified group of employees working under the protection of the group's LOTO.
  - Each member of the specified group must be an Authorized Employee, as set forth in this plan.
- 6.3.3** The designated Authorized Employee is responsible for ensuring that each step of the general or equipment-specific written procedure is completed.
- 6.3.4** The designated Authorized Employee must apply his or her personal LOTO lock(s) and tag(s) to the energy-control device(s) and indicate on the tag(s) that a "group lockout" is in effect.
- 6.3.5** The designated Authorized Employee shall place his/her key(s) inside of a gang lock box. The gang lock box shall be constructed in such a way as to permit multiple locks to be attached to the outside of the enclosure, preventing it from being opened.
- 6.3.6** All other Authorized Employees performing work on the equipment shall independently lock and tag the gang lock box.
- 6.3.7** When the work has been completed and after each Authorized Employee has removed his/her respective lock from the gang lock box, the designated Authorized Employee shall remove his/her keys from the lock box and return the equipment to service as described in Section 4.0 through 4.7.6 of this plan.
- 6.4** Application of Group LOTO using a Controlled Recordkeeping Process.
- 6.4.1** The Safety Manager or Supervisor will determine that group LOTO is appropriate.
- 6.4.2** The Safety Manager or Supervisor will conduct a meeting of all members of the group to be covered under the procedure.
- The Safety Manager or Supervisor will describe the task(s) to be performed;
  - The Safety Manager or Supervisor will delegate primary responsibility to a designated Authorized Employee for a specified group of employees working under the protection of the group's LOTO.

- The structure of the group, the names of all group members and the designated Authorized Employee, and reasons for the group LOTO must be documented in a log book.
  - Each member of the specified group must be an Authorized Employee, as set forth in this plan.
  - The Safety Manager will assign the task of all appropriate logbook entries to the designated Authorized Employee.
- 6.4.3** The designated Authorized Employee is responsible for ensuring that each step of the general or equipment-specific written procedure is completed.
- 6.4.4** The designated Authorized Employee must apply his or her personal LOTO lock(s) and tag(s) to the energy-control device(s) and indicate on the tag(s) that a “group lockout” is in effect.
- 6.4.5** The designated Authorized Employee must communicate to each person in the crew that LOTO is in place and work may commence.
- If the makeup of the crew changes while work is in progress, the designated Authorized Employee must inform any new group member that a group lockout is in place and communicate to him or her all of the information relating to the group lockout. The name(s) of the new group member(s) must be added to the log.
  - Anyone leaving the group before the servicing, maintenance, or modification is completed must notify the designated Authorized Employee. The group member leaving must communicate the status of his or her activities to the designated authorized employee. The designated Authorized Employee must make a logbook entry indicating the date and time of each group membership change.
- 6.4.6** When the work is completed, the designated Authorized Employee must communicate to each group member that the group LOTO is being considered for removal and:
- Must verify with each member that all tasks performed in conjunction with the specific job are complete.
  - Must verify that the equipment has been returned to a safe restate condition.
- 6.4.7** After positive verification is received from all crew members, the designated Authorized Employee may remove the group LOTO devices and perform equipment restart.
- 6.4.8** If any group member is not present to provide the verification that is required under 6.4.6 and 6.4.7, the designated authorized employee must follow all of the procedures as outlined in the Emergency Removal of LOTO Devices (Section 7.0)
- 6.4.9** Each member of a group lockout is considered to have a lock and tag on the equipment and must comply with all other requirements in this plan.

