

Procedure Title:	<b>Control of Hazardous Energy (LOTO)</b>	SOP Number:	<b>SOP-100-03-PR-004</b>
Procedure Owner:	<b>Corporate HSE</b>	Issuing Authority:	<b>Chief Safety Officer</b>

# CONTROL OF HAZARDOUS ENERGY (LOTO)

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# Control of Hazardous Energy (LOTO)

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## 1.0 PURPOSE

The purpose of this Procedure is to establish the minimum requirements for the Control of Hazardous Energy (LOTO) for STIS DBA Southeast Texas Industrial Services.

## 2.0 SCOPE

This procedure applies to all HenSu Holdings employees, contractors, subcontractors and visitors associated with an HenSu Holdings site.

## 3.0 RESPONSIBILITIES

The following personnel have responsibilities defined in this procedure:

- HenSu Holdings Managers
- HenSu Holdings Supervisors
- HenSu Holdings Employees
- HenSu Holdings Contractors
- HenSu Holdings Subcontractors
- HenSu Holdings Visitors

## 4.0 PROCEDURE

Each site shall make every attempt to prevent the possibility of incidents and accidents to employees while performing work activities involving hazardous energy sources through compliance with safety regulations, training of employees to properly perform their job activities and through employee involvement in safe work activities.

### 4.1 POLICY

- 4.1.1 All employees, upon observing a machine or piece of equipment that is locked out or tagged out shall not attempt to start, energize or use that machine or equipment.
- 4.1.2 Every attempt shall be made to positively lock out hazardous energy sources. Just tagging out hazardous energy sources shall be used only as a last resort.
  - Tags shall be made of a durable material and attached by means of zip ties in order to prevent accidental removal.
- 4.1.3 All locks on lockout equipment shall be removed upon completion of the work being performed.

### 4.2 GENERAL GUIDELINES

- 4.2.1 Lockout/Tagout (LOTO) shall be performed in all cases where the control of hazardous energy is necessary for employee protection. Potential energy sources that may require Lockout/Tagout are, but not limited to the following; electrical, hydraulic, pneumatic, steam, gas, and/or gravity.
- 4.2.2 HenSu Holdings supervision or qualified maintenance personnel shall perform an initial evaluation to identify potential exposure(s) that shall be isolated before safely working on machines or equipment.
- 4.2.3 All affected personnel shall be notified, and the machine or equipment shall be shutdown according to established procedures with approval of the responsible supervisor or designated alternate.
  - If a possibility of the re-accumulation of stored energy exists, verification of isolation shall be continued until the servicing or maintenance is completed or until the possibility of such re-accumulation no longer exists.
- 4.2.4 Only locks and tags supplied by HenSu Holdings shall be used.

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- 4.2.5 If an energy isolating device is not capable of being locked out, the employer's energy control program shall utilize a tagout system.
- 4.2.6 If an energy isolating device is capable of being locked out, the employer's control program shall utilize lockout, unless the employer can demonstrate that the utilization of a tagout system will provide full employee protection.
- 4.2.7 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.
- 4.2.8 Whenever outside servicing personnel, customer's employees, other contractors, etc. are to be engaged in activities covered by the scope and application of this procedure the HenSu Holdings Control of Hazardous Energy (LOTO) procedure shall be used and followed.
  - If the HenSu Holdings Control of Hazardous Energy (LOTO) procedure cannot be followed, HenSu Holdings management shall approve the outside employer's plan before work can commence.
- 4.2.9 Employees working in facilities with more restrictive requirements for the Control of Hazardous Energy (LOTO) shall follow those requirements as long as there are no conflicts between the HenSu Holdings procedure and the site's procedure.

### 4.3 GROUP LOCKOUT/TAGOUT

- 4.3.1 When servicing and/or maintenance are being performed by multiple crews, they shall utilize a procedure which affords all employees a level of protection equivalent to that provided by the implementation of a personal LOTO device.
- 4.3.2 All affected employees shall be required to actively participate in the LOTO process.
- 4.3.3 Group LOTO devices shall be used in accordance with the procedures required by this section including, but not limited to, the following specific requirements:
  - 4.3.3.1 HenSu Holdings supervision shall have the overall responsibility for the set number of employees working under the protection of a group LOTO device (such as an operation's lock).
  - 4.3.3.2 When multiple crews are involved, the overall job associated LOTO control responsibility shall be assigned to an authorized employee who shall be designated to coordinate the affected work forces and ensure continuity of protection.
  - 4.3.3.3 Provisions shall be in place for authorized employees to ascertain the exposure status of individual group members with regard to the LOTO of the machine or equipment.
  - 4.3.3.4 Each authorized employee shall affix a personal LOTO device to the group lockout device, group lockbox, or comparable mechanism before they begin work, and shall remove those devices when their portion of the job task is completed.
- 4.3.4 When the work being performed on locked out equipment will be conducted over the course of and by multiple shifts of workers, HenSu Holdings management shall establish and implement specific procedures to be utilized during shift or personnel changes to ensure the continuity of LOTO protection.
  - The procedure shall include provisions for the orderly transfer of LOTO device protection between off going and oncoming employees, to minimize the exposure to hazards from the unexpected energizing or start-up of the machine or equipment, or the release of stored energy.

