1. PURPOSE

To prevent serious injury caused by the unexpected movement of equipment, contact with energized electrical parts, or the release of stored energy while servicing or performing maintenance on machines, equipment, and/or portable power tools.

2. SCOPE

2.1 This procedure applies to all employees, permanent, temporary and contractors, in our facilities engaged in servicing and/or maintenance activities on equipment where the unexpected movement or release of stored energy has the potential to cause serious injury.

2.2 This procedure may be used independently of or in combination with a Safe Work Permit. Refer to the Safe Work Permit Policy for when a safe work permit is required.

3. RESPONSIBILITY

The EHS Director is responsible for implementing and maintaining this procedure. Terminal Managers or their designees are responsible for preparing site-specific procedures and training employees in order to comply with this general procedure.

4. DEFINITIONS

4.1 ***"Affected Employee"*** – An employee who operates or uses equipment being serviced or maintained. That employee may become an authorized employee if job duties include maintenance or servicing.

4.2 ***"Authorized Employee"*** – A person who uses lock out/tag out to perform servicing or maintenance on machines and equipment. An authorized employee must be trained in this procedure. When work is being done by a contractor, the authorized employee must be an employee of Associated Asphalt knowledgeable in the equipment on which the energy isolation is being performed.

4.3 ***"Contractor"*** - Any person working at the Associated Asphalt who is not an Associated Asphalt Employee.

4.4 ***"Danger Zone"*** – That area around a machine in which a person could be seriously injured due to the unexpected movement or release of stored energy, should LOTO procedures not be followed.

4.5 ***"Energy Control Procedure (ECP)"*** - A procedure that serves as the basis for the energy isolation to be performed. An ECP must be written for each piece of equipment that is being isolated. ECPs must be filed on the S Drive and be kept in a location accessible to authorized employees at each site and must address the following:

a. Unique identification and description of the equipment being isolated.

b. Identification of the tasks to which the ECP applies.

c. Identification and magnitude of each source of hazardous energy.

d. Verification that all energy isolating devices needed to control the hazardous energy are located, maintained, and operated as to isolate the equipment from all source(s) of hazardous energy. If not, equipment modifications must be made to ensure complete isolation.

e. Identification of the device(s) used to isolate each source of hazardous energy in **c** above. Include pictures or drawings to help identify these devices.

f. Identification of measures required to prevent re-accumulation of hazardous energy, if applicable.

g. Identification of hazards and special instructions to ensure effective isolation and safe execution of the task.

h. A checklist that enables documentation of 1) initial LOTO, 2) verification (if applicable), and 3) restoration of equipment to service.

An example ECP is provided in Appendix A**.**

4.6 ***"Group Lock out Box"*** - A specially designed, easily recognized, device used by crews performing maintenance or servicing when there are multiple lock out points & large crews. Several locks may be attached to the top when closed, securing LOTO key(s) inside.

4.7 **"Hasp"** – A device designed to be placed where a lock would normally be used. The hasp will accommodate up to 6 locks.

4.8 ***"Lock out Lock"*** – ***Associated Asphalt*** employees shall use a lightweight **RED** Master brand #410 lock. Each shall be used with standard tag on the shackle identifying to whom it was issued.

Contractors shall supply their own **YELLOW** lock. Note: Associated Asphalt may supply a contractor's lock in the event that one is not available. However, contractors should supply and use their own locks whenever possible.

Out of Service equipment shall be locked and tagged out using a **BLACK BANDED SILVER** lock.

Keys - Each shall be keyed differently, and issued with one key. These locks shall not be used for ***ANY*** other purpose.

4.9 ***"LOTO"*** – Lock out tag out - is an energy isolation/control methodology intended to prevent injury to employees while performing maintenance or servicing due to the unexpected movement or release of stored energy.

4.10 ***"Other Employee"*** – Any person working in an area where maintenance or servicing work is being performed under LOTO.

5. LOTO PROCEDURE

Lock out equipment is to be used ONLY for the purpose servicing of equipment that requires energy isolation and control. At times when equipment is taken out of service, **OUT OF SERVICE LOCKS** are to be used. Refer to **Sections 10.1 and 10.2** for out of service locks and tags to be used for this purpose.

5.1 Have ECP in Hand – An ECP is required for all work performed under LOTO. If an existing ECP is used, review the ECP to ensure energy isolation points have not been added or changed. The ECP must be in the field while performing any LOTO

procedure. **Section 4.5** outlines minimum requirements for an ECP. An example ECP is provided in Appendix A

5.2 Perform Energy Isolation - The following LOTO steps apply to all authorized personnel performing maintenance or servicing tasks within the *Danger Zone*. Energy isolation conducted by a contractor must be done by or in the presence of an authorized Associated Asphalt employee.

a. Notify – All affected employees that servicing/maintenance is required and the equipment will be shut down and locked out.

b. Identify – Energy sources and lock out devices/locks needed (Refer to ECP for this information)

c. List – Use an existing ECP for the equipment that will be shut down and locked out if one is available. Otherwise, prepare an ECP meeting the requirements of **section 4.5** above for each specific piece of equipment.

d. Shut down – If the machine/equipment is operating, use the normal controls to shut it down. DO NOT use the E-Stop!

e. Isolate – All sources of energy by operating switches, disconnects, and valves. Consider all sources of energy. See Appendix B for examples.

f. Apply locks – Lock out all sources of energy identified.

g. Dissipate/Restrain – All stored energy. Bleed lines, block or reposition parts to prevent movement. All equipment must be locked out in a safe or off position.

h. Check – That each energy source, identified on the ECP has been isolated.

