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| Date Revised: | March 2020 | Overall Task Risk Rating: B |
| Description: | Lock-Out Tag-Out procedures shall be employed to achieve Zero Energy by neutralizing all potential sources of energy or power in the equipment/ machinery to be worked on and to prevent inadvertent or unauthorised re-energization. No part of the equipment should be capable of inadvertent activation or movement, which may lead to injury. Removing a fuse, closing a valve or turning a switch is not an acceptable isolation from the energy source. | |
| Location(s): | Shop, Asphalt Plant and Construction Projects | |
| Associated Documents: Equipment and Machinery Operation WTS, Equipment Repairs (Blocking) WTS, Noise WTS | | |

RED FLAGS (HOLD WORK UNTIL CORRECTED):

Note:

- Do not work on any equipment / vehicles / electrical devices while it is in operation or energized – ensure to follow LO-TO Practices
- Test the operation switches to verify that the equipment cannot be restarted, if lockout has not occurred, do not proceed

PERSONAL PROTECTIVE EQUIPMENT (CSA APPROVED)

| | | | | | | | | | |
|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | | | | | | |
| Head Protection | Foot Protection | High-Vis Protection | Hearing Protection | Hand Protection | Eye Protection | Respiratory Protection | Skin Protection | Face Protection | Fall Protection |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Note:

- When in the Shop one must adhere to the minimum Shop PPE Requirements: Safety Boots
- When onsite one must adhere to the minimum site requirements (i.e. Safety Boots, Hard Hat & High Visibility Protection. Safety Glasses and hearing protection when necessary)
- If it is an electrical system that is being locked out, additional PPE may be required (i.e. electrically insulated gloves, arc-flash PPE, etc.)

SAFE WORK PRACTICES (SWP)

General Lock-out Tag-out Practices:

- Lock-out Tag-out is the responsibility of the mechanics and trained workers servicing the equipment
- Prior to performing any maintenance or repairs on electrical equipment, authorization must be maintained and Lock-out procedures followed to ensure de-energization of actual or potential sources of energy
- Be aware of all potential energy sources: hydraulic, electrical, chemical, pneumatic, gravitational, radiation, thermal, stored, mechanical
- Only trained and authorized personnel are to perform Lock-out Tag-out
- All tools, devices and equipment, including personal protective equipment, that are used for working on or near energized exposed parts of electrical devices, must be designed, tested, maintained and used appropriately
- Only one key per lock is available and used

TAGS (Shall):

- Be made of non-conducting material
- Be secured to prevent inadvertent removal
- Be placed, conspicuously, at the location of the operation switch and at Lock-out devices
- State the reason for the Lock-out Tag-out
- Show the name of the person responsible for the Lock-out Tag-out
- Show the date on which the lock was put in place



Removal of Locks:

- The worker who locks-out the machine/equipment is the only person who is permitted to remove the tag when the task is complete



- Under no circumstances shall a worker remove any lock and tag, other than their own
- Do not share or loan out Lock-out Tag-out Keys

Inspections:

- Verify Zero-Energy - test operation switches to verify that the equipment cannot be restarted, if lockout has not occurred, do not proceed
- Any identified defective electrical equipment and tools that may pose a hazard shall be immediately disconnected, removed from service and tagged as being defective
- All electrical equipment must be approved for its intended use and shall be of a type and rating approved for the specific purpose for which it is to be used

Training:

- Employee Orientations (including roles, responsibilities, applicable workplace task standards, WHMIS, etc.)
- Electrical work may only be performed by competent/ qualified workers
- Certified mechanics are to conduct work that required lockout and tagout
- Only trained, authorized personnel are allowed to operate machinery or equipment
- Only trained, authorized personnel are allowed to perform maintenance / repairs

Personal Protective Equipment:

- Workers on construction projects must wear, at a minimum, head, foot and high visibility protection. Eye and face protection when necessary
- Eye protection is required when completing tasks that may cause debris / objects to dislodge or become airborne

