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University of
Lethbridge



FACILITIES

Electrical Department

Health & Safety Program

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

ORGANIZATIONAL COMMITMENT

ORGANIZATIONAL COMMITMENT

RESPONSIBILITIES

The ultimate responsibility for establishing and maintaining the Occupational Health and Safety Program on campus rests with the Board of Governors of The University of Lethbridge. Basic policies, which govern the activities and limitations of the Health and Safety program, are proposed by the President of The University of Lethbridge and issued under the final authority of the Board of Governors.

The primary responsibility for providing and maintaining a healthy and safe campus environment on a day-to-day basis lies at the operational departmental level. Specific responsibilities of all Facilities staff are directly proportional to their operational authority and are listed below.

The Facilities Department requires that all supervisors and employees adhere to the policies, regulations and procedures set forth in this manual as well as the policies and regulations of The University of Lethbridge and the *Alberta Occupational Health & Safety Regulation and Code*. This manual does not replace the standards set forth by The University of Lethbridge or the *Alberta Occupational Health & Safety Regulation and Code*. Where there are discrepancies the stricter will apply.

Executive Director of Facilities:

It is the responsibility of the Executive Director of Facilities to maintain a healthy and safe working environment within the jurisdiction, to monitor and exercise control over assigned areas and implement the following designated safety-related responsibilities:

- Providing management the support and leadership necessary for the overall planning, implementation and execution of The University of Lethbridge safety policies within their areas of responsibility.
- Incorporating adequate provisions for safe working practices and conditions in operational policies and procedures and in programs and projects.
- Monitoring and evaluating safety performance within their areas of responsibility and recommending measures to bring about improvement.

Superintendents, Managers and Supervisors

All Superintendents, Managers and Supervisors within Facilities are responsible for ensuring that facilities and conditions under their jurisdiction are monitored and maintained in a safe manner at all times. Special emphasis should be given to ensuring that adequate training is provided prior to tasks being assigned. It is expected that preference will be given to following established safe work procedures over expedient hazardous shortcuts in all operations. Further responsibilities include:

- Ensuring compliance with the Alberta Occupational Health and Safety Regulations and Code;

ORGANIZATIONAL COMMITMENT

- Planning and executing all activities in a manner that promotes compliance with The University of Lethbridge safety policies.
- Ensuring that individuals in their areas of assignment have been given adequate direction, training and instruction in the safe performance of their work, and that it is performed without undue risk.
- Ensuring that employees are provided with all tools and equipment (including Personal Protective Equipment (PPE) complete with instructions on its proper use), necessary to carry out their duties without jeopardizing their health and safety or the health and safety of others.
- Ensuring that work areas are inspected at regular intervals to prevent the development of unsafe conditions and practices.
- Authorizing the action necessary to correct substandard conditions or procedures.
- Ensuring all incidents and near misses are reported and investigated, and action taken to prevent a recurrence.
- Making every effort to ensure that medical treatment is received for all injuries.

Employees

All Facilities employees are subject to the health and safety requirements established in this manual, to departmental operational procedures and to all other applicable regulatory requirements. Responsibilities of employees include:

- Observing all safety rules and procedures established by the regulatory authorities and The University of Lethbridge.
- Consulting with their Supervisor on the safe way to perform a task which is considered hazardous or is known to be hazardous, prior to beginning the task.
- Performing a Hazard Assessment before commencement of any task, involving the physical environment, to ensure all control measures are in place to safely execute the task without risk to themselves, other employees or the public.
- Wearing Personal Protective Equipment when required to ensure health and safety are not jeopardized.
- Promptly reporting hazardous or unsafe equipment, facilities, conditions, procedures or behavior to a supervisor, making suggestions for their corrective action and taking corrective action where authorized.
- Immediately reporting to a supervisor all work related incidents or injuries and obtaining first-aid treatment without delay.
- Reporting promptly to a supervisor any treatment by a physician following a work related injury.

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

HAZARD IDENTIFICATION

HAZARD IDENTIFICATION

A consistent hazard evaluation process was used throughout the Facilities departments for hazard identification of the various job tasks performed, and equipment used. Workshops were conducted to train employees and managers on how to evaluate the hazards associated with their jobs.

The employees performing the tasks, and operating the equipment conducted all evaluations.

HAZARDS

For each job task and piece of equipment evaluated the following OH&S industry standard hazards were taken into consideration:

1. Falling Objects
2. Chemical Exposure
3. Exposure to Heat / Cold
4. Dust / Vapours
5. Light Radiation
6. Electrical
7. Noise
8. Eye Injury
9. Repetitive Strain / Motion
10. Lifting
11. Slips / Falls
12. Ice / Docks & Roads
13. Rotating Equipment
14. Pinch Points
15. Cuts
16. Eye Strain
17. Fire
18. Asbestos
19. Radioactive Exposure
20. Working Alone
21. Mould
22. Pedestrian / Vehicular Traffic
23. Bio-Hazardous Material
24. Wildlife Hazards
25. Asbestos Awareness Information

The above list shall be used as a guide in reference to hazards identified throughout this manual.

HAZARD ASSESSMENT

The fundamental principle of a Health and Safety Program is to reduce injury and disease to employees. One of the most important aspects of a health and safety program is hazard assessment. Hazard identification is crucial in the workplace.

Conducting a Hazard Assessment

1. The job tasks are listed.
2. Compile a master list of the jobs.
3. Determine the hazards associated with the jobs. Each hazard is determined as if there are not controls in place. For example, chemical splash without safety goggles.
4. Rank the **exposure**
 - 1 = unlikely: a person is exposed to the hazard 1x a year or less
 - 2 = occasionally: a person is exposed to the hazard 1x month or less
 - 3 = often: a person is exposed to the hazard more than 2x but less than 4x per month
 - 4 = frequently: a person is exposed to the hazard 1x or 2x per week
 - 5 = continuous: a person is exposed to the hazard 1x or more per day
5. What is the **probability of occurrence**
 - 1 = unlikely to occur
 - 2 = some chance
 - 3 = could occur
 - 4 = good chance
 - 5 = will occur if not attended to
6. What are the **consequences**
 - 1 = insignificant: a person receives a very minor injury, no damage to property
 - 2 = first aid or minor property damage: a person administers first aid to self
 - 3 = injury results in lost time, seeking medical help or significant property damage
 - 4 = injury results in permanent disability, serious health effects or property damage
 - 5 = injury results in a fatality, or there is major property damage
7. Add the numbers to reach a total risk rating. A risk rating of:
Serious (11 – 15) means the hazard must be attended to immediately, prior to the commencement of the job. Controls **must** be put into place. A safe job procedure **must** be in place prior to the commencement of the job.
Moderate (6 – 10) means the hazard requires attention. Controls **should** be put into place. A safe work procedure **should** be in place prior to the commencement of the job, but could be attended to once the job has commenced. Employees **must** be aware of the hazard. The safe work procedure **must** be in place prior to the completion of the job.
Low (3 – 5) means the hazard requires monitoring. Controls are recommended. A safe work procedure is recommended.

HAZARD ELIMINATION AND CONTROL

If an existing or potential hazard to workers is identified during a hazard assessment, measures must be taken to:

- eliminate the hazard, or
- If elimination is not reasonably practicable, control the hazard

If reasonably practicable, the hazard must be eliminated or controlled through the use of engineering controls.

If a hazard cannot be eliminated or controlled using engineering controls, administrative controls must be used to control the hazard to a level as low as reasonably achievable.

If a hazard cannot be eliminated or controlled using engineering or administrative controls, then appropriate personal protective equipment must be used.