### 4.4 BASIC LOTO PROCEDURE

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- 4.4.1 All affected employees shall be notified that servicing or maintenance is required and that the machine or equipment must be shut down and locked out.
- 4.4.2 The authorized employee shall:
  - 4.4.2.1 Identify the types and magnitude of energy the machine or equipment utilizes,
  - 4.4.2.2 Understand the hazards of the energy sources, and
  - 4.4.2.3 Know the methods to control the energy sources.
- 4.4.3 All machines or equipment, when required, shall be shut down by the normal stopping procedure.
- 4.4.4 All energy isolating device(s) shall be deactivated.
- 4.4.5 The person doing the work shall apply their lock to the approved disconnect device.
- 4.4.6 All stored or residual energy shall be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.
  - 4.4.6.1 If springs are involved, they shall be released or physically restrained when necessary to immobilize mechanical equipment.
  - 4.4.6.2 The use of breaks (i.e., on pumping units) is not an acceptable means of energy isolation. The use of blocks and/or chains, in addition to the break, shall be required.
  - 4.4.6.3 All pipes, lines or ducts shall be blinded or blanked. If this is not feasible the pipe, line or duct shall be disconnected and **both** open ends shall be properly isolated and tagged.
- 4.4.7 The lockout shall be tagged with a “DANGER, DO NOT OPERATE” tag. A lock shall never be installed without a tag.
  - 4.4.7.1 The tag shall be dated and signed, and shall also include the reason for the lockout.
  - 4.4.7.2 A list of personnel that have company issued locks shall be kept by senior HenSu Holdings site management with their contact information.
- 4.4.8 Other personnel doing work on this equipment or desiring it to remain inoperative shall insert a lock and danger tag in the same lockout.
- 4.4.9 There shall be two (2) keys for a lock, or set of locks, and the authorizing locking party shall hold one of the keys until the completion of the job task.
  - The second key shall remain locked and held by senior HenSu Holdings site management.
- 4.4.10 If an electrical circuit requires disconnection or removal of a component to ensure isolation, a qualified electrician shall perform the work.
- 4.4.11 Before starting work, an attempt shall be made to start-up the piece of equipment locally to ensure that the proper circuit is de-energized and that an override does not exist.
- 4.4.12 During the course of work, if the LOTO device must be temporarily removed in order for the equipment to be started-up for testing purposes, the following provisions shall be followed:
  - 4.4.12.1 All tools shall be removed;
  - 4.4.12.2 All employees shall be removed;
  - 4.4.12.3 The LOTO devices shall be removed;

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- 4.4.12.4 The equipment shall then be energized and testing conducted;
- 4.4.12.5 After testing, immediately de-energize and reapply all control measures.
- 4.4.13 Only the person who originally attached the lock and tag shall be authorized to remove it.
- 4.4.14 In the event the person who applied the lock and tag is not available, HenSu Holdings supervision shall ensure that the following steps are taken before removing the lock:
  - 4.4.14.1 An attempt to locate the original person and wait a reasonable period of time shall be made, and
  - 4.4.14.2 Supervision shall verify the person is not available or other circumstances make it impractical for the original party to remove the lock and tag, and
  - 4.4.14.3 They shall have documented approval to remove the lock by senior HenSu Holdings site management.
  - 4.4.14.4 When removal of a lock is required and the original lock owner is not available, the use of SOP-100-03-FM-004-1 LOTO Lock Removal Form shall be used to document the process.
- 4.4.15 Once the previous conditions have been met, the supervisor or designated alternate, after checking the equipment for complete repairs and assuming full responsibility, can remove the lock and tag and place the equipment back into service.
- 4.4.16 The supervisor or designated alternate shall be responsible for notifying the original personnel that their lock(s) and tag(s) have been removed. This notification shall be documented.
- 4.4.17 Due to shift or personnel changes, the custody of a lock and key may be transferred between personnel.
  - Tags shall reflect this change in responsibility.
- 4.4.18 When preparing to unlock the equipment, the person responsible for performing the work shall contact the person responsible for the area to determine that no one is working on the equipment by visually verifying no hazards to personnel or equipment would be created by placing it into service.
- 4.4.19 The area shall be clear of personnel and tools prior to attempting to start the equipment.
- 4.5 LOTO PROCEDURE FOR THE FIELD REPAIR OF MOTORIZED OPERATING EQUIPMENT
  - 4.5.1 The engine shall be turned off.
  - 4.5.2 As required to prevent exposure, any hydraulic, pneumatic or kinetic energy shall be relieved or guarded.
  - 4.5.3 The battery shall be disconnected.
  - 4.5.4 The equipment shall be tagged out.
  - 4.5.5 If key operated, the key shall be removed and in the possession of the repairman during the time of the repairs.
  - 4.5.6 An attempt shall be made to start the equipment. If it does not start, repairs can proceed.
  - 4.5.7 Upon completion of repairs:
    - 4.5.7.1 All removed guards shall be replaced,
    - 4.5.7.2 Guards installed to prevent the release of energy shall be removed,

