ENVIRONMENTAL HEALTH & SAFETY POLICY

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Policy Subject:	**Control of Hazardous Energy Policy (LOTO)**	**Effective Date:**	**01 June 2016**
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1.0 PURPOSE

To provide for control of unexpected energization or startup of equipment, the release of stored energy, or release of potential hazard (such as chemical lines or springs) which could cause injury to employees. The procedures will apply to all energy sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravity or stored energy.

2.0 POLICY STATEMENT

This Superior Environmental Solutions (SES) safety program is established to protect the safety and health of its workers and to comply with federal and state requirements. Servicing and/or maintenance of machines and equipment which takes place during normal production operations requires the use of lockout/tagout if:

a. An employee is required to remove or bypass a guard or other safety device; or
b. 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.
c. Any work on energized equipment that could expose the employee to injury.

Exception: Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this policy 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 section on Minor Servicing Exceptions).

- NOTE: Emergency Stops (E Stops), micro switches, selector switches, limit switches, etc.. are not energy isolating devices. These devices are not a positive means of controlling hazardous energy and are NOT acceptable means of lockout.

The policy does not cover 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 facility demonstrates that continuity of service is essential, shutdown of the system is impractical and documented procedures are followed, and special equipment is used which will provide proven effective protection for employees.

Exception to this policy also applies to cord- and plug-connected electric equipment when unplugging the equipment from the energy source completely controls the hazardous energy and when the plug end of the cord is under the exclusive physical control of the employee performing the servicing and/or maintenance. To ensure exclusive control a cap shall be placed over the plug and locked out. A machine specific LOTO procedure must also be developed for this equipment as well.

These are to be considered the minimum performance requirements for the control of such hazardous energy for employees and contractors of SES for compliance with OSHA 1910.147, Control of Hazardous Energy (Lockout/Tagout).

Violation of this policy could result in disciplinary action up to and including termination.

3.0 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 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.

Control Reliability — A method of ensuring the integrity of the performance of guards, devices, or control systems (American National Standard for Machine Tools – Other B11 Machine Tool Safety Standards – Performance Criteria for the Design, construction, Care and Operation, ANSI B11.19-1990).

NOTE: The American National Standard for Machine Tools – Performance Criteria for Safeguarding, ANSI B11.19-2003, defines the term as

[t]he capability of the machine control system, the safeguarding, other control components and related interfacing to achieve a safe state in the event of a failure within their safety related functions. See OSHA Directive CPL 02-00-147 The Control of Hazardous Energy – Enforcement Policy for further description for providing effective alternative protection.

Controller — A device or group of devices that serves to govern in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

Disconnecting Means — A device, group of devices, or other means by which the conductor of a circuit can be disconnected from its source of supply.

Energized — Connected to an energy source or containing potential and/or stored energy.

Energy isolating device — A mechanical device that, when utilized or activated, physically prevents the transmission or release of energy, including but not limited to the following:

1. A manually operated electrical circuit breaker;
2. A disconnect switch;
3. A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no polecan be operated independently;
4. A line valve, bolted blank flange and bolted slip blinds;
5. A block (e.g., a safety block); and
6. Any similar device used to block or isolate energy.

Push buttons, selector switches safety interlocks and other control circuit type devices are NOT energy isolating devices.

NOTE: Programmable logic controllers (PLCs) are used in many machine applications, and these control circuit devices are not considered energy

isolating devices for purposes of the LOTO standard. Safety functions, such as stopping or preventing hazardous energy (motion), can fail due to component failure, program errors, magnetic field interference, electrical surges, improper use or maintenance, etc.

Energy source	Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
Exclusive control	*Under the exclusive control of the employee* means that the authorized employee has the authority to and is continuously in a position to prevent (exclude) other individuals from re-energizing the machine or equipment during his/her servicing or maintenance activity. Note: if more than one employee is performing work, each employee performing work must have the equipment locked out for exclusive control.
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.
Isolating switch	A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and it is intended to be operated only after the circuit has been opened by some other means.
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. While the term lockout includes the placement of a lockout device onto an energy isolating device, the term encompasses all systematic steps taken pursuant to an established energy control procedure to shutdown the machine and or equipment and effectively isolate hazardous energy. Note: Lockout/Tagout will be noted as LOTO for the remainder of this program.
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. The physical act or process of removing or releasing the isolation (e.g., opening electrical disconnects or valves), during the start-up process, as well as machine or equipment re-energization and/or startup, is considered a normal production operation**.**
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.

