

LOCK-OUT/TAG-OUT PROGRAM

I. Purpose

This procedure establishes requirements for the lockout of energy isolating devices. It should be used to ensure that the machine or piece of equipment is isolated from all potentially hazardous energy and locked out and freed of all residual or accumulation energy before employees perform any servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause injury.

II. General Program Management

A. Responsibility

1. Management
2. Qualified Employees
3. Authorized Employees
4. Affected Employees

It is the responsibility of all department heads to approve all Hazardous Energy Control Procedures for equipment in their department.

Authorized employees shall be knowledgeable about the lockout procedure for each piece of equipment, the type and magnitude of the energy that each piece of equipment utilizes, and the hazards of the energy. Only authorized employees are identified on each Energy Control Procedure Form.

Affected employees and any other employees, whose work operations are or may be in the area, will be knowledgeable about the purpose and the use of the energy control procedure and the prohibitions against attempting to restart the equipment during lockout. Affected employees are identified on each Energy Control Procedure Form.

Qualified employees shall be knowledgeable about energy hazards and lockout procedures. Only qualified employees may lockout or tag out equipment. Qualified employees are identified on each Energy Control Procedure Form.

Employees who do not comply with the provisions of this program shall be disciplined in accordance with the City's policy of progressive discipline.

B. Program Review and Update

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

Adopted June 6, 2005

To keep our general program up-to-date, it is reviewed and updated under the following circumstances: Annually, on or before June 1st of each year.

Each year authorized employees who are not involved with the procedures being inspected will conduct a review of the Energy Control Procedures for all machines and equipment. The inspection will be in order to correct any deviations or inadequacies identified. It shall include a review, between the inspector and each authorized employee of that employee's responsibilities under the energy control procedure being inspected. This inspection shall be certified in writing by the inspector identifying the equipment being inspected, the date of the inspection, the employees included in the inspection, and person performing the inspection.

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

III. Methods Of Compliance

A. Preparation for Lock-out

The Authorized employee shall obtain the proper Energy Control Procedure Form from their supervisor and review it before attempting lockout.

B. Lock-out or Tag-out System Procedure

The authorized employee (in conjunction with the qualified employee if necessary) shall perform the lockout procedure as written on the Energy Control Procedure Form for the equipment being serviced, using the listed order given in the written procedure.

C. Group Lockout Procedure

- 1) This procedure will afford the same level of protection for each employee that is provided by the implementation of a personal lockout device.
- 2) The supervisor will coordinate the lockout procedure for all group lockouts.
- 3) These rules as well as the Energy Control Procedure Form for the specific piece of equipment will be reviewed with all affected and authorized personnel by the group coordinator prior to the lockout.

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

- 4) Each employee will affix his or her lock to the equipment being serviced.
- 5) No employee will be allowed to remove another employee's lock.
- 6) Each employee will remove their own lock when their part of the operation is completed.
- 7) When servicing or maintenance will involve more than one shift the off-going shift will remove their locks as the oncoming shift applies their locks.
- 8) When equipment has only enough room for one lock, the supervisor of the procedure will place the lock on the equipment and then place the key to that lock in a cabinet or box and each authorized employee will then affix their lock to the cabinet or box.

D. Shift or Personnel Changes

The specific procedure used by the City of Washington to ensure the continuity of lockout are as follows:

- 1) During Shift Change or when the authorized employee currently performing the repair must leave before their replacement arrives, the Maintenance Supervisor shall place their lock on the equipment and then the authorized employee will remove his lock. The supervisor will remove his lock after the replacement-authorized employee has placed their lock on the equipment.
- 2) Where the replacement employee is present during the time that the current authorized employee is preparing to leave, the replacement employee will place his lock on the equipment and then the current employee will remove his lock.

E. Outside Service or Contractor Personnel

Outside personnel or contractors that may be involved with or affected by the energy control procedures must submit their energy control procedures to the Safety Officer. Affected employees of the City will be trained and notified of the proper procedures by the Safety Department Head.

F. Testing or Positioning of Equipment During Lockout

In situations in which lockout devices must be temporarily removed from the energy-isolating device because the machine or equipment must be energized to test or for positioning, the authorized employee shall consult the Energy Control Procedure Form and follow the sequence of actions listed for Restoring Equipment to Service. Once the testing or positioning is complete and before servicing or maintenance is continued, de-energization following the steps on the Energy Control Procedure Form shall be re-instituted.

IV. Information And Training

Authorized Employees will be trained on the following:

1. Recognition of applicable hazardous energy sources.
2. The type and magnitude of the energy available in the workplace.
3. The method and means necessary for energy isolation and control (based on the Energy Control Procedure Sheets).

Affected Employees will be trained on the purpose and use of the energy control procedure.