| JOB HAZARD AND RISK ANALYSIS | | RISK RATING SYSTEM | A |
|---|--|--------------------|---|
| | | | High risk of injury or equipment / property damage. |
| | | B | Medium risk of injury or equipment / property damage. |
| | | C | Low risk of injury or equipment / property damage. |
| TASK HAZARDS | TASK CONTROLS | RATING | |
| <ul style="list-style-type: none"> • Lack of Communication & Signs | <ul style="list-style-type: none"> • Lock-out Tag-out tags shall be placed, conspicuously, at the location of the operation switch and the Lock-out devices | C | |
| <ul style="list-style-type: none"> • Lack of Training | <ul style="list-style-type: none"> • Worker orientation includes electrical awareness and Lock-out Tag-out awareness training • Only trained and authorized workers shall perform Lock-out Tag-out procedures • Ensure workers performing work on electrical components, have their trade certification | C | |
| <ul style="list-style-type: none"> • Inadvertent Energization | <ul style="list-style-type: none"> • Workers shall not remove locks or tags, other than their own | B | |
| <ul style="list-style-type: none"> • Electrocutation | <ul style="list-style-type: none"> • All energy containing devices, must be Locked-out and Tagged-out prior commencing the task • Removing a fuse, closing a valve or turning a switch is not an acceptable isolation from the energy source | B | |
| <ul style="list-style-type: none"> • Arc-Flash | <ul style="list-style-type: none"> • Workers de-energizing sources of electrical energy, must wear the appropriate arc-flash PPE rated for the appropriate arc-flash hazard rating/level | B | |
| <ul style="list-style-type: none"> • Stored Energy | <ul style="list-style-type: none"> • Ensure all sources of hazardous energy are de-energized, and that all remaining energy has been discharged • Test de-energized sources of hazardous energy prior to commencing the task | B | |
| <ul style="list-style-type: none"> • Struck-by / Crushed-by Object | <ul style="list-style-type: none"> • No part of the equipment should be capable of inadvertent movement which may lead to personal injury | B | |
| <ul style="list-style-type: none"> • Lack of Testing | <ul style="list-style-type: none"> • Verify Zero-Energy, test the operation switches and verify that the equipment cannot be restarted, if lockout has not occurred, do not proceed | C | |

SAFE JOB PROCEDURES (SJP)**Pre-Task Commencement:**

1. Gather and wear the required PPE for the task - on construction sites, all must wear head, foot and high visibility protection
2. Eye protection and or Face protection is required when completing tasks that may cause debris / objects to dislodge or become airborne
3. Ensure the site-specific workplace violence assessment is complete
4. Complete the Daily GAZZ Card and review with all workers the shift's tasks with any associated hazards and control strategies
5. Ensure all workers understand the GAZZ Card contents, and sign off in acknowledgement
6. Ensure controls are in place prior to commencing work so risks are mitigated / eliminated
7. Determine what equipment / machinery / tools and material, are required for the completion of the task
8. Inspect all equipment / machinery / tools prior to use and document the inspections on appropriate forms when required
9. Ensure preventative maintenance activities have been completed where required, prior to using equipment / machinery / tools
10. If equipment / machinery / tools are observed to be damaged, remove it from use and notify the Foreman / Superintendent
11. Determine devices/components that requires de-energization
12. Inform necessary device/component owners and stakeholders of lockout and tagout activities and wait for approval, when required
13. Ensure qualified workers are present to conduct lockout and tagout procedures

During Task:

1. Attention shall be given to control circuits, as they may be energized from a different power source
2. Place disconnected device in the OFF position and test for potential energization
 - If it a mobile piece of equipment, use the chocks to ensure no inadvertent movement
 - If applicable, shut off air supply, release residual air pressure, remove the hose
 - Lockout gas, steam, or other valves at the point of operation and open others to bleed off residual pressure
 - Drain or bleed off hydraulic lines
 - Block or otherwise immobilize gravity devices and mechanisms under tension or pressure such as rams, springs or fly wheels
3. Install appropriate locking devices
4. Verify Zero-Energy - test operation switches to verify that the equipment cannot be restarted, if lockout has not occurred, do not proceed
5. Certified mechanics are to conduct work that required lockout and tagout
6. Remove all lockout and tagout devices (locks, tags, blocks, chains, etc.) once work is completed, and the equipment is inspected/safe
7. Lockout and tagout devices are only to be removed by the worker who installed them
8. Re-energize equipment as applicable and have the operator test run the equipment to ensure that everything is working properly

Abandoned Lock Removal Procedure:

1. Contact the lock owner (or their Foreman / Superintendent)
2. The Foreman / Superintendent must confirm that the Lock Owner is either no longer at the facility or has misplaced the key to the lock
3. If the Lock Owner cannot be located, an inspection must be completed by a qualified person(s) and the Foreman / Superintendent before any attempt is made to remove the lock
4. A Worker Health and Safety Representative should be informed of the abandoned lock and be consulted with throughout the process
5. The lock may only be removed after a consensus has been reached between all parties that it is safe to do so

All actions must be documented

Task Completion:

1. Ensure all equipment / machinery / tools are maintained and stored appropriately in the designated locations
2. Implement any housekeeping or maintenance as required