4.0 PROCEDURES

A. RESPONSIBILITY

Manager:

1. Understand and follow all general LOTO procedures and the machine specific energy isolation procedures for any machine that the manager is authorized to LOTO.
2. Ensure that all locks and tags used for LOTO identify the person utilizing the equipment and applying the device(s).
3. Know the location of the machine specific energy isolation procedures for the department.
4. Ensure all personnel understand and follow the LOTO program.
5. Periodically audit the program to ensure compliance.
6. Ensure that the clock number and/or the employee's name is on all locks and tags used.
1. Know the location of the machine specific energy isolation procedures for the department.
2. Ensure all supervisors understand and follow the LOTO program.
3. Ensure supervisors train their employees on LOTO procedures and machine specific energy isolation procedures.
4. Ensure supervisors maintain a copy of the LOTO and machine specific energy isolation procedures for their area close to their department.
5. Ensure machine specific energy isolation procedures are written prior to the startup of a new piece of equipment.
6. Periodically audit the program to ensure compliance.
7. Ensure that if violations of the lockout policy are observed, appropriate disciplinary action is taken.
8. Maintenance/Engineering Personnel: Communicate program requirements with contractors.

Supervisors:

1. Understand and follow all general LOTO procedures and the machine specific energy isolation procedures for any machine that the supervisor is authorized to LOTO.
2. Ensure that the employee id number, other unique id number, and/or the employee's name is on all locks and tags used.
3. Know the location of the machine specific energy isolation procedures for the department.
4. Understand the lockout policy and follow the established procedures.
5. Know the machine specific isolation procedures for the equipment in the department.
6. Train employees on LOTO at least annually or when there has been a change in equipment.
7. Train all new or transferred employees on LOTO procedures if their job requires them to lock out equipment.
8. Ensure the machine specific energy isolation procedures are available within the department.
9. Audit employees on LOTO procedures and correct deficiencies immediately.
10. Ensure that if violations of the LOTO policy are observed, that appropriate disciplinary action is taken.

Employees:

1. Understand and follow all general LOTO procedures and the machine specific energy isolation procedures for any machine that the employee is authorized to LOTO.
2. Ensure that the clock number and/or the employee's name is on all locks and tags used.
3. Know the location of the machine specific energy isolation procedures for the department.

Safety Manager to coordinate the program:

1. Understand and follow all general LOTO procedures and the machine specific energy isolation procedures for any machine that the safety coordinator or designate program coordinator is authorized to LOTO.
2. Know the location of the machine specific energy isolation procedures for the department.
3. Provide technical assistance on the LOTO program.
4. Train supervisors, superintendents and managers and new employees on general LOTO procedures.
5. Monitor the overall program and correct deficiencies.
6. Conduct periodic audits to ensure compliance.
7. Assist Maintenance/Engineering in communicating program requirements with contractors.

B. LOTO PROGRAM IMPLEMENTATION

The following compliance steps guide the implementation process for the lockout tagout program in your facility. If you have any questions or need assistance with this procedure please contact the Safety Contact for your facility.

1. Identify equipment types and document the energy sources.

Written lockout procedures are developed for each piece of equipment on which maintenance or service is performed that has single and multiple energy sources and not supplied by cord and plug must be documented on the *EQUIPMENT SPECIFIC ENERGY CONTROL PROCEDURES FORM (Appendix A or an equivalent format)*. Documentation is maintained of all authorized employees and the equipment they are authorized to lock out on the *AUTHORIZED EMPLOYEES FORM (Appendix B)*.

2. Develop specific written steps required to control energy sources

Lockout/Tagout

- If an energy isolating device is capable of being locked out, the authorized employees must use a lockout device.
- If an energy isolating device is not capable of being lockout out, a tagout system is utilized only when approved by the safety department. The tagout system must provide the equivalent safety as that of a lockout. Additional safety measures that could be used are 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.
- Equipment that can only be locked out with a tag must be reviewed by the engineering and/or maintenance staff to determine if physical changes can be made so that the equipment can be locked out with a lock instead of a tagout device.
- Whenever a replacement or major repair, renovation or modification of a machine or equipment is to be performed, and whenever new machines or equipment are installed, energy isolating devices must be designed to accept a lockout device.

Energy Control Procedure

Energy control procedures are developed, documented and used for the control of potentially hazardous energy. The procedures clearly and specifically outline the scope, purpose, authorization, rules, and techniques to be used for the control of hazardous energy. The documented procedures include, but are not limited to the following:

1. A statement of intended use of the procedure,
2. Procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy.

3. Procedural steps for the placement, removal and transfer of lockout devices or tagout devices and the responsibility for them.
4. Requirements for testing machinery or equipment to determine and verify the effectiveness of lockout devices and other energy control measures.
5. Procedures with more than 1 energy source must be labeled at the top of the procedure with a star.

