



STANDARD PROCEDURE INSTRUCTION

Title		SPI
Standard Practice for Lock and Tag		#34-27
Department	Supersedes SPI Dated	Effective Date
Safety, Health and Environment	Jan 19, 2016	Jan 2, 2019

Standard Practice for Lock and Tag

1. PURPOSE

To provide a standard practice to be followed when working with equipment which requires isolation, locking, tagging, and checking to prevent injury resulting from the unexpected movement of the equipment or the unexpected release of energy.

2. SCOPE

This policy applies to all people working for Vale's Manitoba Operations, including contractors. This policy applies at all Vale Manitoba Operation properties and where work is being conducted under the authority of Vale's Manitoba Operations, Including work done for Vale Technology Development (Canada) Limited in Manitoba.

3. ADMINISTRATION

Revisions to this SPI shall be reviewed by the Vale Manitoba Electrical Standard Practices Committee, the SPI Steering Team and approved by the Manitoba Operations Vice-President prior to implementation.

Copies of procedures for specific pieces of equipment developed by individual operating areas are to be filed on the local websites for each plant.

4. DEFINITIONS

- **Authorized** – A person who has been given permission to perform the task.
- **De-energized** – Disconnected from all energy sources and not containing residual or stored energy.
- **Device** – A device is a piece of equipment or a mechanism designed to serve a special purpose or perform a special function.
- **Energy Isolating Device** – A mechanical device that physically prevents the transmission or release of energy. (i.e. disconnect switches, valves, spades, blocks, etc...)
- **Energy Source** – Any source of energy such as; electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravity, pressurized flow material or other stored energy.
- **Equipment** – Any machine driven by electricity or any other prime mover and/or combination of machines that operates as a system/process. Such as pumps, fans, electric motors, mobile machines, vessels, piping, valves, etc.



- **Hand- Off-Auto Selector** – a device used to select whether equipment is to operate in a hand (manual) or automatic mode.
- **Incident Energy** – The amount of energy impressed on a surface a certain distance from the source, generated during an electrical event.
- **Isolate** – To introduce any number of approved physical barriers between the equipment and all sources or forms of energy and/or process material.
- **Isolation Equipment Operator** - A qualified person who operates the energy isolation device(s). (i.e. controls/valves/etc...)
 - **Is accountable for**
 - Safely operating the energy isolation device(s)
 - Giving permission to lock and tag, once the energy is isolated and de-energized.
 - Informing tagger(s) of other isolation device(s) or procedures to be followed, to ensure a de-energized state.
 - Returning isolating device(s) to operating status once all tags and locks are removed.
- **Lock Box Administrator** - Has primary responsibility for implementation and coordination of the lockout of hazardous energy sources (Group lockout).
- **Lock Extender** – a device which provides a means of adding additional personal protection locks.
- **Lockout Device** – A mechanical means of locking an energy isolation device using a personal protection lock.
- **Personal Protection Lock** – a uniquely keyed lock, having only one key, used to protect an individual while working on or near equipment.
- **Prime mover** – a device which uses energy to put equipment into motion, such as an electric motor, internal combustion engine, or air tugger.
- **Qualified** – A competent person designated by his/her employer as qualified because of knowledge, training and experience to safely perform an assigned task.
- **Restraint** – a device used to prevent the energy stored in a mechanical system from releasing and causing equipment motion, for the protection of personnel working on or near the equipment.
- **Start/Stop Station** – a device used for starting or stopping electrical equipment.
- **Switch** – a device for opening or closing an electrical circuit. For lock and tag purposes a breaker operating handle or lever may be considered a switch.
- **Tagger** – the person who has tagged a piece of equipment.
- **Temporary Protective Grounds** – Wires or cables used to temporarily connect the electrical conductors of a circuit to ground, for the protection of personnel working on or near the conductors.



- **Valve** – a device for opening or closing a pneumatic, hydraulic, gas, process, or service line.