If a hazard cannot be eliminated or controlled using any one of the above controls, then a combination of these should be used if this would provide a greater level of worker safety.

If emergency action is required to control or eliminate a hazard that is dangerous to the safety or health of workers:

- only those workers competent in correcting the condition, and the minimum number necessary to correct the condition, may be exposed to the hazard, and
- every reasonable effort must be made to control the hazard while the condition is being corrected.

The following are some examples of controls.

Engineering controls

- Design of a workplace
- Automation/material handling devices
- Machine guard, interlocks, lockouts, warning devices
- Isolation/enclosure
- Limitation (safety valves)
- Ventilation (general dilution/local exhaust)
- Storage
- Air monitoring devices
- Communication devices

Administrative controls

- Substitution of a less toxic product
- Purchasing criteria (tools, equipment, chairs, etc)
- Policies and procedures
- Training
- Organizing and planning work
- Rotation of workers
- Safety plan/procedure

Personal Protective Equipment (PPE)

- Hard hat
- Goggles
- Hearing
- Safety boots
- T-shirts with 4 inch sleeves
- Respiratory protective equipment
- Fall protection

JOB TASKS ANALYZED

Safe Work Procedures were written up for jobs tasks evaluated as having High or Extreme Hazards associated with them.

The job tasks listed below for the Electrical Department were found to have the corresponding hazards associated with them through the Risk Analysis process as mentioned.

Conducted by: Jeff Vucurevich
Willie Tietz
Jayne Yates

Date: March - May 2001

Door Access Systems

- #1 Falling Objects (10)
- #11 Slips / Falls (10)

Fire Alarm System Testing & Maintenance

- #7 Noise (10)
- #11 Slips / Falls (11)

Fish Tape Usage

- #6 Electrical (10)

High Voltage Distribution

- #6 Electrical (11)
- #8 Eye Injury (12)
- #10 Lifting (10)
- #11 Slips / Falls (11)

High Voltage Switchgear Maintenance

- #6 Electrical (11)
- #8 Eye Injury (12)

Lighting

- #1 Falling Objects (15)
- #2 Chemical Exposure (10)
- #11 Slips / Falls (11)

Lighting Controls

- #6 Electrical (11)
- #11 Slips / Falls (11)

Motors

- #6 Electrical (11)
- #13 Rotating Equipment (11)
- #17 Fire (10)

Motor Controls

- #6 Electrical (11)
- #17 Fire (10)

Motor Control Centres (MCC's)

- #4 Dust / Vapours (11)
- #6 Electrical (13)
- #8 Eye Injury (11)
- #11 Slips / Falls (11)

Multimeter and Clamp-on Ammeter Usage

- #6 Electrical (12)
- #8 Eye Injury (12)
- #13 Rotating Equipment (10)

Power Distribution Panels

- #1 Falling Objects (10)
- #6 Electrical (13)
- #8 Eye Injury (12)
- #10 Lifting (10)
- #11 Slips / Falls (11)

Tools:

Grinder

- #7 Noise (12)
- #8 Eye Injury (10)

Pneumatic Tools

- #4 Dust / Vapours (12)
- #8 Eye Injury (13)

Power Tools

- #6 Electrical (12)
- #13 Rotating Equipment (10)

Power Washer

- #6 Electrical (11)
- #17 Fire (12)

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

HAZARD CONTROL

SAFE WORK PROCEDURES OVERVIEW

Throughout Facilities, assessments were conducted on the various existing job tasks and equipment operated to determine the hazards employees may be exposed to. The assessment system used can be found in the previous section of this manual.

Safe Work Procedures were written for specific tasks having high or extreme hazards associated with them. Throughout the Safe Work Procedures, reference is made to various Safe Work Practices as found in Appendix 'A' of these manuals. The Safe Work Procedures vary from the Practices, in that the Procedures are a step by step outline on how to carry out a specific task, whereas the Practices are general safety measures / precautions for tools, equipment, or general work practices which can be applied to a number of Safe Work Procedures.

The Safe Work Procedures were designed to ensure that any information pertaining to the task could be found on the form prior to commencing work. Any hazards associated with the task, along with control measures for these hazards, specific tools or equipment required for the job, as well as references to supplementary material are all listed on the form.

A copy of the Safe Work Procedures Template can be found in this section. This form and the previously mentioned Hazard Analysis System are used whenever new responsibilities or equipment are added to a department.

DOOR ACCESS SYSTEMS

GENERAL / BRIEF DESCRIPTION OF TASK:

- Repair and troubleshooting of automatic door opening systems throughout campus.

FREQUENCY OF TASK PERFORMED:

- On demand

HAZARDS IDENTIFIED:

#1 – Falling Objects

#11 – Slips / Falls

P.P.E. REQUIRED:

SPECIAL TOOLS REQUIRED (if any):

Step Ladder
Multimeter
Tool Belt

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Refer to Safe Work Practice for “**Use of Step Ladders**” as found in Appendix ‘A’.
- Remove access cover from door opener.
- Inspect as shown during training.
- Using Multimeter check for presence of power.
- Refer to Safe Work Procedure for “**Multimeter and Clamp-on Ammeter Usage**” as found in this section.
- Repair as necessary.
- Replace cover to door opener.

FIRE ALARM TESTING AND MAINTENANCE

GENERAL / BRIEF DESCRIPTION OF TASK:

- Testing and maintenance of campus fire alarms.

FREQUENCY OF TASK PERFORMED:

- Monthly testing – areas are tested annually on a monthly rotating basis.
- Annual testing.

HAZARDS IDENTIFIED:

#7 – Noise
#11 – Slips / Falls

P.P.E. REQUIRED:

SPECIAL TOOLS REQUIRED (if any):

Step Ladder
Soldering Torch

SAFE WORK PROCEDURE:

- Notify Campus Security, the Lethbridge Fire Department, and the Operator on duty in regards to the areas being tested and length of test.
- Notification should be given to the departments occupying the test areas and or post on the Notice Board on the University of Lethbridge web site.
- Visually inspect worksite for possible hazards.
- Follow precisely the Fire Alarm System procedures for the PM's pertaining to the specific area of test as outlined in **PM # E600-FAS-ALL** as found in Appendix 'B'.
- Refer to Safe Work Practice for "**Use of Step Ladders**" as found in Appendix 'A'.
- Once testing is complete notify Campus Security, the Lethbridge Fire Department, and the Operator on duty.

FISH TAPE USAGE

GENERAL / BRIEF DESCRIPTION OF TASK:

- Use of fish tape to pull telephone and computer wires through building structures / walls / conduit and other raceways. This is separate from electrical conduit.

FREQUENCY OF TASK PERFORMED:

- On demand

HAZARDS IDENTIFIED:

#11 – Slips / Falls

P.P.E. REQUIRED:

- Varies with work area
(ie. Safety Glasses, Gloves)

SPECIAL TOOLS REQUIRED (if any):

Fish Tape
Electrical Tape
Portable Radios
Wire Lube

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Safety glasses may need to be worn depending on the area or conditions of work.
- When working on ladders, refer to Safe Work Practices for “**Use of Step Ladders**”, and “**Use of Portable Ladders**” as found in Appendix ‘A’.
- When working in some areas, confined space may be an issue. All workers working in these conditions must be certified in Confined Space Entry Procedures.
- In these cases, refer to and follow precisely **Confined Space Entry Procedures** as found in this section.
- Radio contact or another effective form of communication between workers may be required depending on the area or conditions.
- Once fish tape is through raceway, attach wires to hook and secure using electrical tape.
- Ensure wires are not tangled up, and pull back through raceway.
- Use wire lube if necessary.