Each supervisor must have access to a set of machine specific energy isolation procedures in their department using the *EQUIPMENT SPECIFIC ENERGY CONTROL PROCEDURES Examples (Appendix A or an equivalent format)*.

3. Lockout Device Selection

The lockout locks, tags and hasps are singularly identified and are only used for controlling energy and are not used for any other purpose. The locks have a single key and are not able to be opened by a master key for that type of lock. SES locks are red American lock Series A1100 with employee ID number or unique number assigned to the employee.

Each authorized person who is to perform LOTO is issued his or her own lock, hasp and tag. Tags must include the name of the employee, ID number of the employee, and the department of the employee. Each individual energy source must have its own lock or tag so the authorized employees will receive as many locks and/or tags as necessary to perform a proper lockout.

Lockout should be used in all cases where required. Tagouts can only be used when approved by the safety department with a documented procedure and training. In the rare exception a tagout device is used it will warn against hazardous conditions and include a legend that states one of the following: **Do Not Start. Do Not Open. Do Not Close. Do Not Energize or Do Not Operate.** 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. Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored. Tagout devices, print and format shall be standardized. 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.

4. Specific Requirements

LOTO of any machine or piece of equipment must be done in accordance with the written procedures for that particular machine or piece of equipment. The following procedures for a lockout/tagout sequence must be performed in the order listed below:

1. **Preparation for Shutdown** – Before a machine or piece of equipment is turned off, the employee(s) who will perform the lockout/tagout must have the 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 to be encountered.

   Review the equipment for the following examples of energy sources:

ENERGY TYPE:	GENERAL HAZARDS:	CONTROL METHOD:
Electrical	Electrical shock	Turn off power at breaker or disconnect, use lock and tag to secure in off position
Pneumatic	Air born objects, air embolism	Turn off supply line at valve, use lock and valve lockout to secure in off position
Chemical	Burns or chemical reaction	Turn off supply line at valve, use lock and valve lockout to secure in off position
Mechanical	Crushing injuries	Turn off energy source & lock in off position. Disassemble as needed or use blocks and /or other

		devices to prevent movement of mechanical parts.
Hydraulic	Burns or liquid embolism	Turn off supply line at valve, use lock and valve lockout to secure in off position
Thermal	Burns of fire	Turn off energy supply & lock in off position, place-insulating blanket over surface**.**
Gravity	Crushing injuries	Use blocks, jacks or other devices to prevent injury during installation and removal of machine parts or equipment.
Potential and/or Stored	Crushing injuries	Turn off energy source & lock in off position. Use blocks, bands and /or other devices to prevent movement of springs, counter weights and other potential energy sources.

2. **Machine or Equipment Shutdown** – The machine or equipment must be shutdown in accordance with established procedures in an orderly fashion to avoid any additional or increased hazard(s) to employees as a result of the de-energization. If the equipment is in operation, shut it down by the normal stopping procedures. This will normally be done by depressing the stop button or turning a switch to the off position.

3. **Machine or Equipment Isolation –** All energy isolating devices that are needed to control the energy to the machine or equipment must be located and operated in such a manner as to isolate the machine or equipment from the energy source(s). De-activate the energy isolating device so that the equipment is isolated from the energy source (s).

4. **Applying Lockout or Tagout Devices** – A lockout lock, hasp and/or tagout device must be affixed to each energy isolating device by the person(s) performing the lockout/tagout. These must be placed in a manner so that they will hold the energy isolating devices in a "safe" or "off" position.

    - If tagout devices are used, they must clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position.
    - If a tag cannot be affixed directly to an energy isolating device, it must 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.

5. **Potential and/or Stored Energy** – Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy must be relieved, disconnected, restrained or otherwise made safe. If re-accumulation of hazardous energy is a possibility, then the verification of isolation must be continued until the servicing/maintenance is completed, or until the possibility of such accumulation no longer exists. Any parts of machinery or equipment which might move due to "gravity" (i.e. dumpers, elevators) must be blocked.

6. **Verification of Isolation** – Prior to starting the servicing or maintenance work on a machine or equipment, isolation and deenergization of the machine or equipment per the previous steps must be verified by the authorized employee using a <u>combination</u> of visual inspection techniques and energy detection methods.

    In most situations, this is accomplished by attempting to start the machine or equipment after assuring that all affected employees are clear. Always make sure to turn the switch to the "off" position after verifying the equipment is deenergized.