## 7.8 Emergency Removal Of A LOTO Device

- 7.1** When the Authorized Employee who applied a LOTO device is not available to remove it, that device may be removed by the Safety Manager or a designated Supervisor. This is considered to be an emergency procedure, only to be undertaken in extreme circumstances.
- 7.2** When removing an Authorized Employee's LOTO device;
  - 7.2.1** The Safety Manager or Supervisor must verify that the Authorized Employee is not at the site.
  - 7.2.2** The Safety Manager or Supervisor must make every reasonable effort to contact the Authorized Employee. This may include a telephone call to the employee's home or other location.
  - 7.2.3** If the employee is contacted, the Safety Manager or Supervisor must inform the employee that his or her LOTO devices are being removed. The Safety Manager or Supervisor will also complete and issue a "Notification of Lock Removal" form (*see Appendix B*) to any and all concerned parties.
  - 7.2.4** The Safety Manager or Supervisor must verify that it is safe to remove the LOTO devices.
  - 7.2.5** The Safety Manager or Supervisor may then use the emergency key to remove the LOTO devices, or the lock may be cut off if the key is not available. (See section 5.3 of this plan.)
  - 7.2.6** The Safety Manager or Supervisor must ensure that the Authorized Employee is presented with the removed lock upon his/her returning to work and is informed of the reasons for the emergency removal.
  - 7.2.7** The emergency procedure must be duly recorded in the site's Lockout/Tagout records and signed by both the Safety Manager or Supervisor and the Authorized Employee.

- 8.1** To ensure the continuity of LOTO protection during shift or personnel changes, if work is to be continued by an oncoming shift, an orderly transfer of LOTO devices between Authorized Employees from the offgoing and oncoming shifts must be performed. The Authorized Employees from both shifts must both be present at the lockout device. The offgoing Authorized Employee must remove his or her lock and tag, and the oncoming Authorized Employee must inform the authorized oncoming employee of potential hazards.
- 8.2** If the orderly transfer of LOTO devices is not possible because of a gap in shifts, the following procedures must be implemented to provide continuity of LOTO protection.
  - 8.2.1** The Authorized Employee who is going off shift replaces his/her LOTO lock with an **Administrative Lock** (see section 2.0 of this plan), which is controlled by the affected group.
  - 8.2.2** The oncoming employee(s) replace the Administrative Lock with their individual LOTO locks.
- 8.3** If the above procedure cannot be followed, the Supervisor must oversee the transfer of LOTO by Controlled Logbook Consent.
  - 8.3.1** If the Authorized Employees from both shifts cannot be present simultaneously at the lockout device because there is a gap between their shifts, the Authorized Employee of the offgoing shift may acknowledge, by written logbook entry, prior consent to remove his or her LOTO devices during the oncoming shift. The Supervisor of the Authorized Employee must make a corresponding logbook entry.
    - The logbook entries must include the authorized employee's and Supervisor's signatures, the equipment identification, maintenance procedure being performed, and all other pertinent safety information regarding the equipment and/or procedure.
  - 8.3.2** The Supervisor of the oncoming shift must read and understand the logbook entries and is authorized to remove the LOTO device of the Authorized Employee from the offgoing shift.
  - 8.3.3** The Authorized Employee of the oncoming shift must apply his or her LOTO device.
  - 8.3.4** Both the oncoming Authorized Employee and his or her Supervisor must make logbook entries acknowledging the performance of this special procedure.
  - 8.3.5** All subsequent LOTO actions must conform to the standard LOTO policy and procedures outlined in this plan.
  - 8.3.6** Before resuming work, the Authorized Employee who gave prior consent for removal of his or her LOTO devices must be personally informed by the Supervisor that the Authorized Employee's devices have been removed. This Authorized Employee and Supervisor must make confirming logbook entries, and the Supervisor must then return the LOTO devices to the employee.