5. GENERAL

5.1 General Instructions

Never operate equipment which is tagged out with a personal protective tag. The tag identifies to others that you would be in danger if someone were to restore energy to the equipment.

Equipment Status Tags can be removed by anyone who is knowledgeable of the status of the equipment, knowledgeable of how operating the equipment will affect the plant and have been authorized by their supervisor to do so.

Equipment tagged with an Equipment Status Tag may be operated within the confines of the information provided on the tag, when authorized by a Supervisor to do so.

- a) Locking and tagging of equipment at a control mechanism is not acceptable because it puts personnel at risk of injury. Equipment must be isolated from its source of energy. For example, an electric motor cannot be electrically isolated at its start/stop station.
- b) To isolate high voltage equipment (greater than 750 volts AC or 300 volts DC) specific training and authorization is required, and in some cases specific procedures must be followed. Only Isolation Equipment Operators with specific training and authorization may operate high voltage equipment.
- c) An alternate means of isolating equipment must be used in cases where a personal protection lock cannot be applied. For example, if a locking device cannot be installed on a breaker in a lighting panel then an Electrician can isolate the equipment by disconnecting the wire at the breaker.
- d) Qualified personnel working on equipment for the purpose of supply verification, equipment commissioning, operational testing, and troubleshooting are not required to isolate, lock, tag and check equipment for that work. Personnel engaged in these activities must ensure they are protected from all hazards by following safe work practices and using appropriate PPE. In the case of switches at 600 volts or lower, proper PPE includes hard hat with available hearing protection, safety glasses, steel toed boots with metatarsal guards, and clothing that does not



melt (ie. not polyester). All switches above 600 volts are to be operated by qualified electrical personnel.

5.2 Types of Tags

There are five different types of tags.

a) The "**Personal Protection**" tag.



This is a **red danger tag**. The tag is for your protection while you are working on, or near, equipment which is a hazard. The tag identifies to others that you would be in danger if someone were to restore energy to the equipment. Every individual must ensure his or her own safety by applying their own Personal Protection Lock and Personal Protection tag. This lock and tag must be removed by you, the Tagger, when you've finished working on the equipment for the day. This is necessary because you no longer require protection and failure to remove your lock and tag will be an inconvenience to others.

If you've left work without removing your lock and tag then someone will attempt to contact you to have them removed before the equipment can be operated. A supervisor will have to be contacted if you cannot be reached. The supervisor will then have to determine if your lock and tag can be removed by physically checking that you are not in the area of the equipment.

Never remove someone else's Personal Protection Lock and Personal Protection tag unless you have the authority to do so. By removing someone else's lock and tag you could be putting them in danger.



b) The "Equipment Status" tag.



This is a **white caution tag**. It's used to indicate equipment is not suitable for operation and may create a hazard if operated. Examples are equipment which is broken down or equipment which is not fully installed. Equipment Status Tags are not used for personal protection. Personal Protection Locks are not used with these tags.

Checking the equipment after isolation to ensure it won't start or move isn't required. If the equipment is not suitable for operation then trying to start it may cause a hazard or equipment damage.

Equipment Status Tags can be removed by anyone who is knowledgeable of the status of the equipment, knowledgeable of how operating the equipment will affect the plant and have received authorization from the supervisor. Examples of personnel who may remove Equipment Status Tags are the Tagger, the Tagger's supervisor, operational supervision for the area, anyone authorized by the tagger's supervisor or co-workers who will be repairing the equipment.

Removal of an Equipment Status Tag without knowledge of the status of the equipment may create a hazard, putting people at **risk** of injury. Leaving inoperable equipment untagged also creates a **risk**.



c) The "**Manager's Hold**" tag.



This is a **red and white striped danger tag**. The tag serves the same purpose as the Equipment Status Tag - to indicate equipment is not suitable for operation and may create a hazard if operated. The tag is not used for personal protection.

The tag is intended to be used when specific personal knowledge of equipment or Work status is required before the tag is removed. An example might be a Maintenance supervisor coordinating a long-term multi-trade rebuild of machinery. The tag may be applied by anyone in such a position.