    A three-point test must be performed to verify a de-energized condition of equipment for electrical repairs if the circuit to be tested is over 600 volts. A best management practice would be, however, to perform the three-point test on all circuits no matter what the voltage level is. The three-point test should be conducted as follows:

1. Test approved meter on a known voltage source.
2. Test process in question using the same approved meter.
3. Test approved meter on a known voltage source again.

7. **Release from Lockout or Tagout** – Before startup:
   a. the work area is inspected to ensure that all nonessential items have been removed
   b. ensure that machine or equipment components are operationally intact (this includes ensuring that any safety guarding or safety devices that have been removed are placed back on the machine or equipment before the equipment is started).
   c. All area employees must be safely positioned or removed from the scene.
   d. Each LOTO device must be removed by the employee who applied the device.
   e. All employees that were informed at the beginning of the lockout/tagout procedure that the locks and tags have been removed are notified prior to start-up.

C. SPECIAL CIRCUMSTANCES

1. Testing or Positioning of Machinery

   In situations where lockout or tagout devices need to be temporarily removed from the energy isolating devices and the machine or equipment energized to test or position that machine or equipment, the following sequence of procedures must be followed:

   a. Clear the machine or equipment of tools and other nonessential materials.
   b. Remove employees from the machine or equipment area, if necessary. Move employees away from normal workstations if they could be in harms way.
   c. Remove the locks and tags.
   d. Energize and proceed with testing or positioning.
   e. Turn off all systems, isolate the machine from the energy source, and reapply lockout or tagout devices as specified, if additional servicing or maintenance is required, reapply energy control measures

2. Minor Servicing Exceptions
   In the event of an exception, there must be a formal written procedure as to how the employee(s) is to de-energize, test and control the energy without the actual locking device. If at any point a part of the body is exposed to a point of operation where injury could occur if the equipment is energized, then the LOTO procedure is used. Only a tool can be used in this case for example to unjam equipment. The employee(s) must be trained on this procedure prior to performing any lockout exceptions and retrained annually. The procedure must be approved in advance by the SES Facilities requesting Safety Manager, Manager/Supervisor, and General Manager and documented on the *LOCKOUT TAGOUT BY-PASS REVIEW AND APPROVAL FORM (Appendix C).* Under no circumstances should an interlock be used as a lockout device. Note: Machine guarding must still be in place and in use when any exception is utilized.

3. Group LOTO – Must be approved by Safety Coordinator at Facility.
   When servicing and/or maintenance will be performed by a crew, craft, department or other group, they will utilize the same level of protection equivalent to that provided by the implementation of a personal lockout device. The following are the specific requirements that must be followed if a group lockout is to be performed:

   - One employee must take primary responsibility for a set number of employees working under the protection of a group lockout or tagout device. This will be a maintenance, production, engineering, or sanitation superintendent/manager. The individual who is responsible for the group lockout or tagout must document on the *GROUP LOCKOUT FORM (Appendix D)* the name of each individual who will be involved in the group lockout or tagout before the work is performed. The form will be kept with that individual until the work is completed and will later be kept on file.

- The employee must determine the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment. This will be a member of management.
- If more than one crew is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces must occur to ensure continuity of protection.
- Lockbox locks and tags are applied to all the lockout points by the authorized primary employee. The keys are collected, verified and placed inside the lock box. The lock box is closed and a multi-lock hasp is affixed to it. (The last available hole on the hasp can only be used for another hasp).
- Each worker on the job applies his/her personal lock to the multi-lock hasp so the box cannot be opened until each personal lock is removed. Each person's lock remains in place as long as he/she is actively working on the locked out equipment.
- The last lock to be removed should be that of the person overseeing/supervising the lockout.

4. Shift change, personnel changes and long-term LOTO requirements

Each facility shall develop specific procedures to be utilized during shift changes, personnel changes or long-term LOTO needs to ensure the continuity of lockout or tagout protection. It will include provisions 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 of the release of stored energy. For example:
If a job has not been completed by the end of the shift, the person(s) leaving the job shall not remove their locks or tags until those of the on-coming shift have attached their locks and tags and verified that the equipment is locked out.

Provisions must be included for the documented continuation of lockout or tagout device protection between employees working multiple periods to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment of the release of potential and/or stored energy. It shall also include a written procedure for administering and removal of the lockout tagout device by someone other than the person applying the device(s).

5. LOTO Device Removal Procedures

Only the authorized employee who applies the LOTO device may remove it.
Exception: 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 manager using the following procedure with documentation

Step 1: Determine the need for the lockout device to be removed.
Can the lockout be left in place until the person who installed the device returns to work?
If not, go to Step 2.