Other Employees whose work operations are or may be in an area where energy control procedures may be utilized shall be instructed about the procedure and the prohibitions against attempting start-up of any locked out equipment.

Qualified employees (those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with:

- 1) The electrical energy control procedure as noted on the Energy Control Procedure Sheets.
- 2) The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment.
- 3) The skills and techniques necessary to determine the nominal voltage of exposed live parts.
- 4) The appropriate clearance distances specified in 29 CFR 1910.333 (c) and the corresponding voltages to which the qualified person will be exposed.
- 5) Authorized and qualified employees will be given training prior to any initial involvement in the lockout procedures. Affected employees will be given training at the time of hiring.
- 6) Retraining will be given whenever there is a change in job assignment, a change in equipment or processes that would create a new hazard, or whenever a change would occur in the City's Hazardous Energy Control Procedures.
- 7) A list of employees trained, type of training, and dates of training will be maintained by the Safety Officer.

v. Record keeping

As an important part of our Energy Control Program, we keep accurate records of our employees' training. These records are maintained and filed in the Safety Director's office, and are available for review by our employees and their representatives.

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

VI. Energy Control Procedure

A. Scope

This procedure establishes performance requirements for the control of energy during servicing and/or maintenance of machinery and equipment for the City of Washington.

B. Purpose

This procedure shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources, and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

C. Compliance With This Program

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment, which is locked out to perform servicing, or maintenance shall not attempt to start, energize, or use that machine or equipment. Employees who fail to adhere to this policy will automatically be disciplined by the City's progressive discipline policy.

An authorized employee is a person who locks out or tags out machines or equipment *in* order to perform servicing or maintenance on that machine or equipment; this could include an "affected" employee if that employee's duties include performing servicing or maintenance covered under this procedure. An affected employee is an employee whose job requires him/her to operate or use a machine in which servicing or maintenance is being performed under lock-out or tag-out, or whose job requires him/her to work in an area in which such servicing or maintenance are being performed.

D. Sequence of Lockout

- 1) Notify all affected employees that servicing or maintenance is required on a machine or piece of equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.
- 2) The authorized employee shall refer to the City's detailed Energy Control Procedure Form for each type of machine or piece of equipment to be locked out, to identify the type and magnitude of the energy that the machine or equipment utilizes, to understand the hazards of the energy, to know the methods to control the energy. The City shall have trained the authorized employee to enable him/her to understand the hazards and know the methods to control the energy.
- 3) If the machine or equipment is operating, shut it down by the normal stopping procedure (for example: depress the stop button, open switch, close valve, etc. Remember to include the specific

normal stopping procedure for each machine or piece of equipment on the Energy Control Procedure Form.).

4) De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s). On your Energy Control Procedure Form, list the types and locations of energy isolating devices, such as switches, circuit breakers, line valves, or blocks -- any mechanical device that physically prevents the transmission or release of energy.

5) Lock out the energy isolating device(s) with assigned individual lock(s). (List the type of lockout device used with each energy-isolating device as referenced on your Energy Control Procedure Form for each machine or equivalent type.)

6) Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

7) Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. Caution: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

8) For de-energized conductors or parts of electrical equipment only:

9) If a lock cannot be applied, the qualified person without a lock may use a tag if it is supplemented by at least additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. List the safety measures to be used, for example, the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

10) For de-energized conductors or parts of electrical equipment only:

11) A qualified person (one who is familiar with the construction and operation of the equipment and the electrical hazards involved) shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately before and immediately after this test. (List the qualified person and the testing instrument to be used.)

12) The machine or equipment is now locked out.

E. Restoring Equipment To Service

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken:

- 1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- 2) Check the work area to ensure that all employees have been safely positioned or removed from the area.
- 3) Verify that the controls are in neutral.
- 4) Remove the lockout devices and reenergize the machine or equipment.
- 5) Note: The removal of some forms of blocking may require re-energization of the machine before safe removal.
- 6) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for used.

ENERGY CONTROL PROCEDURE FORM

MACHINE

Type, manufacturer, model & serial number

LOCATION

ENERGY SOURCES AND LOCATIONS OF ENERGY ISOLATING DEVICES:

1.

2.

3.

4.