GENIE LIFT

GENERAL / BRIEF DESCRIPTION OF TASK:

- Using Genie Lift to temporarily access high areas.

FREQUENCY OF TASK PERFORMED:

- On Demand

HAZARDS IDENTIFIED:

#1 – Falling Objects
#9 – Repetitive Strain / Motion
#11 – Slips / Falls

P.P.E. REQUIRED:

- Safety Belt / Lanyard

SPECIAL TOOLS REQUIRED (if any):

SAFE WORK PROCEDURE:

- Visually inspect area for possible hazards.
- Under OH&S Statutes and Regulations, where employees are working on temporary platforms at heights greater than 3.5 meters, a fall arresting device must be used.
- Refer to Info Sheet for “**Safety Belts, Lanyards, and Lifelines**” as found in PPE section.
- All employees operating the Genie Lift must be formally trained in its safe operation.
- When raising lift, ensure that there is no contact made by the worker or lift with any overhead obstruction.
- Operation of Lift is a two-person job. An effective means of communication must be established between the worker in the cage and the lift operator prior to raising boom.
- Always lower the lift prior to moving from one area to another.
- When the lift has been moved to a location, ensure the outriggers have been properly planted before raising lift to prevent machine from tipping.
- When working in public access areas, place pylons or other warning devices / barricades around the perimeter of the lift to warn of overhead work and detour passersby away from the work area to prevent possible injury due to falling objects.
- The working platform must not be used for the storage of materials.
- Before starting to work on the platform, the worker must inspect the working platform and ensure the platform is free of hazards which may cause slipping, tripping or falling objects if kicked.
- When working overhead, take breaks or rotate duties with other employees at appropriate intervals to reduce / eliminate possible injury due to repetitive strain / motion.
- For safe operating instructions, refer to the Manufacturers Operating Manual found attached to the Genie Lift. **Do not remove manual from lift.**

HIGH VOLTAGE DISTRIBUTION

GENERAL / BRIEF DESCRIPTION OF TASK:

- Preventative or demand maintenance to High Voltage Distribution on campus.

FREQUENCY OF TASK PERFORMED:

- On demand.
- Preventative Maintenance – Yearly on a monthly rotating basis.

HAZARDS IDENTIFIED:

#6 – Electrical
#8 – Eye Injury
#10 – Lifting
#11 – Slips / Falls

P.P.E. REQUIRED:

- High Voltage Gloves

SPECIAL TOOLS REQUIRED (if any):

Thermal Gun
Specialty HV Testing Instrumentation

SAFE WORK PROCEDURE:

- This is a two-person job performed by at least one Journeyman.
- Apprentices may assist, however, they are not allowed to work on High Voltage Distribution systems without the presence of a Journeyman.
- Visually inspect worksite for possible hazards.
- When performing Thermography maintain a safe working distance away from live components. The Thermo Gun has accurate long-range capabilities and therefore worker safety does not need to be compromised.
- Refer to Operator's manual for Thermo Gun for any operation or safety information required.

Manholes

- When working on High Voltage Distribution in manholes, confined space is an issue.
- Only individuals whom have been formally trained in Confined Space Entry are allowed to carry out work in manholes.
- A Confined Space Entry Form for manholes must be completed prior to entering manhole.
- Refer to and follow "**Confined Space Entry Procedures**" as found in this section.
- Caution should be exercised when removing the manhole cover, as these can be heavy and awkward to handle. Obtain help from a co-worker if required to eliminate injuries due to lifting.
- Refer to Safe Work Practices on "**Proper Lifting Techniques**" as found in Appendix 'A'.
- Once maintenance is complete and worker is out of manhole, replace manhole cover.
- Manholes are never to be left open unattended.

Electrical Vault

- When performing preventative or demand maintenance work on breaker system in the Electrical vault, ensure Tie Breaker has re-directed power as required prior to shutting down Feeder.
- Manually trip out Feeder breaker prior to racking out.
- Proceed with racking out of breaker.
- Perform required maintenance as per PM or work order.
- In the event that any chemicals are used for cleaning purposes, refer to and follow all product labels and any MSDS available for any necessary safety precautions or personal protective equipment required.
- Refer to Safe Work Practices on “**Cleaning Solvents and Flammables**” as found in Appendix ‘A’.
- Prior to re-racking of breaker, check to ensure no tools or replaced parts have been left behind the breaker in the vault space.
- Re-Rack breaker.
- Manually reset Feeder breaker to bring Feeder back on line.
- Re-position Tie Breaker.

HIGH VOLTAGE SWITCHGEAR MAINTENANCE

GENERAL / BRIEF DESCRIPTION OF TASK:

- Preventative or demand maintenance to high voltage switchgear (S&C Units) on campus.

FREQUENCY OF TASK PERFORMED:

- On demand.
- Preventative Maintenance – Yearly on a monthly rotating basis.

HAZARDS IDENTIFIED:

#6 – Electrical
#8 – Eye Injury

P.P.E. REQUIRED:

- High Voltage Gloves
- Safety Glasses

SPECIAL TOOLS REQUIRED (if any):

Designated HV “Ticker” – Testing Device
Fuse Puller
HV Fuse Pulling Hot Stick
Thermal Gun
Grounding Cables

SAFE WORK PROCEDURE:

- Authorization Forms for Switchgear maintenance and fuse pulling must be completed by the employees performing the maintenance and authorized by the Electrical Supervisor prior to commencing work.
- This form specifically outlines step by step the power down and / or lockout procedure to be carried out by the Switching Operator and is monitored by the Switching Authority as well as the power up procedure.
- This is a two-person job performed only by journeyman, with one person designated as the Switching Operator and one person acting as the Switching Authority for the work performed.
- ***Apprentices are not to perform any work on HV Switchgear – observation only.***
- Visually inspect worksite for possible hazards.
- If weather conditions pose hazards due to wetness, the area is to be tarped off to ensure worker safety.

U of L Employees Carrying out PM or DM

- Once Switchgear has been powered down and or locked out the completed Authorization Form is placed in an envelope along with the keys for the locks.
- The envelope is sealed and held by the Switching Operator.

SAFE WORK PROCEDURES

- Verify with designated High Voltage “Ticker” – Testing Device. If presence of static charge exists grounding cables are to be used.
- Carry out preventative or demand maintenance ensuring all safety precautions as outlined on the Authorization Form have been met.
- In the event that any chemicals are used for cleaning purposes, refer to and follow all product labels and any MSDS available for any necessary safety precautions or personal protective equipment required.
- Refer to Safe Work Practices on “**Cleaning Solvents and Flammables**” as found in Appendix ‘A’.

Outside Contractor Requiring Shutdown

- Once the Switchgear has been powered down and locked out the sealed envelope is turned over to the Contractor to hold for the duration of the work they will be performing.
- Once the Contractor has completed their work, requiring a reversal, the envelope is returned to the U of L Switching Operator and the power up procedure as outlined on the Authorization Form is carried out by the Designated Switching Operator with the Switching Authority monitoring the procedure.
- All paperwork is then turned in to the Electrical Supervisor.

LIGHTING

GENERAL / BRIEF DESCRIPTION OF TASK:

- Changing out of ballasts throughout campus buildings.