5.3 Verify Energy Isolation – All individuals performing work should be involved in the verification steps. This may be done by one individual if the task involves one person. In that case, an independent verification must be performed by a second person. Verification performed by a contractor must be witnessed by an Authorized Employee. ***A separate verification is required by the incoming shift if work continued across two or more shifts.***

a. Walk Down – Walk around the equipment to confirm visually that all sources of energy have been isolated.

b. Verify – Attempt to start the equipment using normal controls. If it does not start or show any other signs that all energy has been isolated, the lock out is successful.

c. Document – That isolation of each applicable energy source has been verified on the ECP.

WARNING: Proceed with caution. Check all exposed electrical connections with a meter prior to starting work in an electrical enclosure. Break piping connections slowly. EXPECT THE UNEXPECTED. BE ALERT! STAY ALIVE!

NOTE: **After verification, no one must attempt to start or operate the machine while the lock out is in effect.**

5.3 Restore the Equipment to Service

a. Notify – All affected employees that the machine will be placed back in service; and energy will be restored. Ensure that everyone is out of the *Danger Zone*!

b. Inspect – the area to ensure that nonessential items have been removed, all guards have been removed, and the equipment is operational; **c. Remove –** Blocks/restraints & blinds, close bleed valves, remove locks and lock out devices.

d. Restore energy sources – Close electrical disconnects/switches and open valves.

e. Check – That each energy source, identified on the ECP has been isolated

f. Start – Equipment and check for normal operation.

CAUTION: **If additional work is required after restoring the machine to service or locks are removed to temporarily test or reposition equipment, the lockout will have to be reinstated prior to continuing maintenance or servicing.**

6.0 WHO, WHEN AND HOW TO ISOLATE ENERGY SOURCES

6.1 Locks - Locks may be issued to authorized individuals or be located on lock out boards for use by authorized persons.

a. They shall conform to **section 4.8** and have only one key;

b. When in place on a lock out, the authorized person shall maintain control of the key at all times;

c. Each lock in use shall have a standard tag attached to it indicating –

i. Equipment locked out, date & time;

ii. Brief description of work;

iii. Estimated time to complete;

iv. Name of authorized person attaching the lock.

6.2 Contractors – Any lock applied by a contractor must be accompanied by a lock applied by an Associated Asphalt employee familiar with the equipment being isolated. The Associated Asphalt employee's lock must be the first lock applied and the last lock removed.

6.3 Who Must Apply a Lock? - For crews of three or more or for three or lock out points, a group lock box is recommended. When a group lock box is not used, ***EACH*** person performing work in the danger zone must have their lock attached to ***EACH*** lock out point. When using a group lock box, EACH person performing work in the danger zone must have their lock attached to the group lock box.

6.4 How is the Lock Applied? - Lock out can be safely accomplished using one of the methods outlined below

6.4.1 Using a Hasp or Applying Individual Locks: A hasp or individual locks may be used when 3 or less employees are isolating 3 or less lock out points.

6.4.2 Using a Group Lockout Box: A group lock out box must be used when there are more than three employees or more than 3 lock out points. Use the box as outlined here –

- **a.** Follow steps **a., b., c.,** and **d**. in section **5.2** above.
- **b.** To apply the locks, the crew lead or his designee, places one of his/her locks on each of the lock out points. (It is recommended that all authorized persons on the crew should witness this step.)
- **c.** All of the keys are placed in the group lock out box.
- **d.** Each person working on this job must verify that points are successfully locked out and initial their acknowledgement on the ECP.
- **e.** Each person working on this job places his/her individual lock on the closed group box and retains position of his/her key.
- **f.** Proceed to steps **f.** & **g.** in section **5.2** above to complete the lock out.
- **g.** Place the group box as close as possible to the machine/equipment control station.

Using either method insures that the lock out will remain in force even if one or more persons must leave the area before the job is complete, since all remaining authorized employees still have their locks attached either to the lock out device or the group box.

6.5 Using Tags in Place of Locks

A tag or tagout device may in place of a lock **ONLY** in a situation which using a lock is not practical. The tagout must:

- **a.** Be attached at the same location that the lockout device would have been attached, and
- **b.** Provide the same level of safety as a lock. Additionally, secondary measures such as removing an isolating circuit element; blocking a control switch, opening an extra disconnecting device, or removing a valve handle may be used with a tag.