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4.5.7.3 Tools and other material shall be collected and removed from the equipment, and

4.5.7.4 The battery shall be reconnected.

4.5.8 All personnel not involved in the start-up should be removed and the equipment restarted.

4.5.9 The tag shall be removed and normal operations resumed.

4.5.10 The following types of equipment are covered by this policy:

4.5.10.1 Portable welding machines. (Lincoln, Miller, etc.)

4.5.10.2 Pick-up trucks. (Dodge, Ford, Chevrolet, etc.)

4.5.10.3 Portable air compressor. (Ingersoll Rand, Kohler, etc.)

4.5.10.4 Mobile crane. (Grove, Galion, etc.)

4.5.10.5 Skid steer loaders. (Bobcat, Case, etc.)

### 4.6 PERIODIC INSPECTION

4.6.1 At least annually, an inspection of the Control of Hazardous Energy (LOTO) procedure shall be conducted and documented to ensure that the requirements of the procedure are being followed.

4.6.2 The inspection shall be performed by each manager or designated alternate.

4.6.3 The inspection shall be conducted to correct any deviations or inadequacies identified and shall include the following:

4.6.3.1 A review between the supervisor or designated alternate and each authorized employee about the employee's responsibilities under the Control of Hazardous Energy (LOTO) procedure.

4.6.3.2 Identification of the equipment on which LOTO was being utilized.

4.6.3.3 Date of inspection.

4.6.3.4 A list of the employee or employee's inspection.

4.6.3.5 Supervisor or designated alternate performing an inspection.

### 4.7 TRAINING

4.7.1 Training in this procedure for authorized employees shall be completed. Only trained and authorized employees shall attempt repairs or maintenance on machines or equipment where the Control of Hazardous Energy (LOTO) is required.

- Training provisions should include any other employee whose work operations are or may be in an area where energy control procedures may be utilized.

4.7.2 Retraining shall be required annually or whenever there is a change in job assignments, in machines or equipment, in the energy control procedure or a new hazard is introduced.

4.7.3 All training and retraining shall be documented, signed, certified and entered into the HenSu One Database.

4.7.4 The training shall include:

4.7.4.1 The purpose and use of the energy control procedure,

4.7.4.2 Recognition of hazardous/stored energy sources, types and the magnitude of energy available,

4.7.4.3 Methods and means necessary for energy isolation and control,

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4.7.4.4 When tag out systems are to be used, including the limitations of tags:

- A tag is a warning device that does not provide physical restraint and shall not be removed without authorization.
- A tag shall never be ignored or defeated in any way.

### 5.0 REFERENCES

OSHA 1910.147	Control of Hazardous Energy (Lockout/Tagout)
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### 6.0 TERMINOLOGY

<b>Affected Employee</b>	An employee whose job requires him to operate or use a machine or equipment on which servicing or maintenance is being performed under LOTO, or whose job requires him to work in an area in which such servicing or maintenance is being performed. Any field employee may be an effected employee while performing repair of maintenance activities on out-of-service machines or equipment.
<b>Authorized Employee</b>	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.
<b>Blinding / Blanking</b>	The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.
<b>Disconnection</b>	Physically disconnecting and offsetting the ends or removing part of the system, and properly isolating and tagging <b>both</b> open ends. An acceptable alternative when blinding of a line is not feasible.
<b>Energized</b>	Connected to an energy source or containing residual or stored energy.
<b>Energy Isolating Device</b>	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.
<b>Energy Source</b>	Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.
<b>Lockout</b>	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.
<b>Lockout Device</b>	A locking device that provides a positive means for rendering a switch, valve, or any energy source inoperable. The device may be a padlock, restraining bar, chain, or any device that positively prevents a machine or piece of equipment from becoming

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	energized or from releasing stored energy.
<b>Servicing and/or Maintenance</b>	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 Un-jamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or start-up of the equipment or release of hazardous energy.
<b>Site</b>	Any location where HenSu Holdings personnel are involved in work activities.
<b>Tagout</b>	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 tag out device is removed.
<b>Tagout Device</b>	Serves as a lockout and is a means of identifying who locked out the machinery, the date and time of day the lockout took place and the department for which the person works. There is additional information that may be placed on the tag such as beeper number, extension number, etc. Tags are of a durable nature and can be securely fastened to the locking mechanism so as not to fall off. 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.

### 7.0 EXHIBITS

None