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EBB-1

LOCK-OUT-TAG-OUT (LOTO) OPERATING PROCEDURE

Purpose

This document has been developed to provide employees and students of the St. James-Assiniboia School Division with information regarding lockout/tag out (LOTO) requirements. This document will inform when lock-out/tag-out procedures are required, the different employees involved in the procedure, the LOTO procedures to be used, electrically related safe work practices and employees responsibilities under division policy.

Scope

The following procedure(s) applies to all employees and students (authorized employees and students) during the maintenance, installation, and upkeep of equipment and facilities. All other employees and students (affected employees and students) shall adhere to the rules and regulations of the procedure.

Responsibility & Procedures

The energy that runs industrial equipment can be hazardous if it is not carefully controlled during servicing or maintenance. The LOTO standard covers procedures for shutting down, releasing energy types (including stored energy in capacitors or elevated machine parts), the actual LOTO procedures, verifying lockout, release of locks and tags, and re-energizing equipment. The St. James-Assiniboia School Division requires that each affected and authorized employee be trained in specific LOTO procedures. Lock out/tag out procedures are required to be used when:

1. Maintenance or servicing equipment; or
2. An employee is required to remove or bypass a guard; or
3. An employee is required to place any part of his/her body into an area of a machine or equipment where work is performed upon the material being processed (point of operation) or where a danger zone exists during the machine's operating cycle.

Minor tool changes and adjustments, and other minor servicing activities, which take place during normal operations, are not covered by LOTO procedures. These activities must be routine, repetitive, and integral to the

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use of the equipment. However, this work must be performed using alternate measures to provide effective employee protection such as machine guarding.

LOTO applies to work on cord and plug connected electrical equipment, which the exposure to a hazard is the unexpected start up of the equipment, and will be controlled by unplugging the equipment from its energy source. The plug must be “locked out” by the employee performing the maintenance on the machine. When an employee locks or tags equipment, that employee must be familiar with the types of energy the equipment uses (electrical; hydraulic; mechanical; pneumatic; air, steam, or water pressure; thermal; spring loaded; gravity; chemical; or nuclear) including types of stored energy that the machine uses. Each energy source must be isolated by closing valves, relieving trapped pressure, disconnecting circuits, or blocking/bleeding down lines. An appropriate cool-down period must be allowed.

TERMINOLOGY

What is Lock out?

Lock out is placing a lock out device on an energy-isolating device according to an established procedure after an energy source has been relieved. The lockout device insures accidental re-energizing does not occur.

What is Tag out?

Tag out is placing a tag on an energy source according to an established procedure. The tag is only a warning device indicating that the equipment must not be operated until the authorized employee removes the tags. Tags do not provide the same level of protection that locks do. “Tag out” is used only in conjunction with “lock out”.

Who is an Authorized Employee?

An Authorized employee is defined as -“An employee or student who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.” All authorized LOTO employees will be trained under the direction of the Director, Facilities and Operations or his/her designate in the following areas:

- 1) Rules for mechanical LOTO
- 2) Specific rules for Locks and Tags
- 3) LOTO Procedures
- 4) Rules for electrical LOTO

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RULES FOR MECHANICAL LOTO:

- 1) A machine shut down for repair, cleaning, or inspection must have all power switched and locked in the "OFF" position by each employee working on that equipment.
- 2) Each employee who services or maintains machinery and equipment shall be issued a lock and a tag prior to starting each job.

SPECIFIC RULES FOR LOCKS AND TAGS:

- 1) The lock or tag must identify the name of the employee applying the lock or tag.
- 2) These locks and tags may not be used for any other purpose other than LOTO.
- 3) The LOTO devices must be durable and constructed and printed to withstand wet and corrosive locations. The lockout devices must be substantial enough to prevent removal without the use of excessive force (such as bolt cutters).
- 4) Only one form of lock and tag (of the same color, shape, size, print, and format) shall be used at the facility.
- 5) During lockout, employees must keep their keys in their immediate possession. Master keys are not permitted.
- 6) The maintenance department may keep a duplicate key in a secure location. The tag and its means of attachment shall be substantial enough to prevent inadvertent or accidental removal.
- 7) The attachment means shall be of a non-reusable type, attached by hand and self-locking-such as one-piece, all-environment-tolerant nylon cable tie.

LOTO PROCEDURES:

- 1) Notify affected employee that LOTO procedures are going to be used and the reason for the procedure use.
- 2) The authorized employee will know the type(s) and magnitude(s) of energy; the hazards of the energy; and the method(s) to control the energy. If the authorized employee is uncertain of any of this information, the employee must review the energy control procedure for that piece of machinery or equipment.
- 3) Shut down the machine or equipment by normal stopping procedures (depress stop button, open toggle switch, etc.)
- 4) Tag out cannot be used if the machine or equipment is capable of being locked out. If the lockout is not possible, a tag must be securely fastened

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to each energy-isolating device to indicate that the machine or equipment may not be operated until the tag is removed. The employee who attaches the tag must verify that the machine or equipment has been turned off before starting work.