FREQUENCY OF TASK PERFORMED:

- On demand as per work order

HAZARDS IDENTIFIED:

#1 – Falling Objects
#2 – Chemical Exposure
#11 – Slips / Falls

P.P.E. REQUIRED:

- Gloves

SPECIAL TOOLS REQUIRED (if any):

Step Ladder
Tool Belt
Multimeter

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards
- Lockout / tagout circuit. If unsure of panel # and circuit #, check with building prints located in B480.
- Refer to and follow “**Lockout / Tagout Procedures**” as found in this section.
- If Lockout / Tagout causes potential hazards in some areas due to darkness, temporary lighting must be provided to these areas for the duration of the work.
- Remove lens and lamps. Remove ballast shield.
- Refer to Safe Work Practice for “**Use of Step Ladders**” as found in Appendix ‘A’.
- Extreme caution should be used when removing overhead pieces as not to drop them resulting in damage to parts and personal injury to workers or passersby.
- If working alone cautionary notification should be placed around base of ladder to notify passersby of overhead work.
- If two people are working together, the person at the base of the ladder should notify and or re-direct traffic away from area.
- Verify with Multimeter that no power is present on circuit.
- Refer to Safe Work Procedure for “**Multimeter and Clamp-on Ammeter Usage**” as found in this section.
- Disconnect wires and remove old ballast.
- If ballast appears to be leaking, gloves should be worn when handling.
- Replace with new ballast of similar type and reconnect wires.
- Replace lamps and lens.

SAFE WORK PROCEDURES

- Reverse lockout procedure.
- Remove temporary lighting.
- Discard ballasts according to type. Regular ballasts are to be discarded on the scrap metal pile in the bone yard. Ballasts containing hazardous chemicals are to be placed in labeled container for hazardous waste disposal.

LIGHTING CONTROLS

GENERAL / BRIEF DESCRIPTION OF TASK:

- Adjusting of occupancy sensors and replacement of control relays in cabinets.

FREQUENCY OF TASK PERFORMED:

- On demand.

HAZARDS IDENTIFIED:

#6 – Electrical
#11 – Slips / Falls

P.P.E. REQUIRED:

SPECIAL TOOLS REQUIRED (if any):

Step Ladder
Tool Belt
Ammeter

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Refer to Safe Work Practice for “**Use of Step Ladders**” as found in Appendix ‘A’.

Occupancy Sensors Adjusting Time & Sensitivity

- Turn time down on sensor
- Leave Room. Re-enter after lights go out.
- Ensure lights go on when threshold is crossed.
- Adjust sensitivity as necessary and repeat sensitivity check.
- Return timer to designated time.

Replacement of Occupancy Sensors

- Remove sensor and mounting screws.
- Pull down sensor.
- Disconnect wires. Extreme caution should be used as not to short wires together.
- Connect new sensor and reset mounting screws.
- Follow above procedure for adjusting time and sensitivity.

SAFE WORK PROCEDURE (cont.):

Control Relay Cabinets

- Lockout / tagout circuit. If unsure of panel # and circuit #, check with building prints located in B480.
- Refer to and follow “**Lockout / Tagout Procedures**” as found in this section.
- If Lockout / Tagout causes potential hazards in some areas due to darkness, temporary lighting must be provided to these areas for the duration of the work.
- Verify with Multimeter that no power is present on relay circuit.
- Refer to Safe Work Procedure for “**Multimeter and Clamp-on Ammeter Usage**” as found in this section.
- Extreme caution must be used as other live circuits are present in cabinet.
- Disconnect wires and remove relay.
- Replace with new relay of similar type.
- Dispose of relay in garbage.
- Reverse lockout procedure.
- Remove temporary lighting.

LIGHTING DE-ENERGIZATION

GENERAL / BRIEF DESCRIPTION OF TASK:

- Temporarily de-energizing lighting.

FREQUENCY OF TASK PERFORMED:

- On Demand

HAZARDS IDENTIFIED:

#1 – Falling Objects

#11 – Slips/Falls

P.P.E. REQUIRED:

SPECIAL TOOLS REQUIRED (if any):

Signage
Barricades
Portable lighting

SAFE WORK PROCEDURE:

- Visually inspect area for possible hazard.
- Identify circuit-requiring de-energization.
- Determine effected area(s) prior to de-energization.
- Observe pedestrian traffic and determine best means of barricading work area to reroute traffic to cause minimum disruption.
- Determine if sufficient light levels are present to safely pass through the reduced lighted area.
- If light levels are low, before de-energization place additional portable lighting in area(s) of resulted darkness or low light level to ensure sufficient lighting for easy movement of pedestrian traffic.
- When working in public access areas, place pylons, barricades, signage ropes/chains or other means of informing and moving traffic around work area.

MOTORS

GENERAL / BRIEF DESCRIPTION OF TASK:

- Connection / disconnection and electrical maintenance of motors throughout campus.

FREQUENCY OF TASK PERFORMED:

- On demand

HAZARDS IDENTIFIED:

#6 – Electrical
#13 – Rotating Equipment
#17 - Fire

P.P.E. REQUIRED:

- Varies with location of work

SPECIAL TOOLS REQUIRED (if any):

Multimeter
Tool Belt

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Personal Protective Equipment required might vary with the mechanical space you are working in.
- Refer to and follow any signage posted in the area.
- Lockout / tagout the motor disconnect or isolating switch / breaker as applicable.
- Refer to and follow “**Lockout / Tagout**” procedures as found in this section.
- Verify voltage to equipment using Multimeter.
- Refer to Safe Work Procedure for “**Multimeter & Clamp-on Ammeter Usage**” as found in this section.
- Proceed with connection / disconnection / maintenance of motor as per requirements or work order.

Initial Start-up or Reconnection of Motor

- Ensure all guards / covers are properly in place prior to start-up of equipment.
- Ensure all tools, replaced parts, or other foreign objects are clear of moving / rotating equipment prior to start-up.
- After servicing is complete, reverse lockout / tagout.
- Verify Voltage to motor and Amp Draw of motor using Multimeter.

MOTOR CONTROLS

GENERAL / BRIEF DESCRIPTION OF TASK:

- Troubleshooting and repairs of motor controls throughout campus.

FREQUENCY OF TASK PERFORMED:

- On demand

HAZARDS IDENTIFIED:

#6 – Electrical

#17 - Fire

P.P.E. REQUIRED:

- Varies with location of work

SPECIAL TOOLS REQUIRED (if any):

Multimeter
Tool Belt

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Personal Protective Equipment required might vary with the mechanical space you are working in.
- Refer to and follow any signage posted in the area.

Troubleshooting

- Extreme caution is to be exercised when troubleshooting motor controls, as the system is generally left live to determine where the breakdown / deficiency has occurred.
- Once the problem has been determined, the system must be locked / tagged out.
- Refer to and follow “**Lockout / Tagout**” procedures as found in this section.
- Verify Voltage to equipment using Multimeter.
- Refer to Safe Work Procedure for “**Multimeter & Clamp-on Ammeter Usage**” as found in this section.
- Repair as necessary.
- Ensure all covers are properly in place prior to start-up of equipment.
- Ensure all tools, replaced parts, or other foreign objects are clear of moving / rotating equipment prior to start-up.
- After servicing is complete, reverse lockout / tagout.
- Verify using Multimeter.

MOTOR CONTROL CENTRES

GENERAL / BRIEF DESCRIPTION OF TASK:

- Troubleshooting and repairs of motor control centres throughout campus.

FREQUENCY OF TASK PERFORMED:

- On demand.
- Preventative Maintenance – Yearly on a monthly rotating basis.