AUTHORIZED EMPLOYEE (S)

AFFECTED EMPLOYEE (S)

QUALIFIED EMPLOYEE (S)

PROCEDURE DEVELOPED BY

ANNUAL INSPECTION CERTIFICATION FORM

MACHINE _____

INSPECTOR _____

EMPLOYEES CONSULTED

DATE _____

RESULTS OF INSPECTION

Signature of Inspector/Date

Adopted June 6, 2005

Signature of Safety Director / Date

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

EXAMPLE

ENERGY CONTROL PROCEDURE FORM

MACHINE Footra Machine (Scott, Model 50, Serial #384F)

Type, manufacturer, model & serial number

LOCATION Folding

Department _____

ENERGY SOURCES AND LOCATIONS OF ENERGY ISOLATING DEVICES:

1. Electric 440 v., Column P-6
2. Compressed air, 90 psi, Column P-6
3. Hydraulic, 500 psi @ 12.5 GPM (inlet operating pressure)
4. Column P-5, 100 psi system tank pressure

AUTHORIZED EMPLOYEE (S) Maintenance (David Smith, Tom Jones)

AFFECTED EMPLOYEE (S) Operator (Jane White) Operator Assistant (Bob Frank)

QUALIFIED EMPLOYEE (S) Electrical Maintenance (Sid Young)

PROCEDURE DEVELOPED BY Safety Director (Paula Anderson)

SPECIFIC PROCEDURE FOR THIS EQUIPMENT IS AS FOLLOWS:

- 1) Verbally notify operator and Assistant that lockout will be done on the machine.
- 2) Electrical System Isolation – Press the red stop button at the operator's control panel. Turn electrical disconnect switch at column P-6 to the Off (Open) position to de-energize all electrical components of the machine. Insert a lockout device through the switch and panel hasp holes and lock securely in place with one of your own personal padlocks. Press green "on" button to verify effectiveness of lockout, then repress red stop button at operators control panel.
- 3) Pneumatic System Isolation - Manually rotate the quick throw valve for the compressed air located at column P-6 to the off position (with the valve handle at a 90 degree angle to the compressed air pipe) to secure the machine's compressed air source. Insert a lockout device through the valve handle and 90 degree hasp hole and lock securely in place with one of your own personal padlocks. Bleed the residual air pressure from the machine by opening the petcock valve (3/4 turn) at the bottom of the water trap located under the north side of the machine table. Close the petcock when the hissing from the escaping air stops (approximately 40 seconds). After waiting 3 minutes, reopen the petcock and listen for escaping air to verify effectiveness of lockout; then reclose petcock.

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

Adopted June 6, 2005

- 4) Hydraulic System Isolation - Primary bleed-down. Manually rotate the red handle on the inlet side of the hydraulic lockout valve located at column P-5 90 degrees clockwise to isolate the machine from the central hydraulic power system (Note: when the red handle is rotated 90 degrees clockwise in this manner function pressure is automatically bled down to the system tank pressure of 100 psi). Insert a lockout device through the hole in the flange at the bottom of the red handle and the hydraulic lockout valve hasp hole and securely in place with one of your own personal padlocks. Final Bleed-down -Place a 5 gallon bucket on the floor beneath the discharge hose connected to the red quick disconnect valve which has been installed in the port leading to the flushing plug, on the outlet side of the hydraulic lockout valve. Slowly reopen the quick disconnect valve, directing the flow from the hose into the bucket until the flow stops. Close the quick disconnect valve. Wait two minutes. Slowly reopen the quick disconnect valve, watching discharge from hose to insure effectiveness of lockout then reclose quick disconnect valve.
- 5) The Machine is now locked out and in a zero mechanical state.

City of Washington
P.O. Box 296
301 C Street
Washington, KS 66968
Phone: 785.325.2284
Fax: 785.325.2678
Email: washcity@washingtonks.net

RESTORING THE MACHINE TO SERVICE

1. Check the Froofra machine and the immediate area around it to ensure that people and tools are clear and that the machine components are operation intact.
2. Verify that all the controls are in neutral.
3. Unlock and remove your Personal Padlock from the lockout device on the disconnect switch at column P-6. Remove the lockout device from the switch and hasp holes in the disconnect switch. Turn disconnect to on (closed Position) to energize all electrical components on the machine.
4. Make sure that pet cock valve at the bottom of the water trap located under the north side of the table is closed. Unlock and remove your personal lockout device from the quick throw valve handle for compressed air at column P-6. Remove the lockout device from the valve handle and the 90 degree hasp hole. Manually rotate the quick throw valve to the on position (with the valve handle in the line with the compressed air pipe) to energize all pneumatic components on the machine.
5. Make sure that the red quick disconnect, installed in the port leading to the flushing plug on the outlet side of the hydraulic lockout valve at column P-S is closed. Unlock and remove your personal padlock from the lockout device in the flange at the bottom of the red handle on the inlet side of the hydraulic lockout valve. Remove the lockout device from the handle flange and the hydraulic lockout valve hasp hole. Manually rotate the red handle on the hydraulic lockout valve 90 degrees counterclockwise to energize all hydraulic components on the machine.
6. Notify the operator that the maintenance is complete and the machine is ready for use.