Step 2: Notify the person who the lockout device is assigned to that the lockout needs to be removed. Complete the *LOCK REMOVAL FORM (Appendix E)* for all steps.
The employee who leaves a lockout device on a machine and did not follow the shift change procedure is required to return to the facility to remove their lockout device. If the owner of the lockout cannot be reached then the following steps are to be taken. Document that the employee has left the facility.

Step 3: If person the lockout device is assigned to cannot be reached, the following procedures must be followed.

a. Only a supervisor or higher can request that a lockout device be removed.
b. The person requesting the lockout device to be removed assumes total responsibility of the safety of the equipment operation and notification of the employee whose lockout device was removed.

c. A complete inspection of the equipment that the lockout is removed from must be performed. Required information includes:

1. Name of equipment and location;
2. Name of lock owner;
3. Name of employee requesting lock removal;
4. Whether the lock owner was contacted, date, time and method;
5. Reason owner states the lock was left on;
6. Reason for removal;
7. Equipment Inspection Detail: (Lock(s) may not be removed if yes to any of the following:
    a. Guarding on yes/no
    b. Drive chains on yes/no
    c. Loose bolts yes/no
    d. Exposed wiring yes/no
    e. Hazard risk to product yes/no
    f. Other Hazards yes/no
    g. Affected employees notified yes/no

d. The person requesting the lockout device be removed must document how they will ensure that the employee, whose device(s) were removed, will be notified of the removal of the device BEFORE the employee reenters the work area.

e. Only designated personnel are allowed to remove the lockout device. When notified that a lockout device is to be removed, they will bring a set of bolt cutters to the location of the device. Once they have been given a copy of the *Lockout Removal Form*, they will remove the device by cutting the locks shank. The DESIGNATED PERSON WILL NOT GIVE AUTHORIZATION TO ANYONE ELSE FOR A LOCK TO BE REMOVED! The designated person will then complete a report to the safety contact giving notification of what has been done to ensure employee safety. Communication to the employee who's lock was removed must occur – a copy of the lockout removal form must be placed in an envelope with employee's name on it at a toolbox, guardhouse(facility entry point), time clock, locker, etc. Original form must be sent to Safety department, with a copy to the employee's supervisor.

6. Procedures for Leaving Guards Off after Tear Down/Cleaning of Machines
   If, after tear down of equipment by production or after cleaning of equipment by sanitation, machine guards must be left off equipment that has the potential to injure an employee (i.e. slicer blades, round knives, circle knives) for any reason (i.e inspection by quality assurance or regulatory officials), ensure the machine is shut off and tagged with a warning sign that states either **"Do Not Run" or "Do Not Operate"** until the machine guards have been put back in place on the machine.

7. Vehicle Hazardous Energy Control
   Any vehicle may contain the following types of hazardous energy, such as, but not limited to:

   1. Chemical energy due to contact with battery acid, coolant, lubricants;
   2. Electric battery shock, arc, and burn hazards;
   3. Explosion hazards associated with air bags;
   4. Fire and explosion hazards associated with the fuel and fluid systems;
   5. Gravitational energy (mechanical) hazards caused by elevated vehicles (e.g., unsafe use of automotive lift equipment) or vehicle components.
   6. Hot or cryogenic fluid and surface (thermal) hazards;
   7. Hydraulic hazards associated with fluid pressure and fluid loss.
   8. Mechanical hazards associated with disc brake spring and tire components;
   9. Mechanical motions due to moving power transmission components;
   10. Premise wiring electric hazards associated with battery recharging (addressed by OSHA 1910-Subpart S – Electrical standards); and

11. Mechanical hazards associated with unexpected start-up or unexpected energization of vehicles or vehicle components.

Removing the ignition key may not, in all cases, adequately control all types of vehicle hazardous energy such as positioning of the vehicle or its components. Energy hazards must be evaluated. The ignition key may provide a significant degree of protection in many situations. The authorized employee would need to retain sole control of the key (assuming the keyed switch is the only means of vehicle start-up). Additional protection may be achieved by the authorized employee by locking the doors. Other energy sources that are independent of the key subsystem must still be controlled.