HAZARDS IDENTIFIED:

#4 – Dust / Vapours
#6 – Electrical
#8 – Eye Injury
#11 – Slips / Falls

P.P.E. REQUIRED:

- Varies with location of work

SPECIAL TOOLS REQUIRED (if any):

Multimeter
Fuse Pullers

SAFE WORK PROCEDURE:

- ***Apprentices are not to perform any work alone on live MCC panels without prior authorization from Journeyman or Electrical Supervisor to determine if assistance or supervision is required.***
- Visually inspect worksite for possible hazards.
- Personal Protective Equipment required might vary with the mechanical space you are working in.
- Refer to and follow any signage posted in the area.
- If higher areas need to be accessed a step ladder may be needed.
- Refer to Safe Work Practices on “**Use of Step Ladders**” as found in Appendix ‘A’.
- Extreme caution should be exercised when opening MCC units, as these may become a source of heat for mice and other rodents. If dead mice or feces are found, extreme caution should be used against contact of Hantavirus.
- Refer to Safe Work Practices on “**Hantavirus**” as found in Appendix ‘A’.

Troubleshooting

- Extreme caution is to be exercised when troubleshooting or repairing motor control centres, as the system is generally left live to determine where the breakdown / deficiency has occurred.
- High Voltage gloves should be worn if areas with restricted access need to be worked on.

SAFE WORK PROCEDURES

- Use extreme caution against contact with other live components as this may result in an electrical flash causing eye injury.
- Once the problem has been determined, the system must be locked / tagged out.
- Refer to and follow “**Lockout / Tagout**” procedures as found in this section.
- Verify using Multimeter.
- Refer to Safe Work Procedure for “**Multimeter & Clamp-on Ammeter Usage**” as found in this section.
- Repair as necessary.
- Ensure all covers are properly in place prior to start-up of equipment.
- Ensure all tools, replaced parts, or other foreign objects are clear of moving / rotating equipment prior to start-up.
- After servicing is complete, reverse lockout / tagout.
- Verify using Multimeter.
- Check motor operation and rotation if feeder wires have been removed.

MULTIMETER & CLAMP-ON AMMETER USAGE

GENERAL / BRIEF DESCRIPTION OF TASK:

- Use of Multimeter / Clamp-on Ammeter to check for Amps, Volts, and Ohms on electrical circuits.

FREQUENCY OF TASK PERFORMED:

- On demand

HAZARDS IDENTIFIED:

#6 – Electrical
#8 – Eye Injury
#13 – Rotating Equipment

P.P.E. REQUIRED:

- Varies with work area
(ie. Safety Glasses, Hearing Protection, High Voltage Gloves)

SPECIAL TOOLS REQUIRED (if any):

Multimeter / Clamp-on Ammeter

SAFE WORK PROCEDURE:

- Visually inspect worksite for possible hazards.
- Personal Protective Equipment required might vary with the mechanical space you are working in.
- Refer to and follow any signage posted in the area.
- Ensure all employees using the Multimeter are fully trained in the safe operation of it as outlined in the Owner's Manual.
- Refer to Owner's Manual for further information required.
- Ensure meter is set to proper scale in regards to what is being measured (ie. volts, amps, ohms).
- Ensure meter is set to proper range for the system you are working on.
- When using a Clamp-on Ammeter, ensure hands are clear of any live wires. High Voltage Gloves should be worn.

Measuring of Ohms

- For ohm usage, ensure no power is present in system prior to usage of Multimeter.
- Once check is complete, reset meter to volts or turn meter off.

Measuring of Amps

- If using as an ammeter, ensure leads are re-plugged into volt / common terminals once check is complete.

POWER DISTRIBUTION PANELS (120 V, 208 V, 600 V)

GENERAL / BRIEF DESCRIPTION OF TASK:

- Preventative or demand maintenance to a distribution panel.

FREQUENCY OF TASK PERFORMED:

- On demand.
- Preventative Maintenance – Yearly on a monthly rotating basis.

HAZARDS IDENTIFIED:

- #1 – Falling Objects
- #6 – Electrical
- #8 – Eye Injury
- #10 - Lifting
- #11 – Slips / Falls

P.P.E. REQUIRED:

- Varies with location of work

SPECIAL TOOLS REQUIRED (if any):

Multimeter
Fuse Pullers

SAFE WORK PROCEDURE:

- ***Apprentices are not to perform any work alone on live panels without prior authorization from Journeyman or Electrical Supervisor to determine if assistance or supervision is required.***
- Visually inspect worksite for possible hazards.
- Personal Protective Equipment required might vary with the mechanical space you are working in.
- Refer to and follow any signage posted in the area.
- Depending on the size of the panel cover, two people may be required to remove the cover off of the panel. Obtain help from a co-worker to prevent injury due to lifting or possibly falling off balance into the panel.
- Refer to Safe Work Practices for “**Proper Lifting Techniques**” as found in Appendix ‘A’.

Maintenance

- Extreme caution is to be exercised when working on live distribution panels. Depending on the nature and location of work within the panel, high voltage gloves may be worn.
- Use extreme caution against contact with other live components as this may result in an electrical flash causing eye injury.

SAFE WORK PROCEDURES

- Refer to Safe Work Procedure for “**Multimeter & Clamp-on Ammeter Usage**” as found in this section.
- Proceed with required maintenance or installation as per work order or PM.
- Replace panel when leaving area.
- **Panels are never to be left open unattended in general public areas of the campus.**
- **Panels located in mechanical areas or electrical rooms are not to be left unattended unless proper cautionary signage is placed at the panel.**

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

ORIENTATION & TRAINING

EMPLOYEE TRAINING OVERVIEW

Plant Utilities is committed to properly training its employees to safely, and effectively perform the duties required from each employee according to their job designate.

ORIENTATION

Every employee that starts with Utilities is oriented within their first week. It is during this time that the employee is familiarized with the campus, specific department policies and procedures, and is introduced to the various people within their own department, as well as other personnel within Facilities that they will be dealing with in direct relation to their job.

The guideline on the following pages is used to orient the new employee. Once the orientation is complete, the last page must be signed and dated by both the new employee and the supervisor. A copy of this sheet must be kept in the employee's file as part of the Employee Training & Tracking program.

EMPLOYEE TRAINING & TRACKING PROGRAM

Journeyman and Plant Operators

Journeyman and Plant Operators, when hired are trained for systems specific to the University of Lethbridge. As well, they are trained in various safety courses required for the conditions of their job.

The Supervisor of each specific department conducts yearly evaluations to ensure that any problem areas that may exist for the employee are identified, so that further training can be provided as required by their job demands.

Apprentices

Apprentices are hired in their first year of the Apprenticeship Program, with the agreement to employ him / her for the duration of the program. Apprentices receive all of the on-the-job training from a certified Journeyman.

A progressive training record is kept in the Employee's Individual File and is recorded in the Apprenticeship Booklet provided by the *Alberta Apprenticeship Board*. The Supervisor of each specific department conducts yearly evaluations to ensure that any problem areas that may exist for the employee are identified and addressed before the end of each section of the program. This ensures that the University of Lethbridge, in compliance with the guideline setup by the Alberta Apprenticeship Board, has provided necessary training.

EMPLOYER AND APPRENTICE RESPONSIBILITIES

As outlined by the *Alberta Apprenticeship Board*, the following is a list of responsibilities for both the Employer and the Apprentice.

Employers are responsible for:

- Completing the Employer section of the Apprenticeship application.
- Signing a contract of Apprenticeship with the Apprentice and ensuring that it is forwarded to the nearest Alberta Apprenticeship and Industry Training Office to be registered.
- Providing the Apprentice with on-the-job training supervised by a certified Journeyman or a qualified Tradesperson.
- Paying the apprentice's wages, generally starting at a certain percentage of the Journeyman rate depending on the trade, and increasing in stages as the training progresses.
- Allowing the Apprentice time away from work to complete the required technical training.
- Updating the Apprentice's record book.