The difference from an Equipment Status Tag is:

- The tag requires the written approval of the plant Manager or acting Manager; and
- The Tagger applies a Personal Protection Lock with the tag; and
- The tag can only be removed by the Tagger or the Manager (or acting Manager) in the Tagger's absence.

d) The "**Equipment Grounded**" tag.



This is a **green danger Tag** used to indicate that there is a set of Temporary Protective Grounds installed on the piece of equipment, machinery, or apparatus.

The Equipment Grounded tag shall be applied at the point of isolation and at any and all locations where the supply conductors are grounded or where Temporary Protective Grounds are applied.



Equipment Grounded tags must be applied at the time the Temporary Protective Grounds are installed.

Equipment Grounded tags shall be placed in a location that is readily visible, (not requiring a door to be open).

The information indicated on the front of the tag shall be completed in full by the Electrician applying the tag.

When more than one Temporary Protective Ground is installed a Lock Box Administrator shall be selected and a lock box form filled out.

Equipment Grounded tags may be removed only after Temporary Protective Grounds have been removed.

Equipment Grounded tags may be removed by any Electrician only after that Electrician has:

- Fully and personally inspected the electrical system downstream of the point of isolation to ensure that no Temporary Protective Grounds remain on the system; and
- The insulation resistance of the feeder conductors between the point of isolation and the load have been “Meggered” (phase to ground) as final confirmation that all grounds have been removed.

e) The “Blue Commissioning” tag



This is a blue tag, used in conjunction with any other applicable tag required within this SPI, for the purposes of identifying the completion of newly installed equipment that has been turned over to the Vale Commissioning Team.

Once all installation, inspections, testing and quality checks on the newly installed equipment is completed and the Vale Commissioning Team has assumed care and control, the blue tag will be installed on the equipment and signify two (2) things;

1. That the equipment is to be considered Live but Not Ready For Operation as equipment is still in testing phases, and
2. If any equipment identified by a blue tag needs to be accessed by anyone outside of the Vale Commissioning Team, they must request permission from the commissioning group, via a permit to work document, prior to accessing the equipment.



Prior to starting the commissioning, the Commissioning manager will issue a Commissioning Boundary Notice to inform all personnel that commissioning activities will take place and where.

Anyone that works within or adjacent to a Commissioning Boundary must know what part of the system is charged and the isolation point(s).

Commissioning will use BLUE surveyor tape and/or BLUE chain to identify what side of an isolation is charged. If it is unclear what part of the system is charged, the person is to contact a member of the Commissioning team for clarification.

If barrier tape is used to restrict access to a Commissioning Boundary then only plastic yellow tape, preprinted with the wording "AUTHORIZED PERSONNEL ONLY", is to be used. If rope or chain is used in place of the plastic yellow tape it will be accompanied by "AUTHORIZED PERSONNEL ONLY" signs with all information required as per SPI 34-24.

5.3 Locks, Lock Extenders, and Tags

- a) Personal Protection Locks do not have a master key. Your key must be the only one in existence for your lock.
- b) When your Personal Protection Lock is used keep the key in your possession.
- c) Lock boxes or lock extenders may be used when more than one person is locking equipment out for personal protection. Each person requiring protection must apply their own lock and tag.
- d) Use a Lock Extender when there is only one position remaining on the equipment's locking mechanism for the attachment of a personal protection lock, and an additional personal protection lock to be attached. The lock extender will allow additional workers to attach their personal protection locks.
- e) Lock Extenders must be attached directly to the equipment's locking mechanism or another Lock Extender in such a way that the equipment cannot be operated without first removing all Personal Protection Locks and Lock Extenders.
- f) All Tags must be securely attached so they will not fall or be blown off.
- g) All information written on tags must be clear and legible.