D. TRAINING

All employees will be trained in the lockout tagout program annually as follows:

a. Authorized Employees must have the knowledge and skills necessary for the safe application, use, and removal of energy isolating devices and be able to safely perform the work required by any energy control procedure that he/she may be called upon to use, however rarely. Therefore, these employees need training in the applicable aspects of the procedure and its proper utilization, together with training in the recognition of applicable hazardous energy sources, types and magnitude of energy available in the work place, and the methods and means necessary for energy isolation and control. Each employee will be informed of the disciplinary action that will be taken for failure to comply with the program. Management and supervisors will be trained to the authorized level.

b. Affected Employees are instructed in the purpose and use of the energy control procedure. Each employee will be informed of the disciplinary action that will be taken for failure to comply with the program.

c. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, are instructed about the procedure, and about the prohibition relating to attempt to restart or reenergize machines or equipment which are locked out or tagged out. Each employee will be informed of the disciplinary action that will be taken for failure to comply with the program.

Training at a minimum will include the following:

- Review of the LOTO Written Policy
- Review of Machine Specific Energy Isolation Procedures with demonstration and employee participation in the lockout procedures
- Review of By-Pass Procedures
- Review of LOTO Devices and Limitations of Tagout Devices
- Review LOTO Video or equivalent (new hires)
- Review Discipline Procedures for Failure to Comply with LOTO Procedures

All new hires will be trained on the lockout/tagout procedures during new hire orientation. Existing employees are trained at least once a year.

Employees are retrained whenever there is a change:

- in job assignment,
- machines, equipment or processes that present a new hazard, or
- when there is a change in the energy isolation procedures.

Additional training will be conducted whenever a periodic inspection reveals a deficiency in the program. All training documentation must include the name of the employee, date of training and training content.

E. NEW/MODIFIED EQUIPMENT PROCEDURES

The Project Leader (Maintenance or Engineering) is responsible for

1. Developing written machine specific energy isolation forms for all new or modified machinery and equipment prior to startup.
2. Training the employees on the new or modified pieces of equipment following the training guidelines in this policy prior to starting up the new or modified equipment.

If for some reason a piece of equipment can only be locked out with a tag, the engineering and/or maintenance staff will review those pieces of equipment to determine if physical changes can be made so that the equipment can be locked out with a lock instead of a tagout device.

F. CONTRACTORS

Outside servicing and maintenance personnel, such as contractors, service representatives, or employees from a temporary employment agency engaged in general industry activities are subject to the requirements of this standard. SES and the contractor must have a documented review of each other's respective LOTO procedures before work is performed. See the *CONTRACTOR LOTO PROGRAM ACKNOWLEDGMENT FORM (Appendix F).*

This may include a discussion regarding relevant provisions (e.g., control measures for all hazardous energy sources potentially to be encountered) of the respective procedures. This is intended to ensure that both SES and the contractor are aware that their interaction can be a possible source of injury to employees and are effectively coordinating energy control procedure interaction to protect all employees from hazardous energy. Both SES and the contractor also must each ensure that the respective employees understand and comply with all requirements of the contractor's energy control procedure(s). Outside contractors must use their own lockout devices. Each party must abide by the specified LOTO procedures or disciplinary action will be taken up to and including removing the contractors from the work site.

REGULATORY INSPECTIONS

In the event a regulatory official (i.e. USDA) must lockout a piece of equipment for pre-operational inspections, the SES employee(s) will lockout jointly with the regulatory official.

1. SES personnel will shutdown and lockout the equipment for the regulatory official following all lockout procedures stated in this program.
2. The regulatory official will apply their own lockout locks to the hasp (per Food Safety and Inspection Service (FSIS) directive 4791.11 of 1997) prior to performing pre-operational inspections.
3. When the pre-operational inspections have been completed, the USDA official will immediately notify facility management that the equipment may be released from the energy control procedures.
4. The regulatory official will remove his/her locks.
5. The SES personnel will remove their locks.
6. The facility management will periodically audit the regulatory officials to ensure compliance.

G. PERIODIC VERIFICATION AUDIT

The OSHA standard calls for periodic inspections to be performed at least annually (based on twelve-month intervals) to verify that the procedures are adequate and being properly applied.
These periodic inspections must contain at least two components:

a. an inspection of each energy control procedure, and
b. a review of each employee's responsibilities under the energy control procedure being inspected. All authorized personnel must be inspected annually.

Each energy control procedure must be separately inspected to ensure that the energy control procedure is adequate and is being properly implemented by the authorized employee in accordance with the LOTO standard.

NOTE: Energy control procedures that are not required to be documented, per the §1910.147(c)(4)(i) documentation exception, still need to be inspected and reviewed to ensure that they are adequate and being properly utilized.

At a minimum, these inspections must include a demonstration of the procedures and must be performed while the authorized employees perform servicing and/or maintenance activities on machines or equipment. The inspections may be accomplished through random audits, facility safety tours, or planned visual observations.