Apprentices are responsible for:

- Completing the Apprentice section of the Apprenticeship application.
- Completing the required on-the-job training.
- Attending and successfully completing the required technical training.
- Passing required examination.
- Carrying, and producing on request, an Apprentice ID card.
- Ensuring that their record book is completed.

ON-GOING TRAINING

From time to time employees are sent on various training courses to keep up with industry trends and job demands. A complete updated list including any expiration dates of the courses taken by each employee is kept on the employee's individual file for record purposes.

TRAINING MATRIX – UTILITIES GENERAL

Employee Name: _____

Employment Start Date: _____

Orientation Date: _____

Task	Training Date	Proficiency Date	Employee	Supervisor
PPE:				
General Use & Care				
Safety Program:				
Safe Work Practices				
Department Policies				
Emergency Response Procedures				
Timesheet Reporting				
Work Orders:				
Reporting				
Hand Held Non-Power Tools:				
Recognition / Identification				
General Use / Operation				
Power Tools:				
Recognition / Identification				
General Power Tool Safety				
Extension Cord Safety				

*** Upon successful completion of training for individual tasks the matrix is signed and dated by the employee and the supervisor.**

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

FORMAL INSPECTIONS

INFORMAL INSPECTIONS

Currently within the Facilities Departments an effective ongoing informal inspection program is carried out on a daily basis by all employees.

All Facilities employees are responsible for reporting any visible deficiencies that they come across while performing their regular assigned duties.

Deficiencies that are the responsibility of Building Maintenance, Caretaking, & Grounds are reported to the Administrative Support in Work Control located in TH101. Deficiencies that are the responsibility of Utilities are reported to the Administrative Support in Utilities located in University Hall. Once a deficiency is reported, a work order is then generated and assigned to the appropriate group for correction.

A work order request form is accessible on the Facilities website under the Administration directory of the University of Lethbridge home page. This form allows all members of the University of Lethbridge to report deficiencies in their respective areas. The request can then be retrieved by Facilities support staff through the Computer Maintenance Management System. A work order is generated from the request and assigned to the appropriate department for attention.

All work orders are tracked in a data base system, which is accessible to all Facilities Managers and Support Staff. When an employee has corrected the deficiency, the work order is then returned to the support staff in their respective areas to be closed out

FORMAL INSPECTIONS

Within Facilities, the employees in each of the departments carry out an effective formal inspection program on a monthly basis. This system is in the form of a preventative maintenance program.

Each month a series of Preventative Maintenance (PM) work orders are issued for various equipment, systems and areas of the University.

For the Utilities department the PM is a separate form / system from the general work order form. The format for the PM cover sheet is constant throughout the Utilities divisions. The directive, or check sheet / table that accompanies the PM varies throughout the PM program, as these have been developed specific to each area, system, or piece of equipment outlining the criteria to be checked.

The PM's are kept in binders in B490 and are categorized according to the divisions of work within Utilities. The binders containing the PM's are separated into the following concentrations of work; Electrical, Fire Safety Services, Janitorial, Mechanical, Operations Controls & Refrigeration, and Plumbing.

Once a PM is complete, the entire form is returned to the employee's supervisor for review.

If any deficiencies are found in the areas or equipment examined, the respective administrative staff are notified and a work order is then generated for the appropriate employee / department to correct. The information pertaining to the work order is outlined in the previous Informal Inspection section. Any deficiency found that requires immediate corrective actions due to imminent danger to employees are corrected at this time and the information pertaining to the work is recorded on the form.

In addition to the regular PM program, the Operations and Controls division of Utilities, carries out weekly and monthly inspections in the mechanical rooms throughout the University buildings. All areas are inspected on a weekly or monthly basis in conjunction with the weekly and monthly readings gathered by Operations and Controls. Any deficiencies found are noted on the cover sheet of the recorded readings. Once all the readings are complete, the deficiency report is then handed over to the Administrative Support of Utilities for work order generation.

Please refer to the following pages for a breakdown of the PM system as well as a list of the deficiencies that are looked for during the formal and informal inspections.

MECHANICAL ROOM DEFICIENCIES CHECKLIST

The following is a list of the deficiencies looked for during regular duties / informal inspections as well as during the formal inspections conducted weekly and monthly.

- Housekeeping
- Area Signage & Product Labels
- Leaks / Spills
- Safety Guards
- Lighting
- Eye Wash Stations

- Belts
- Hoses
- Equipment Vibration
- Unusual Noise (Equipment or Building Systems)
- General Condition of Equipment
- Sight Glasses
 - Fluid Levels
 - Cracks / Glass Condition

- Security of Rooms
- General Vandalism

OUT-OF-SERVICE REQUEST

ITEM DESCRIPTION: _____ SERIAL #: _____

LOCATION: _____

EMPLOYEE: _____ DEPARTMENT: _____

EXISTING PROBLEM(S): _____

SIGNATURE: _____ DATE SUBMITTED: _____

SUBMITTED TO: _____ DEPARTMENT: _____

INSPECTED BY: _____ DATE: _____

IMMEDIATE ACTION: _____ Lockout / Tagout _____ Remove

CORRECTIVE ACTION: _____ Repair _____ Replace

WO ISSUED: _____ Yes _____ No WO #: _____

REPAIRED BY: _____ DEPARTMENT: _____

DATE: _____

COMMENTS: _____

REVIEWED BY: _____ DATE: _____

BACK IN SERVICE DATE: _____

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

EMERGENCY RESPONSE PLANNING



Interoffice Memorandum

Date: August 05, 2010

To: APO Managers

From: B. Sullivan

Re: **Procedures for After Hour Occurrences**

From time to time a situation may arise that requires the notification and/or call out of management and/or staff of the Facilities Department.

Generally, the protocol for a routine after-hours incident would be for Security to call the manager of the affected department(s). From time to time however, there may be situations, which require notification of other senior Facilities staff or senior university administration.

Security Services usually receives the initial information concerning an incident. Routine incidents will be communicated via the immediate supervisor and up through the normal channels.

Significant incidents however, must be communicated to the Office of the President/Vice Presidents via telephone or personal contact. The actual notification will be done by Director of Security Services, Director Facility Operations & Maintenance, Associate Director of Facilities, or the Executive Director of Facilities, or in their absence, a senior Facilities manager. When determining whether or not the incident is "significant", the guiding principle is: **it is better to inform than not to inform.**

It is important that the senior administration of the University are apprised of major incidents. Significant incidents are those which:

- Seriously affect the safety of persons on campus
- Affect the integrity and reputation of the University
- Have the potential to attract the attention of the media

All media contact concerning any incident will be via the Communications Office, unless otherwise directed by the President or his designate.

The attached document outlines the process for notification in the event that the Director of Security Services, Director Facility Operations & Maintenance, Associate Director of Facilities, or the Executive Director of Facilities are not available.

Facilities managers have the discretion to call upon other department staff to deal with emergencies if they are unable to get a hold of the manager involved or the Associate Director of Facilities or Executive Director of Facilities.

The attached back up document also provides phone numbers of senior department staff that can be called upon in an emergency basis, to deal with situations that affect health and safety of campus users.