5.4 Group Lockout

Should be considered for multiple taggers, devices, or work groups. Each energy isolating device can itself be secured by a single lockout under the following conditions:

- a) A Lock Box Administrator is selected for implementation and coordination of the lockout of hazardous energy sources; and
- b) The Lock Box Administrator coordinates with equipment operators before and after completion of servicing and maintenance operations that require lockout; and
- c) Each tagger required to perform work under the established isolation has the right to verify individually that the hazardous energy has been isolated and/or de-energized; and
- d) No one is allowed to sign on or off for another person or attach or remove another person's lockout device unless the provisions of an approved lock removal procedure have been met; and
- e) The lock box procedure is followed.

5.5 Lock Box Procedure

- a) Identify the Lock Box Administrator.
- b) Identify all sources of energy and energy isolating devices to be locked and tagged
- c) The Lock Box Administrator will fill out a lock box form and attach it to the lock box.
- d) The Lock Box Administrator will get authorization from the person in charge of the equipment or process.
- e) The Lock Box Administrator will have an Isolation Equipment Operator that is familiar with the equipment, isolate all identified energy isolating devices, apply locks, tags provided by the Lock Box Administrator and verify de-energized state of all equipment. Using the appropriate safe work practices and PPE.
- f) The keys will be placed in a lock box and a lock placed on the box. The key will remain in the possession of the Lock Box Administrator. If the lockout is to last



longer than one shift then a Manager's hold tag and lock will be attached to the lock box.

- g)** If required Temporary Protective Grounds shall be installed. The location of all installed Temporary Protective Grounds shall be indicated on the lock box form.
- h)** If more than one shift is involved in the outage a Lock Box Administrator will be identified for the other shift and the key will be handed to that Lock Box Administrator when they are on shift. It will be identified on the lock box form, which Lock Box Administrator is on shift.
- i)** Anyone working on the equipment will place their personal protection lock and personal protection tag on the lock box, including the Lock Box Administrator if he or she is working on the equipment.
- j)** Anyone working on the equipment shall inspect all energy isolating devices as listed on the lock box form to ensure that the energy isolating devices are all isolated, locked, tagged, and verified de-energized. Prior to verified de-energized check, ensure that all involved personnel are notified of verified de-energized hazards. Once the all clear is received, the verified de-energized check can be performed. Notify all involved personnel once the check is complete.
- k)** At the end of their work shift all personnel using the lock box will remove their personal protection lock and tag.
- l)** If the work is not complete an equipment status tag will be attached to the lock box indicating the work will continue on their next shift.
- m)** If the work is complete, and all the personal protection locks have been removed from the lock box, the Lock Box Administrator will, with the approval of the area Manager or their designate, remove the lock with the Managers Hold Tag and then remove the locks and tags from the energy isolating devices.
- n)** The Lock Box Administrator will notify the person in charge of the equipment or process that the status of the isolating devices will change, before the devices are placed into their normal operating position.
- o)** The Isolation Equipment Operator will then place the devices in their normal operating position, using the appropriate PPE.



Lock Box Form

Lock Box Form

Date:				
Description of work:				
Location:				
Energy isolating devices				
#	Identification #	Type of device	Equipment Name	Location of energy isolating device
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Location of Grounds		Date Installed		Date Removed
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Method(s) used to verify isolation:				
Lock box administrator:				Date:



5.6 Removing a Lock

- a) No person may remove a lock from locked out machinery unless the person is the worker who installed the lock; or
- b) The Worker leaves the property and doesn't remove their lock & tag , they will be contacted and asked to return and remove their Lock & Tag; or
- c) A sweep of the work area for the workers is conducted including a check of the appropriate Dry and security gate to verify the worker is not in the work area; or
- d) Every attempt to contact them is unsuccessful or they cannot reasonably return to site then. The Supervisor under the direction of a Superintendent of the Tagger's department can remove a Taggers lock & tag once they have proven that removing the Lock & Tag will not create a hazard to other employees; and
- e) The Tagger shall be notified before returning to work that the lock & tag have been removed; and
- f) The lockout devices and tags shall be removed with a witness present and returned to the tagger by the individual responsible for the removal.