## 9.0 Subcontractors

- 9.1** The President and/or Safety Manager are responsible for ensuring that all subcontractors are informed of and adhere to Hilscher-Clarke's Hazardous Energy Control Plan.
- 9.2** Construction subcontractors will be required, when applicable to include LOTO procedures in accordance with Hilscher-Clarke's plan in their construction safety plans. The Safety Manager and/or President must ensure that the subcontractor's safety plan is consistent with the intent of Hilscher-Clarke's Hazardous Energy Control Plan and 29 CFR 1910.147. Subcontractor employees are not required to take the Hilscher-Clarke LOTO course, but they must be trained in their company's LOTO procedure.
- 9.3** All subcontractor employees have the responsibility to apply LOTO to equipment that they are working on. Regardless of whether or not they will perform LOTO, all subcontractor employees have potential exposure to LOTO activities and must be trained in the recognition of the procedure and the importance of respecting locks and tags.
- 9.4** A subcontractor operating under an approved safety plan generally will provide its own LOTO equipment. The LOTO hardware used must be approved by the President and/or Safety Manager.
- 9.5** When Hilscher-Clarke requires local oversight of a utility or other system that is associated with the Subcontractors' work, it may forbid the subcontractor from operating that system. In such an instance, the cognizant Hilscher-Clarke Safety Manager would apply an administrative lock on a multiple lockout device on the energy isolating device after securing the system. All of the Subcontractor's employees are still responsible for applying personal LOTOs while they are working on that system. After the work is completed, and all of the subcontractors' locks are removed, the Safety Manager removes the administrative lock and reenergizes the system

## 10.0 Visitors To The Site

- 10.1** Any visitor to a Hilscher-Clarke site is required to be trained and authorized in LOTO if they service, maintain, or modify equipment, as described in this plan.
- 10.2** The Safety Manager is responsible for administering any and all training that may be required.
- 10.3** Any and all visitors to a Hilscher-Clarke site are considered to be Affected Employees.

## 11.3 Periodic Inspections

- 11.1** The President is responsible for ensuring that a periodic inspection and certification of its energy-control procedures be conducted at least once, or annually, on each Hilscher-Clarke work site.
- 11.2** The periodic inspection must be performed and documented by the Safety Manager, or the President if the Safety Manager is the one utilizing the energy-control procedures being inspected.
- 11.3** The periodic inspection must be designed to correct any deviations or inadequacies observed.
- 11.4** The certification must state:
- That the periodic inspection has been performed;
  - The certification must identify the machine(s) or equipment on which the energy-control procedure was utilized;
  - The date of the inspection;
  - The employee(s) included in the inspection (*the person performing the inspection will include a review, with each employee, of that employee's responsibilities under the energy control procedure being inspected*);
  - The name and title of the person performing the inspection.

## 12.0 Working On Energized Equipment

- 12.1** Because of the high level of hazard, work on energized equipment shall be strenuously avoided. Equipment shall be designed and installed in a manner that eliminates the need for energized work, or the work shall be performed outside normally scheduled hours when the equipment can be deenergized, if possible.
- 12.2** Situations may still occur that require work to be performed on equipment that is not in a Zero-Energy State, such as performing measurements, adjustments, calibration, or trouble shooting. In these instances, necessary controls shall be identified and implemented to reduce the risk to an acceptable level. This may include, but is not limited to having a properly trained and equipped observer present during the work, using appropriate personal protective equipment, and limiting the volume or strength of the energy source.
- 12.2.1** Work on energized equipment that must be done on a periodic or routine basis shall be addressed in an approved Equipment-Specific Written Procedure, or other formal procedure.
- 12.2.2** Only the Safety Manager and/or the President may authorize (and will directly supervise) work on energized electrical equipment that does not have an approved Equipment-Specific Written Procedure, or other formal procedure.

## 13.0 Equipment Specific Written Procedures

- 13.1** If the equipment undergoing servicing, modification, or maintenance has more than one energy source, or requires the operation of more than one device to isolate the hazardous energy, or has potential for stored, residual, or accumulated hazardous energy, an equipment-specific written procedure must be used.
- 13.2** A written energy-control procedure must be generated by the President, Safety Manager or even an “Authorized Employee” (as defined by the terms and conditions of this Plan) most familiar with the equipment. This procedure must be used by *any* Authorized Employee who will perform LOTO on the equipment.
- 13.3** The Safety Manager must ensure that equipment, which requires a written procedure, is so identified and that the procedure is readily available to the employees authorized to perform LOTO on the equipment.
- 13.4** Any equipment with an equipment-specific written LOTO procedure must be clearly labeled as such. The Safety Manager or Authorized Employee responsible for the equipment may determine the appropriate format and content of the label, for example:

**Caution – An equipment-specific written procedure exists for the locking and tagging of this equipment. This equipment-specific written procedure may be obtained from \_\_\_\_\_\***

*\* Entry to be determined by the V.P. of Field Operations.*

- 13.5** The equipment-specific written procedure must incorporate each applicable step outlined in this Plan .
- 13.6** It is essential that the specific application of each LOTO step be clearly explained in the context of the specific equipment.
- 13.7** If questions arise concerning the specific piece of equipment, the individual responsible for the equipment-specific written procedure should contact the original equipment manufacturer (OEM) for assistance and/or clarification.

## 14.0 Performing Tagout Only On Devices That Cannot Be Physically Locked Out

Some devices cannot physically be locked out, or must remain energized (to some extent) for adjustments. For these situations, Hilscher-Clarke has established the following procedures and policies when operating LOTO without the benefit of locking devices (reliance on a tagout system).

- 14.1** Prior to beginning a “Tagout Only” a Safe Work Permit (see Appendix H) must be completed and submitted to the Safety Manager.
  - 14.1.1** The Safety Manager will review and authorize and/or reject the permit. The Safety Manager is responsible for designating the “Authorized Employee” for each Safe Work Permit issued.
  - 14.1.2** The “Tagout Only” is under the exclusive control of the Authorized Employee performing the servicing or maintenance described in each Safe Work Permit.
- 14.2** The Safe Work Permit, issued in accordance with Hilscher-Clarke’s LOTO Policy, shall delineate the equivalent level of safety to be obtained before the work described in the permit may proceed.
- 14.3 Tagout Only Tags** - All tags used for controlling hazardous energy sources shall be identifiably different from tags used for other applications (i.e., Administrative LOTO, LOTO User Tags.). Therefore, only tags that are gray, black and white in color will be issued for the purpose of tagging hazardous energy sources. Likewise, gray, black and white tags will not be used for purposes other than controlling hazardous energy sources. Each “Tagout Only” tag will be individually numbered, and all “Tagout Only” tags will be inventoried and assigned by the Safety Manager, who is Hilscher-Clarke’s Tagout Only Coordinator. Employees authorized to perform a “Tagout Only” shall obtain the tags from the Safety Manager, and the Safety Manager will maintain a log sheet of tag assignments (*see Appendix D*).
  - 14.3.1** Tags are assigned on an individual basis. Sharing of “Tagout Only” tags or use of such by others than the individual to whom the tag was assigned, is strictly prohibited.
  - 14.3.2** Tags and their means of attachment, are to be substantial enough to prevent inadvertent or accidental removal. Nylon cable ties or “Zip-Ties” are the recommended methods of tag attachment.
  - 14.3.3** “Tagout Only” tags are the property of Hilscher-Clarke and must be turned in to the Safety Manager upon termination of employment.
- 14.4** A “Safety Watch” employee(s) will be assigned to each Safe Work Permit and/or “Tagout Only” procedure. This person(s) will be designated and assigned by the Safety Manager to assist an “Authorized Employee” in performing installation, maintenance, setting up or adjusting equipment that is not to be locked out (as described in the Safe Work Permit). This person shall be posted at an unlocked energy-isolating device to ensure that the device is not operated for the duration of the operation, except as directly communicated to the “Safety Watch” employee by the designated Authorized Employee. The “Safety Watch” shall have no other duties, nor shall he/she leave his/her station for any reason, except when formally relieved from duty, by the Authorized Employee or Safety Manager, or for personal safety.
- 14.5 Removal of a “Tagout Only” Tag** – “Tagout Only” tags shall only be removed by, or under the direction of, the individual who applied the tag and whose name appears on the tag. Before “Tagout Only” tags are removed, the Authorized Employee must follow the procedures outlined in sections 14.5.1 through 14.5.8.