Brian Sullivan

Brian Sullivan
Associate Director
Facilities

BS:sh

Attachment: Emergency Response Callout List
 Emergency Contact Numbers

cc. **D. Parker**
 N. Walker

SPILL RESPONSE

Developed by: Bill Hudgins – Caretaking
Bill Platt – Grounds
John Federkeil – Utilities
Jayne Yates – Facilities

Date: September 2001

Throughout Facilities various chemicals are used for cleaning, and operational purposes, and the types of chemicals used vary from department to department.

Each department within Facilities is responsible for ensuring that the MSDS Sheets provided by the supplier for all of the chemicals used within their own department, are readily available to all of their employees. All employees must have WHMIS training.

Spills Within Facilities

Known Substance

- If the substance spilled is known, immediately obtain the MSDS.
- If the known substance is deemed to be **Non-Hazardous**, and conditions surrounding the spill do not pose any danger, follow the cleanup and disposal procedures as outlined on the MSDS.
- If the known substance is deemed to be **Hazardous**, or conditions surrounding the spill are hazardous (ie. can it become airborne; is there a source of spark nearby etc.) **immediately contact Security at local 2345.**
- The following information must be relayed to Security:
 - Your name.
 - There is a spill.
 - Location of the spill.
 - Location of spill kit.
 - Wait outside the location until Security arrives and do not let anyone else enter the area.

EMERGENCY RESPONSE PROCEDURES

Unknown Substance

- If a spill found is of an unknown substance **immediately contact Security at local 2345.**
- The following information must be relayed to Security:
 - Your name.
 - There is a spill.
 - Location of the spill.
 - Location of spill kit.
 - Wait outside the location until Security arrives and do not let anyone else enter the area.

Identifiable Area

- If a spill is found in an identifiable area (ie. Janitor Room, Grounds Shed) immediately contact the head of that department to attend the location of the spill. The department representative is then responsible for determining if the substance is known or unknown and to follow the necessary procedures.

Spill Kits

- It is the responsibility of each employee to know the location of the spill kits in their areas (if applicable).

Chemical Spills Report

- The employee finding the spill must complete the online Accident / Incident form located on the O.H. & S. website under Administration on the U of L home page.
- Once O.H. & S. receives the completed form and / or a phone call, if deemed necessary by O.H. & S., an investigation will commence.

Date: May 9, 2003
Revised: November 19, 2003

SPILL RESPONSE For Bio-Hazards

**Blood borne Pathogens
And
Other Potentially Hazardous Human Materials**

Definitions:

- BLOODBORNE PATHOGENS – pathogenic microorganisms that are present in human blood and cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Other examples include microorganisms that cause hepatitis C, i.e. Malaria.
- Other potentially Hazardous Human Materials – Human body fluids such as urine, vomit, saliva, semen and vaginal secretions.

**HEPATITIS “B” VACCINATION IS MANDATORY FOR ALL CARETAKING, SECURITY AND UTILITIES STAFF EMPLOYED BY THE UNIVERSITY OF LETHBRIDGE.
(NOTE: Building Maintenance and Grounds Staff do not require Hepatitis “B” vaccinations)**

Part of the job requirements of a Caretaker employed by the University when needed is to clean-up a blood spill or other human materials these are unknown hazards and must be treated as such. Grounds, Building Maintenance and Utilities staff and Security Officers may come in contact with these unknown hazards and must treat them as such.

Rules to follow:

- Always wear personal protective equipment in exposure situations.
- Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to blood borne pathogens.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.

Inspection of the job area is required prior to the commencement of the work to be executed.

- Check the area for blood borne pathogens and other potentially hazardous materials
- If this is the case, notify work control during normal work hours to arrange for Caretaking to clean up. Grounds staff will cleanup any Hazardous Materials found on campus outside of buildings.
- If cleanup is required outside normal work hours, contact your supervisor for guiding and assessment of the situation.
- Before you start the job, ensure you wear you PPE ie. Gloves, goggles, aprons and face masks should be worn when cleaning the sewage lift stations on campus with fall restraint when working over open pit areas.

EMERGENCY RESPONSE PROCEDURES

Clean-up Procedures for Blood borne Pathogens and Other Potentially Hazardous Human Materials:

- Inspect the area prior to commencement of clean-up.
- Ensure you wear P.P.E. 1- Gloves (disposable latex or vinyl)
2- Goggles
3- Apron (Optional)
- Ensure you have appropriate cleaning materials on hand.
1-Disinfectant solution (Bleach 1 in 10 dilution)
2-Absorbent cloths i.e. paper towel or disposable cloths
3-Garbage bags.
- Carefully apply bleach solution around the edges of the spill working to the center. Allow a twenty-minute contact time. Using paper towels or absorbent cloths, wipe-up spill working from the edges of the spill to the center.
- Clean the spill area again with fresh bleach solution place all materials used in double garbage bags for disposal, including disposable gloves used in the clean up.
- Immediately after spill is cleaned up you must wash your hands.
- Disposal of materials used will be at the direction of your foremen or manager.

OTHER POTENTIAL BIO-HAZARD MATERIALS

SHARPS

Far too frequently Facility workers are punctured or cut by improperly disposed of needles and broken glass. This, of course, exposes them to whatever infectious material may have been on the glass or needle. For this reason, it is especially important to handle and dispose of all sharps carefully in order to protect yourself as well as others.

Rules to follow:

- Look before you reach to empty garbage containers or where your vision maybe impaired i.e. under furniture or behind fixtures.
- Ensure you wear PPE (vinyl gloves).
- Check your gloves for punctures or tears. Replace if damaged.
- Remove PPE before leaving the work area.

Clean-up Procedures for SHARPS:

- If you suspect an object to be bio-hazardous (needles etc.) contact your immediate supervisor before attempting to pick it up.
- Ensure you wear PPE 1- Gloves (disposable vinyl)
2- Goggles
- Inspect the container you are emptying (do not reach inside container).
- Before picking up any object ensure you are able to identify it is not a hazard.
- Ensure you have appropriate disposal container on hand for (sharps) objects. i.e. needles. (Your supervisor will supply appropriate disposal container.)

EMERGENCY RESPONSE PROCEDURES

PROCEDURE FOR CUTS OR STAB WOUNDS FROM NEEDLES

- Report the incident to your supervisor immediately.
- Save the needle to give to medical personnel.
- You must go to your doctor or emergency for treatment.
- You will be required to fill out an accident incident report form.

YOU MUST KNOW AND UNDERSTAND THE FOLLOWING

- Ensure you know Safe Work Procedure for clean up of Blood borne Pathogens or other potentially Hazardous Human Materials.
- All Appropriate PPE must be worn.
- Remember to use universal precautions and treat all blood or potentially infectious body fluids as if they were contaminated. Avoid contact whenever possible, and whenever it's not wear personal protective equipment.

IN CASE OF FIRE – R.E.A.C.T.