The person performing the inspection must be an authorized employee other than the one(s) utilizing the energy control procedure being inspected. The periodic inspections must contain at least two components:

a. a visual observation of each emergency control procedure, and
b. a review of lockout procedures with all authorized employees who use the procedure.

Each documented inspection *(See Machine SPECIFIC ENERGY ISOLATION PROCEDURE AUDIT Appendix G)* must ascertain whether:

a. The steps in the energy control procedure are being followed;
b. The employees involved know their responsibilities under the procedure; and
c. The procedure is adequate to provide the necessary protection and what changes, if any, are needed.

Energy control procedures used less frequently than once a year (based on a twelve-month interval) need be inspected only when used.

Machines and equipment with the same type and magnitude of hazardous energy and which have the same or similar type of controls can be grouped and inspected by the type of procedure, if all the procedures in the grouping have the same or similar:

- Intended machine/equipment use;
- Procedural steps for shutting down, isolating, blocking, and securing machines or equipment;
- Procedural steps for the placement, removal, and transfer of the lockout or Tagout devices and the responsibility for them; and
- Requirements for testing a machine or equipment to determine and verify the effectiveness of LOTO devices and other control measures.

H. ANNUAL REVIEW AND CERTIFICATION

1.1 The Manager and Lockout Program Facilitator shall be responsible for reviewing this program and it's elements at least annually to assure that this program is up to date and that the elements are still appropriate to the operations needs. See the *LOCKOUT/TAGOUT ANNUAL PROGRAM EVALUATION CHECKLIST FORM (Appendix H).* A review of the Injury Records for the operations will be conducted and any injury noted to be related to a lockout issue will be evaluated to see in any part of the program can be improved to help assure that future work will be protected via the program. Training documentation will be evaluated to assure departmental training has been accomplished for all affected and authorized employees. In addition, documentation related to the periodic verification audit for equipment and all authorized employees is reviewed.

The use of this policy is authorized by: _____(President) _____Date

_____(Safety Director) _____Date

AUTHORIZED EMPLOYEES

Appendix B

Employee Name	Department	Lock No.	Authorized Equipment for LOTO	Training / Review Date

LOCKOUT TAGOUT MINOR SERVICING EXCEPTION REVIEW AND APPROVAL FORM

Machine/Equipment: **Department:**

Reason for By-Pass Procedure:
This procedure is to be used when

Personnel Authorized to use this By-Pass Procedure:

Employee: _____ **Date:** _____

By-Pass Procedure Reviewed and Approved BY:

Manager: _____ **Date:** _____

Safety Contact: _____ **Date:** _____

Engineering Manager: _____ **Date:** _____

Maintenance Manager: _____ **Date:** _____

Minor Servicing Exceptions

In the event of an exception, there must be a formal written procedure as to how the employee(s) is to de-energize, test and control the energy without the actual locking device. If at any point a part of the body is exposed to a point of operation where injury could occur if the equipment is energized, then the LOTO procedure is used. Only a tool can be used in this case for example to unjam equipment. The employee(s) must be trained on this procedure prior to performing any lockout exceptions and retrained annually. The procedure must be approved in advance by the SES Facilities requesting Safety Manager, Manager/Supervisor, and General Manager and documented on this form. Under no circumstances should an interlock be used as a lockout device. Note: Machine guarding must still be in place and in use when this exception is utilized.

GROUP LOCKOUT/TAGOUT FORM

GROUP LOCKOUT LEADER NAME: _____

MACHINE/EQUIPMENT TO BE LOCKED OR TAGGED:

GROUP LOCKOUT/TAGOUT PARTICIPANT NAMES:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

METHOD OF LOCKOUT CHOSEN: _____

Time Started: _____ Time Completed: _____

Date: _____

LOCK REMOVAL FORM

In the event the Authorized Employee who applied the Lockout/Tagout device(s) is not available to remove it, the following protocol must be followed.

Equipment Locked Out and
Location:_____

Lock Owner: _____

Removal Requested by: _____

Lock Owner Contacted: Yes ☐ No ☐ Date: _____ Time_____

Method of contact: _____

If owner located, state reason lock left on: _____

Reason for removal: _____

Before Removing Lock: Inspect to ensure that all non-essential items have been removed and that the machine or equipment components are operationally intact as well all safety guards are in place.