## 14.0 Performing Tagout Only On Devices That Cannot Be Physically Locked Out

- 14.5.1** Verify that it is safe to close the “Safe Work Permit” and re-energize; The last authorized employee to remove his/her “Tagout Only” tag must verify that the work for which the Safe Work Permit was issued and the “Tagout Only” tag applied, has been completed and that it is safe to re-energize the equipment.
- 14.5.2** Clear all tools and personnel; The Authorized Employee must check the work area to ensure that all tools and personnel are at a safe distance from the equipment.
- 14.5.3** Remove all barricades and barriers; The Authorized Employee must also remove any device(s) applied under Section 4.5 of this policy and procedure.
- 14.5.4** Replace safety guards; The Authorized Employee must check the equipment to ensure that any removed guards are reinstalled.
- 14.5.5** The “Tag” may now be removed, the energy-isolating device reset, and the machinery returned to service.
- 14.5.6** If safety is compromised by following the above prescribed sequence, the authorized employee may modify the sequence; however, all steps (outlined in section 4.5 through 4.5.8 of this policy and procedure) must be performed.
- 14.5.7** The Authorized Employee must return the completed Safe Work Permit to the Safety Manager.

When utilizing “Tag-Out Only” Procedures, some form of barrier is to be installed to properly warn and inform Affected Employees of the potential hazard. All barrier systems utilized by Hilscher-Clarke shall comply with the following:





- 15.1** The effectiveness of audible and visual warning devices is strongly influenced by many human factors (i.e., fatigue and distraction). To compensate for this, the use of physical barriers in conjunction with signs and warning devices should always be considered.
- 15.2** When choosing a type of barrier, consider the following:
  - 15.2.1** The nature of the hazard.
  - 15.2.2** The need for the barrier to be well constructed and durable, and to not interfere with the operation of the equipment or experiment.
  - 15.2.3** The circumstances under which the barrier can be opened or removed.
  - 15.2.4** Whether the barrier creates new or unacceptable hazards.
  - 15.2.5** Compliance with existing on-site “Danger” or “Caution” warning systems.
  - 15.2.6** Education of all Affected Employees if visual warning devices are being utilized (i.e., color and meaning of specified color).

# Appendix

Appendix A – Examples of Various LOTO Tags & Devices

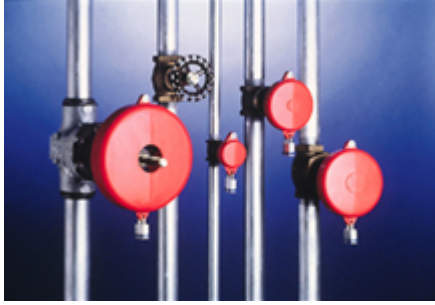
**“Danger Do Not Operate” Tag.** This tag is used to identify equipment and controls that are subject to LOTO and **MUST NOT** be operated.



<p><b>Padlocks</b></p> 	<p><b>Receptacle Blockout Device</b></p> 
<p><b>Plug &amp; Switch LOTO Device</b></p> 	<p><b>Cable Lockout Device</b></p> 

Appendix A – Examples of Various LOTO Tags & Devices (cont.)

**Valve Lockouts**



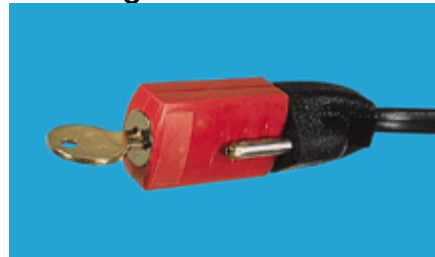
**Circuit Breaker Lockouts**



**Lockout Hasps**



**Plug Lockout Device**



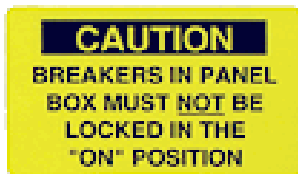
**Pneumatic Lockout Device**



**Plug & Switch Lockout Device**



**Various Examples of Signage**





# Emergency Removal Of a Loto Device

Shift change, or change of personnel, is one of the most potentially dangerous situations on a jobsite where Lockout/Tagout is being utilized. Whenever one worker leaves a jobsite, or a machine, and doesn't remove his/her personal lock or tag, it opens everything up to speculation:

- Is the job completed?
- Can we re-energize the equipment now?
- Can I apply my lock over this one and continue with the assigned work?
- When the "Worker" who applied the LOTO device isn't there to remove it, the device (lock) can be removed only in an emergency, and only under the direction of the worker's immediate supervisor. This is considered to be an emergency procedure, only to be undertaken in extreme circumstances.
- The worker's immediate supervisor must verify that the Authorized Employee is not at the site.
- The Supervisor must make every reasonable effort to contact the Authorized Employee. This may include a telephone call to the employee's home or other location.
- If the employee is contacted, the Supervisor must inform the employee that his or her lock is being removed. The Supervisor must also complete and issue a "Notification Of Lock Removal" form to any and all concerned parties.
- The Supervisor must verify that it is safe to remove the LOTO device(s).
- The Supervisor may then use the emergency key to remove the LOTO device(s), or the lock may be cut off if the key is not available.
- The Supervisor must ensure that the Authorized Employee is presented with the removed lock upon his/her returning to work and is informed of the reasons for the emergency removal.
  - The emergency removal of the LOTO device must be recorded in the site's/facilities Lockout/Tagout records and signed by both the Supervisor and the Authorized Employee.

<b>Notification of Lock Removal</b>			
Date	Time	Machine/Location	Employee Name
On the above date and time a lock was left attached to a lockable device on the indicated machine. After following the procedures outlined in our Hazardous Energy Control Plan for the Emergency Removal of a LOTO Device, we are satisfied that the employee who attached the lock is no longer on the work site or in the building, nor is he or she in danger. This device (lock) is being removed.			
This form must be signed by the appropriate individuals:			
Supervisor _____			
<input type="checkbox"/> The employee's immediate Supervisor must make an initial logbook entry acknowledging the performance of this special procedure.			
<input type="checkbox"/> This form is to be given to the Authorized Employee, prior to, or at the immediate start of their returning to their assigned duties			
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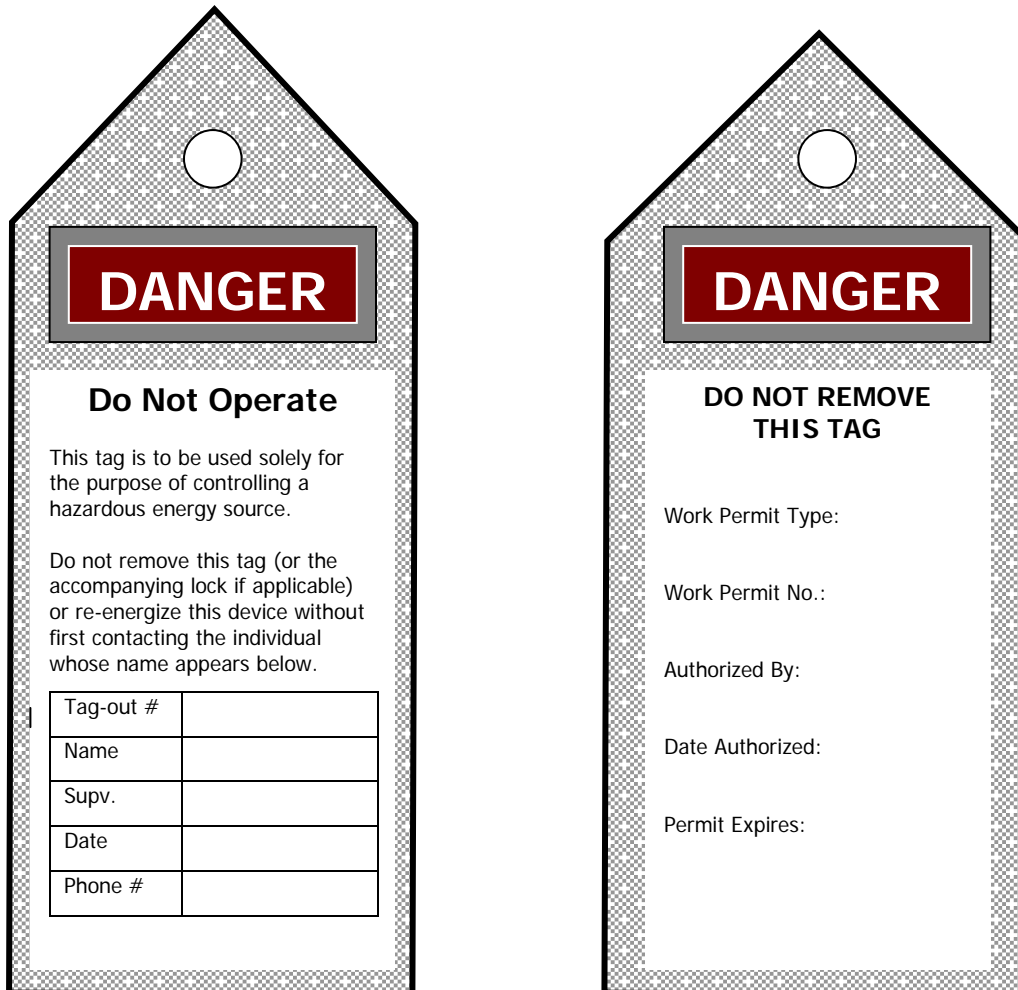
# Lockout S.O.P.