6. ELECTRICAL EQUIPMENT

6.1 Purpose

This part defines the requirements to ensure electrically powered equipment will not be able to start or release electrical energy. This applies to all electrically powered equipment, regardless of voltage.

6.2 Exemptions

For some specific equipment, Special procedures have been prepared. Refer to the specific departmental web site for these procedures.

6.3 General

Only Isolation Equipment Operators may operate switches. Lighting panel load breakers at 240 volts or less may be operated by anyone working under the authority of Vale Manitoba Operations.



Request the assistance of an Isolation Equipment Operator if you are not authorized to operate a switch.

6.4 Standard Practice for Isolating Equipment

- a) Identify the name and number of the equipment to be isolated. Equipment identification will be posted at the Prime Mover. The information is required to ensure the correct switch is used to isolate the equipment. Workers will be at risk if the wrong equipment is isolated.
- b) Ensure the equipment is not operating. If the equipment is operating then it must be stopped. Notify operating personnel that the equipment will be taken out of service, and request their approval if it will affect operations.
Opening switches while equipment is running, and especially when equipment is starting, will cause unnecessary wear to the switch. Given unusual circumstances the switch may fail catastrophically, creating the potential for injury to anyone near the switch.
- c) Put the Hand-Off-Auto Selector (if there is one) in the off position, or defeat automatic starting by other means, to prevent the equipment from starting while it's being isolated. Tag the selector with a Personal Protection Tag to ensure the automatic controls remain disabled.
- d) Tag any and all field Start/Stop Station(s) with a Personal Protection Tag. This will prevent other people from starting the equipment while it is being isolated.

Note: Where the switch and the Stop Start Station are within control of the Isolation Equipment Operator (ie. At a panel that contains the switch and the Start Stop Station), placing a Personal Protection Lock and Tag on the switch is acceptable. A tag on the Start Stop Station or the Hand-Off-Auto selector switch is not required in this case.

- e) Go to the switch which will be used to isolate the equipment. Confirm the equipment name and number on the switch, matches the identification found at the Prime Mover.
- f) If the identification matches then proceed to open the switch wearing the appropriate PPE. The approved manner to open a switch is:
 - Turn the Hand-Off-Auto Selector to the off position and press the stop pushbutton, if one exists at the switch. This is a final check to make sure the equipment isn't running.



- Stand to one side of the switch in a position which doesn't require you to reach across the door of the switch to operate the handle. Turn your face and body away from the switch. This position will minimize injuries should there be a catastrophic failure of the switch as it is opened. Move the switch operating handle to it's off position.
- g) Apply a lock if the equipment has been isolated for the protection of personnel. Try to close the switch. This will ensure the lock has been applied correctly and is holding the switch open.
 - h) Tag the switch with the type of tag required for your particular situation.
 - i) If equipment has been isolated for personnel protection return to the Hand-Off-Auto or Start/Stop Station(s). With the Hand-Off-Auto Selector in the hand (manual) position, try to start the equipment. If the equipment doesn't start, return the Hand-Off-Auto selector switch to the off position. You can then proceed with your work. If the equipment starts, do not work on the equipment. Immediately notify supervision of the incident.
 - j) Carefully inspect the equipment to be worked on to determine if any other hazards need to be isolated to make your work area safe. Isolate, Lock and Tag these hazards.

6.5 Returning Equipment to Service

- a) Inform operational personnel that the equipment is being returned to service.
- b) Check that all work mates are clear and the equipment is ready for service.
- c) Confirm the equipment name and number at the Prime Mover is the same as the equipment name and number at the switch.
- d) Remove your lock and tag at the switch. If there are locks and tags on the equipment which you are not authorized to remove then the equipment cannot be returned to service until these locks and tags are removed by authorized personnel.
- e) The switch may now be closed, using the appropriate PPE for the incident energy level of the switch. The approved manner to close a switch is:



- Ensure the Hand-Off-Auto Selector is in the off position and press the stop pushbutton, if one exists at the switch. This is a final check to ensure the equipment will not start as the switch closes.
 - Stand to one side of the switch in a position which does not require you to reach across the door of the switch to operate the handle. Turn your face and body away from the switch. This position will minimize injuries should there be a catastrophic failure of the switch as it is closed. Move the switch operating handle to its “On” or “Closed” position.
- f) Remove all tags which had been placed at Hand-Off-Auto Selectors and Start/Stop Stations. If equipment is being returned to service then selectors must be returned to their normal operating position.