Guards Off	Yes ☐	No ☐
Drive Chains Off	Yes ☐	No ☐
Loose Bolts	Yes ☐	No ☐
Any Exposed Wiring	Yes ☐	No ☐
Any Hazard Risk to Product	Yes ☐	No ☐
Any Other Hazards	Yes ☐	No ☐

If the answer to any of the above checks is YES, do not remove the lock until the hazard is rectified.

Affected Employees Notified Yes ☐ No ☐

Method of Removal: _____

Signed: _____Title_____
(person removing lock)

Make copy of this form and put in envelope with employee's (lock owner) name on it, post/hang this envelope in one of these areas (circle one) (Must be prior to returning to work): toolbox, guardhouse(facility entry point), time clock, locker , other:_____.

Signed: _____Title_____
(area manager)

Completed form to be forwarded to the Safety Coordinator. 1 Copy to lock owner, 1 copy to lock owner supervisor.

CONTRACTOR LOTO PROGRAM ACKNOWLEDGMENT

NAME OF FIRM: _____

ADDRESS: _____

_____

_____

_____

PHONE: (____) _____

Contractor's employee(s) responsible for LOTO Program:

Name: _____ Phone: (____) _____

Acknowledgment

We acknowledge that _____ as representative for The Superior Environmental Solutions _____ facility has provided us with a copy of their operations standard LOTO Program. We acknowledge that we will meet or exceed the procedures that the facility has established.

We will also notify our facility contact of any startup of equipment that will involve or expose facility employees.

Contractor Representative /sign and date
Phone: (____) _____
SES Representative /sign and date
Phone: (____) _____

APPENDIX G

Machine Specific Energy Isolation Procedure Audit

Equipment Audited: _____Procedure No: _____ Location/Dept.: _____

Date: ____/_____/_____

Machine Specific Energy Isolation Procedure Audit:

Yes No

☐ ☐ There is a written EQUIPMENT SPECIFIC ENERGY CONTROL PROCEDURES FORM.

☐ ☐ The procedures identify all energy sources and ways to control them.

Energy sources involved: Electric☐ Hydraulic☐ Pneumatic☐ Gravity☐

Steam☐ Water☐ Refrigerant☐ Mechanical☐ Other:_____

LOTO Procedure Audit:

Audit Instructions: Observe the lockout process and check off Yes or No for each observation.
Reason for lockout: _____

LOCKOUT

Yes No

☐ ☐ Was proper notification given to all affected employees?

☐ ☐ Was equipment properly shutdown?

☐ ☐ Were control devices applied?

☐ ☐ Were energy sources properly isolated, and were locks and tags used correctly?

☐ ☐ Did employee release any potential and/or stored energy (if applicable)?

☐ ☐ Was re-start attempted, and were the controls returned to an OFF position?

☐ ☐ Is employee's name or clock number on locks/tags?

☐ ☐ If backup power/alternate source power is available, was it properly locked out?

START-UP

Yes No

☐ ☐ Was the area around equipment checked prior to start-up?

☐ ☐ Were controls checked to make sure they were in an OFF position?

☐ ☐ Were locks and tags properly removed, and was equipment properly put back in service?

Comments: _____

_____

Explain any refresher training you think is needed:

_____

I certify that the Equipment Specific Energy Isolation procedures for this equipment are correct and the employee demonstrated the correct way to lockout this piece of equipment.

Employee Signature:_____Dept._____

Auditor's Signature:_____Title:_____

Lockout / Tagout Annual Program Evaluation Checklist

Appendix H

Audit Performed by _____ Date _____

	Y	N	NA	COMMENTS
A. Lockout/Tagout Program				
1. Written program complete.				
2. Training complete and documented.				
3. Annual inspections performed and documented using the Machine Specific Energy Isolation Procedure Audit.				
B. Energy Control Procedures				
1. Equipment specific lockout procedures are established and documented.				
2. General lockout procedures are established				
3. Procedures established for removal of lockout devices. *Lock Removal Forms* on file.				
4. Procedures established for tagout (if applicable).				
5. Protective materials and lockout devices are available.				
C. Requirements for Special Situations				
1. Procedures for testing or repositioning equipment are established.				
2. Procedures for working with outside contractors are established.				
3. Procedures for group lockout/tagout are established.				
4. Procedures for shift or personnel change are established.				
5. Procedures for Service Exceptions - By-pass are established.				
6. A review of the Injury Records of the previous year conducted and any injuries noted to be related to a lockout issue were evaluated to see if any part of the program needs improvement.				

29 CFR 1910.147 (c)(6)(i) requires employers to conduct an annual review of their lockout/tagout program to verify program effectiveness.

Manager Signature: _____ Date:_____

Safety Manager Signature:_____ Date:_____