- 5) If tag out is used, additional methods of preventing accidental energizing must be used if feasible (eg. removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, removal of valve handle).
- 6) Apply locks and tags to each energy-isolating device, isolating energy sources. Tags must note the employee's name and the service date. Each employee must install a lock and tag on the equipment to be serviced.
- 7) All stored and residual energy must be relieved, disconnected, restrained, and otherwise rendered safe.
- 8) Verify that the main disconnect or circuit breaker cannot be moved. Press all start buttons and activating controls on equipment to make sure all power is disconnected.
- 9) If it is possible that stored energy will re-accumulate to a hazardous level, the authorized employee will repeat the certification process until servicing or maintenance is completed.
- 10) Avoid tasks that could reactivate the equipment.
- 11) Do not bypass locks or tags when putting in new piping or wiring.

REMOVING LOTO

- 1) Remove all tools from the work area, reattach guards taken off, and make sure the machine or equipment is safe to operate.
- 2) Inform all affected employees that lock(s) and tag(s) are being removed. Check to ensure all employees are safely positioned or removed from the area.
- 3) Verify controls are in neutral.
- 4) Remove lock(s) and tag(s) and re-energize equipment.
- 5) Notify affected employees that the servicing is completed and the machine or equipment is ready for use.

RULES FOR ELECTRICAL LOTO:

All mechanical LOTO procedures still apply plus the following:

- 1) All sources of energy must be completely disconnected, including auxiliary power supplies (batteries, generators, etc.). Also dissipate any

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- stored energy present (capacitors).
- 2) Push button selector switches, interlocks, and other control devices may not be used as the sole means for isolating energy.
 - 3) Clear the work area of all unqualified personnel.
 - 4) LOTO every point where the equipment could be re-energized.
 - 5) If a lock cannot be used, use a tag, providing at least one safety precaution equivalent to a lock (eg. removal of fuses, blocking switches, and removal of circuit breakers.)
 - 6) A qualified employee must verify that equipment is inoperable by attempting to restart it using equipment's on/off controls or by using test equipment (voltmeters, circuit testers, etc.).
 - 7) After electrical work is completed and before re-energizing equipment, a qualified employee must conduct tests, using test equipment, and make visual inspection to verify the following:
 - a. That work is completed properly
 - b. That there are no shorts or grounds.
 - c. That all tools, electrical jumpers and other such devices have been removed, so that the equipment may safely re-energized.
 - 8) Only the worker who applies the lock/tag is permitted to remove it. In an emergency, locks may be removed with the consent of a supervisor. The supervisor must then inform the worker that the lock was removed before the worker comes back to work.
 - 9) After LOTO is removed a qualified employee must conduct a thorough safety inspection of the work area, warn others to stay clear, and then energize the machine according to the prescribed sequence under the proper LOTO procedures.

COMPLIANCE WITH PROGRAM:

- 1) All employees are required to comply with the restrictions and limitations imposed upon them during the use of LOTO. Non-compliance would be considered a serious violation in the discipline system.
- 2) The authorized employees are required to perform the LOTO in accordance with this procedure.
- 3) In no case shall any employee remove another employee's LOTO device.
- 4) All employees, upon observing a machine or piece of equipment which is "locked out" or "tagged out" to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment.

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TRAINING:

The St. James-Assiniboia School Division Director, Facilities and Operations or designate and Industrial Arts/Technical Vocational Instructors shall provide training to ensure that both the purpose and function of this LOTO document are understood by all employees (and students in the case of Industrial Arts/Technical Vocational Instructors) and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees and students. The training shall include the following:

- 1) Each "Authorized" employee/student shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- 2) All other Employees/students whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

Where tag-out systems are used, employees shall be trained in the following limitations of tags:

- 1) Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by lock.
- 2) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.
- 3) Tags must be legible and understandable by all authorized employees/students, affected employees/students, and all other employees/students whose work operations are or may be in the area in order to be effective.
- 4) Tags and their means of attachment must be made of materials, which will withstand the environmental conditions encountered in the workplace.
- 5) Tags may evoke a false sense of security and their meaning needs to be understood as part of the overall energy control program.
- 6) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

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RETRAINING

Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedure.

Additional retraining shall be conducted whenever a periodic inspection under Section "Compliance with Program" of this Plan reveals, or whenever The St. James-Assiniboia School Division has reason to believe, that there are deviations from, or inadequacies in the employee's knowledge, or use of the energy control procedures.

The training shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

CERTIFICATION

The St. James-Assiniboia School Division Director, Facilities and Operations or his/her designate and Industrial Arts/Technical Vocational instructors (in the case of students) shall certify that training has been accomplished and is being kept up to date. The certification shall contain each employee or student name and date of training.

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