6.6 Special Requirements for Electrical Work

- a) Personnel performing electrical work must use the appropriate PPE for the incident energy level of the switch.
- b) Personnel performing electrical work shall visually confirm (where possible) that each switch blade or breaker contact is open, and use voltage testers to test for energized conductors, to ensure power has been removed from all conductors before anyone works on or near the electrical conductors.
- c) Temporary protective grounding equipment shall be installed on the conductors of all circuits which are a potential source of energy if electrical work is to be done on, or near, electrical conductors operating above 750 volts. The grounds must be installed before work on conductors begins.
- d) An Equipment Grounded tag shall be placed at the switch indicating Temporary protective grounding equipment is in use and identify the location of the Temporary protective grounding equipment. Also tag the Temporary protective grounding equipment.
- e) If Temporary protective grounding equipment is to remain installed for more than one shift then the grounds shall be checked each shift before work starts.



6.7 Temporary Protective Grounds

- a) Temporary protective grounding equipment shall be placed in such locations and arranged in a manner that prevents every worker from being exposed to hazardous differences in electrical potential.
- b) Temporary protective grounding equipment shall be capable of conducting the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault.
- c) Temporary protective grounding equipment shall be installed between all energy sources and where the worker will be working.
- d) Temporary protective grounding equipment shall meet the requirements of CAN/ULC-D61230 or ASTM F855.
- e) Temporary protective grounding equipment shall have an impedance low enough to cause operation of protective devices in case of accidental energizing of the electric conductors or circuit parts.
- f) Temporary Protective Grounds and Equipment Grounded Tags shall be installed on all high voltage equipment before inspection, cleaning, maintenance, service, or non-routine adjustment work begins.
- g) Temporary Protective Grounds and Equipment Grounded Tags shall be installed or removed only by an Electrician.
- h) The process to follow for installing grounds is:
 - After the equipment to be grounded are Isolated, Locked, Tagged, and Tested using the appropriate PPE, the Temporary Protective Grounds can be installed between all energy sources and where the worker will be working.
 - Starting with attaching the ground cluster to ground first then to each phase, using a hot stick or shotgun if accessible, if not then hot gloves shall be used. This is a precaution in case there is induction in the line.
 - Removing is the same process in reverse, each phase first then the ground last.



7. MECHANICAL EQUIPMENT AND SYSTEMS

7.1 Purpose

- a) This part defines standard practices which ensure mechanical equipment and systems will not be able to move or release energy. These standard practices are applicable to all pneumatic and hydraulic powered equipment, regardless of operating pressure.
- b) Mechanical equipment means any equipment, machinery or apparatus where the energy to operate the equipment is derived from non-electrical sources.
- c) Mechanical equipment includes equipment used for the transmission of non-electrical services or the transport of materials.
- d) For some specific equipment, Special procedures have been prepared. Refer to the specific departmental web site for these procedures.

7.2 Standard Practices

- a) All equipment which could cause a hazard to personnel, or damage if operated. Shall be closed or placed into a safe position, locked, tagged and checked. This includes valves, service lines, gates, doors, chutes, etc...
- b) Restraints, valve lockout covers, or similar locking devices shall be installed to secure equipment in a safe position and shall be Locked and Tagged. All blocking valves shall be locked in the closed position and all bleed valves in the open position.