6.6 Changing Shifts and Removing Locks

Jobs continuing across multiple shifts require that the lock out remain in force for the entire period.

6.6.1 When using Hasps or Individual Locks – When a group lockout box is NOT used, all incoming employees attach their locks to all lock out devices prior to the outgoing shift removing theirs. For crews of more than 3 employees or for more than 3 lock out points, a group lock box must be used.

6.6.2 When using Group Lock Boxes during a Shift Change - Do the following:

a. The incoming supervisor or designee places a lock on each lock out point; (It is recommended that all authorized persons on the crew witness this step);

b. The outgoing shift then removes their locks from the group box;

c. The outgoing supervisor or designee takes his key(s) from the box and removes his/her lock(s) from the lock out points during this step, the incoming supervisor or designee places his/her key(s) inside the group box;

d. Finally, the incoming shift places their locks on the group lock out box.

6.6.3 When Leaving Locked Out Equipment Unattended – Always maintain locks on locked out equipment. If a different crew is expected to return to the site after leaving equipment unattended, a group lock box containing keys to locks on all isolation points may be used. In this circumstance, a single "company lock" may be placed on the group lock box and the key kept in the possession of the outgoing supervisor. The outgoing supervisor may transfer the key to company lock to the oncoming shift provided that each member of the oncoming shift:

a. verifies the lockout,

b. initialing the ECP, and

c. applies his lock to the group lock box

before commencing work.

6.6.4 Removing a Lock - At the safe completion of a job, (equipment serviced/repaired & ready to operate), if a lock remains attached, preventing normal start up, every reasonable means of contacting the owner of the lock must be used including home phone, mobile phone, and business office of a contractor if applicable. The person should return to remove his/her lock if practical. If not, use the alternate procedure below.

NOTE: Removal of a lockout/tagout device by someone other than the person who installed the device shall be authorized only by Management after confirmation that such removal is safe and necessary.

6.6.4 Removal of Individual Lock(s) And / Or Tag(s) By Others - If no contact can be made or it is not practical for the person to return, the following steps **must** be taken:

a. The ***Project Manager / Terminal Manager*** with at least **one** person knowledgeable of the equipment & repairs in question shall investigate the status of the work;

b. If ***nothing*** is found to prevent safe operation, the terminal manager or designee may authorize removal of the lock(s) ***THEN*** document the event using the form provided in Appendix C

c. **If discrepancies are found** leave the lock in place, attempt to contact the individual and contractor, if involved. ***THEN*** document the event using the form provided in Appendix C. Do not attempt to use the equipment until verification of repairs by the person(s) involved can be made.

NOTE: If any repairs are needed, no matter how minor, a complete ECP, following all above steps, must be initiated prior to beginning work.

7.0 TRAINING AND AUTHORIZATION

Only trained ***and*** authorized individuals may apply locks & lock out devices.

7.1 Initial training shall be given to newly hired employees within the first 90 days of employment, if practical. Until properly trained, they will be required to work under close supervision of the authorized Associated Asphalt employee.

7.2 At least annually, refresher training will be conducted for ALL Employees.

7.3 Training will be conducted by the EHS department or other competent person.

8.0 CONTRACTORS

Contractors working at Associated Asphalt must have a LOTO program that meets the requirements of 29 CFR 1910.147, at minimum.

NOTE: Contractors shall provide their own locks that conform to section 4.8 above. The Contractor locks are applied in ADDITION to, and not a substitute for Associated Asphalt locks. Associated Asphalt locks are the first locks that isolate a potential energy source and the last to be removed.

PERIODIC REVIEW AND PERMIT RETENTION

9.1 Retain all LOTO permits on site for at least one year.

9.2 A LOTO job with an ECP must be reviewed each calendar quarter by a qualified Associated Asphalt employee.

9.3 Significant finding of each review must be shared with the EHS director and terminal staff.

10.0 REFRENCE

10.1 Standard Locks – MASTER #410

Associated Asphalt

Contractor

Out of Service

10.2 Standard tag for LOTO

Lockout

Out of Service

10.3 Hasp for LOTO – MASTER #421 or Equal

10.4 Example of a Group Lockout Box

10.5 Regulatory references

OSHA 29 CFR § 1910.147 The Control of Hazardous Energy (Lockout/Tagout)

OSHA 29CFR §1910.333 Lockout/Tagout Electrical Safe Workplace Standard

ANSI/ASSE Z244.1-2016: Control of Hazardous Energy Lockout / Tagout and Alternative Methods

OSHA: Lockout-Tagout Interactive Training Program
http://www.osha.gov/dts/osta/lototraining/index.html

APPENDICES

Appendix A – Example Energy Control Procedure

Example ECP.docx

Appendix B – Example of Energy Sources Requiring Isolation

Appendix B - Examples.docx

Appendix C – Authorization to Remove a Lockout Lock

Lock Removal Form.docx