## Lockout Procedures

1. **Train authorized lockout personnel, and train affected employees to identify the locks being used.**
2. **Assign the job.**
3. **Define the work area.**
4. **Identify an energy source by the equipment's components.**
5. **Notify affected employees.**
6. **Is a lockout needed to secure the job area?**
7. **Find all system components in the work area.**
8. **Check to see if the energy source can be turned off.**
9. **Get qualified personnel to make the decision.**
10. **Do system stop: turnoff, lock out, test source.**
11. **The system should be discharged or disconnected by qualified personnel.**
12. **Attempt a manual start.**
13. **Look for action or movement.**
14. **Attempt a manual start again.**
15. **Look for action or movement again.**
16. **Check for any other energy sources.**
17. **Perform the indicated work.**
18. **Notify affected employees.**
19. **Remove the lockout devices from the disconnects.**
20. **Restart the equipment, if possible.**
21. **Report the finished job to the appropriate Supervisor.**

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Tag 3: “**Tagout Only**” Tag. This control tag is used by the Authorized Employee to set energy control boundaries.



**Remember...**

When the tagout program is used, it is essential that employees be trained in the limitations of the tags. For example:

- ❑ Tags are *only warning devices*. They do not provide the physical restraints that the locks do.
- ❑ Tags can provide a *false sense of security* and their meaning may not be understood if all affected employees have not been properly trained.
- ❑ It is easier to *bypass or ignore a tag* or remove it without authorization.
- ❑ Tags may not be effective unless they are *legible and understandable* by all authorized and affected employees, and all other employees who may work in the area.
- ❑ Tags can fall off or be knocked off unless they are *securely attached*.



## General Safe Work Permit

**(Permits are site/activity specific. Blanket permits shall not be issued.)**

### **Permit Issuer (Hilscher-Clarke Safety Manager and/or Authorized Staff):**

1. Issue Safe Work Permits in accordance with the requirements of this program.
2. Coordinate the hazard assessment process with the necessary subject matter experts to establish controls necessary to maintain an acceptable level of risk.
3. Periodically inspect the work area(s) and activities covered by the Safe Work Permit to determine if the controls specified in the permit are being properly maintained.
4. Stop work if it is determined that the controls established in the Safe Work Permit are not properly implemented or appear ineffective. Work shall not proceed until appropriate controls are established to maintain an acceptable level of risk.
5. Revise the Safe Work Permit as needed to incorporate changes in the scope of work, permit duration, hazards and/or established controls.