Particular care is required when isolating pressurized systems or equipment which incorporates stored energy devices. Some examples are pressurized service lines, system headers, air receivers, accumulators, tanks, and charged springs. Ensure the pressure or stored energy is released, or isolated, prior to working on the equipment. Pressurized systems shall have the pressure bled off between the isolation device and the work area prior to starting work on the system. Options "A", "B", and "C" below shall be considered prior to using options "D" and "E". If "D" and/or "E" must be used, a special procedure must be developed jointly using a risk assessment approach including the Departmental Co-Chairs, people performing the task, and other resources as required.

- a) "Double Block and Bleed"
- b) "Block, Bleed and Blank"
- c) "Block, Bleed and Physical Disconnect"



- d) “Block and bleed”
- e) “Block and special procedure”.

Double Block and Bleed shall be used whenever possible. Where none of the above is possible, special procedures authorized by Management must be in place to ensure worker safety.

- c) All new equipment and systems shall be designed and installed with Double Block and Bleed isolation capability, including additions to existing equipment and systems.
- d) When working with highly corrosive liquids, lethal gasses, high temperatures, very high pressures, etc. Refer to specific work procedures for special precautions and procedures.
- e) Where equipment has both electrical and mechanical energy sources standard lock and tag practices for all of these hazards shall be followed to ensure you and your workmates are safe. For example to remove a steam heater with an electric fan, the heater shall be isolated from both the electrical supply and the steam supply to the heater.
- f) Personnel must be aware of any other potential hazards involved in working on mechanical equipment (i.e. pinch points, hot components, possibility of equipment rolling or moving, etc.) before commencing work on the equipment.

8. MOBILE EQUIPMENT

8.1 Purpose

- a) This part defines standard practices which ensure mobile equipment will not be able to move or release energy. The standard practices are applicable to all mobile equipment, regardless of purpose, size, power source, or type of drive system.
- b) Mobile equipment means any fuel, air or electricity powered vehicle which is capable of moving from place to place under its own power. Mobile equipment includes Scoop Trams (LHD’s), Drills, Jumbos, Service Trucks, Utility Vehicles, etc.
- c) For some specific equipment, Special procedures have been prepared. Refer to the specific departmental web site for these procedures.



8.2 Standard Practices

- a) Mobile equipment which is not to be started or moved because of mechanical failure or some other dangerous condition shall be isolated and tagged with an equipment status tag. Reasons or conditions shall be identified on the tag.
- b) Mobile equipment which is under repair shall have all hazards isolated, locked, tagged and checked. Personal Protection tags shall be used while working on the equipment.
- c) Locks and tags shall be placed at the main disconnect switch of electrically powered equipment. Equipment without a main disconnect switch shall have a Lock and tag placed on the battery isolation switch.
- d) Refer to equipment specific procedures and manufacture's recommendations prior to working on mobile equipment. All maintenance and other work on mobile equipment shall be done in accordance with the equipment manufacturer's maintenance manuals and procedures.
- e) Personnel must be aware of all potential hazards involved in working on mobile equipment (i.e. pinch points, hot components, hot exhaust systems, possible electrical shock, possibility of equipment rolling or moving, etc.) before commencing work on the equipment.

Caution: Particular care is required when working on mobile equipment which incorporates stored energy devices (air receivers, hydraulic accumulators, pressurized system headers, charged springs, etc.) to ensure that the stored mechanical energy is safely released or isolated prior to working on the equipment.

9. CODES, STANDARDS AND REGULATIONS

All work practices relating to isolation, locking, tagging and checking shall be performed in accordance with the latest revision of the following codes, standards and regulations:

CSA Standard C22.1
The Canadian Electrical Code, Part 1

CSA Standard CAN3-M421
The Use of Electricity in Mines

CSA Standard Z460
Control of Hazardous Energy – Lockout and other methods



CSA Standard Z462
Workplace Electrical Safety

Continuing Consolidation of the Statutes of Manitoba
Chapter W210, The Workplace Safety and Health Act

Operation of Mines Regulation (M.R.212)

Workplace Safety and Health Regulation (M.R.217)

Approved By Kirk Regular	Title Manager of Services
Date: January 2, 2019	