REMOVE THOSE IN IMMEDIATE DANGER

**ENSURE DOORS ARE CLOSED
(PARTICULARLY THOSE IN THE IMMEDIATE FIRE AREA)**

ACTIVATE THE FIRE ALARM SYSTEM

CALL THE FIRE DEPARTMENT 9-1-1

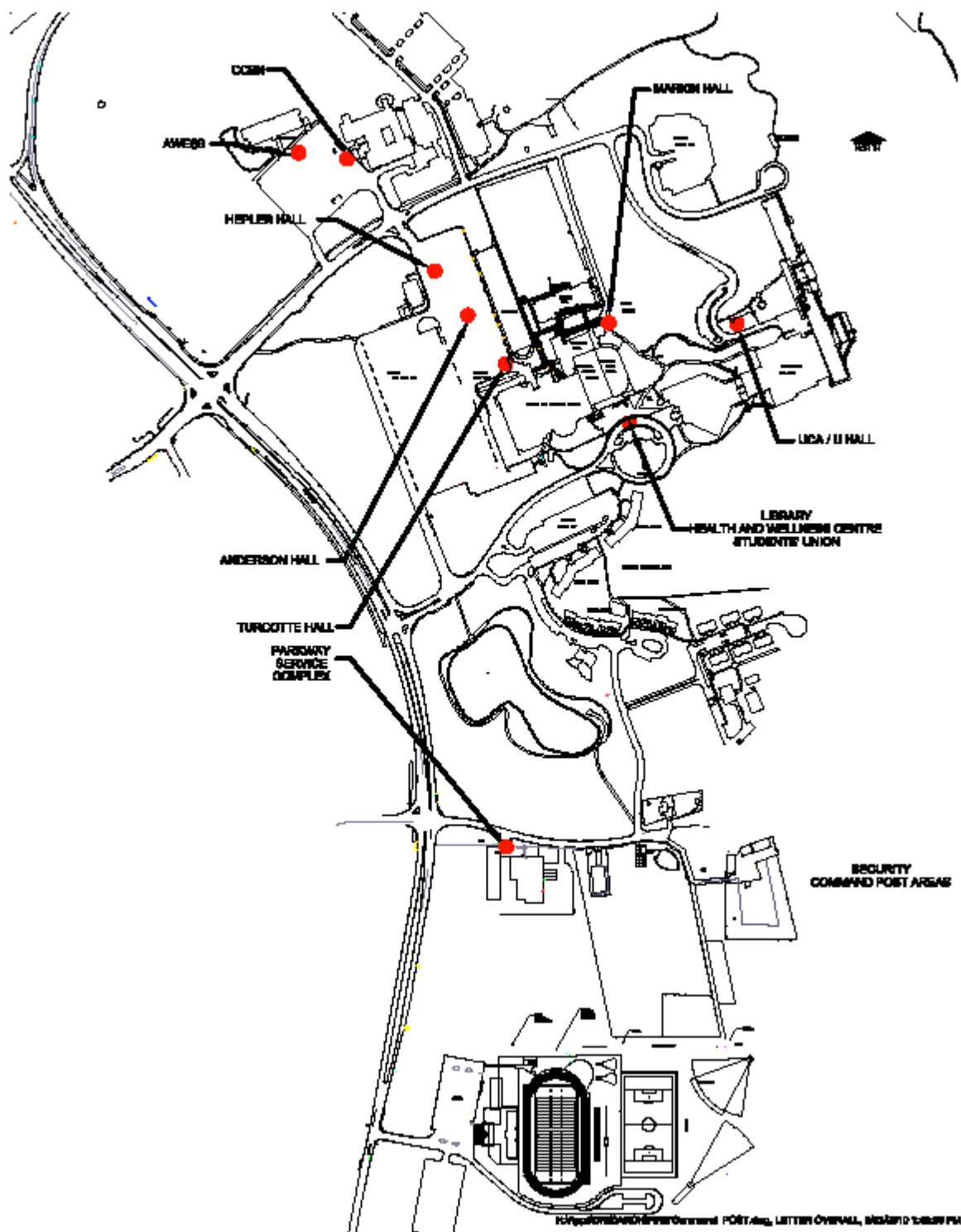
TRY TO EXTINGUISH (IF SMALL)

FIRE PREVENTION DUTIES OF FIRE WARDENS

FIRE WARDENS WILL CHECK THEIR AREA(S) FOR:

- a) Accumulation of combustible material, rubbish, or flammable liquids in excess of quantities allowed.
- b) Dangerous ignition sources, i.e. worn extension cords, oily rags, overheating equipment.
- c) Exit lights in good working order and adequate lighting in public corridors and stairwells.
- d) Fire and exit doors and their self closing hardware in good operating condition (Doors should not be wedged open under any circumstances).
- e) Exit routes unobstructed.
- f) Fire hose and portable extinguishers not obstructed, in good working order and ready to use.

ALL FIRE HAZARDS THAT ARE DISCOVERED MUST BE REPORTED TO THE BUILDING FIRE WARDEN OR DELEGATE IMMEDIATELY.



DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

ANDERSON HALL

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest outside exit and away from the building, providing there is no immediate or apparent danger.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
7. Exit the building and report to the security command vehicle located in the West lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

HEPLER HALL

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest outside exit and away from the building, providing there is no immediate or apparent danger.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
6. Exit the building and report to the security command vehicle located in the West lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

KAINAI HOUSE

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red **"X"**.
6. Exit the building and report to the security command vehicle located in the Aperture Park lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

L.I.N.C.

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest floor that will provide an exit out of the building and that these people are moved away from the building, providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR. USE STAIRWELLS TO HOUSE EVACUEES ONLY IF ABSOLUTLEY NECESSARY.** If required Handicap persons with mobility problems should wait adjacent to the stairwell at each corner of the building until after the main flow of traffic has passed then they can be positioned in the stairwell. Try to have someone stay with these people until help arrives. **DO NOT USE** the main center stairwells as these library stairways are not designed as safety areas and will not hold back smoke.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “**X**”.
7. Exit the building and report to the Security command vehicle located near the Aperture Drive bus loop. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

PHYSICAL EDUCATION BUILDING

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first-stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons with mobility problems should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red "X".
7. Exit the building and report to the Security command vehicle located near the Aperture Drive bus stop area South of the Students' Union Building. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

PIIKANI HOUSE

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red **"X"**.
6. Exit the building and report to the security command vehicle located in the Aperture Park lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

REGIONAL AQUATIC CENTRE

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first-stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons with mobility problems should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red "X".
7. Exit the building and report to the Security command vehicle located near the Aperture Drive bus stop area South of the Students' Union Building. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

STUDENTS' UNION BUILDING

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first-stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest floor that will provide an exit out of the building and that these people are moved away from the building, providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR. DO NOT USE STAIRWELLS TO HOUSE EVACUEES** as the Student's Union Building stairwells are not designed as safety areas and will not hold back smoke.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red "X".
7. Exit the building and report to the Security command vehicle located near the Aperture Drive bus stop area south of the Students' Union Building. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

TURCOTTE HALL

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first stage alarm (20 beats\minute), return to your area and prepare for an evacuation.
 - Put on your fire warden apron
4. At the sound of a general alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest floor that will provide an exit out of the building and that these people are moved away from the building, providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR. DO NOT USE STAIRWELLS TO HOUSE EVACUEES** as Turcotte Hall stairwells are not designed as safety areas and will not hold back smoke.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
7. Exit the building and report to the Security command vehicle located near the tennis courts North of Turcotte Hall. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

UNIVERSITY CENTRE FOR THE ARTS

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest floor that will provide an exit out of the building and that these people are moved away from the building, providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR. DO NOT USE STAIRWELLS TO HOUSE EVACUEES** as U.C.A. stairwells are not designed as safety areas and will not hold back smoke.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
6. Exit the building and report to the security command vehicle located in the East lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

UNIVERSITY HALL

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Be aware of those people that are evacuating within your designated area(s), particularly those that may have vision or hearing disabilities as these impairments are not always obvious. For those with mobility problems, appoint others who are evacuating your area(s) to assist you to ensure that these people or any disabled person is moved to the nearest floor that will provide an exit out of the building and that these people are moved away from the building, providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR. USE STAIRWELLS TO HOUSE EVACUEES ONLY IF ABSOLUTELY NECESSARY.** If required, handicap persons with mobility problems should wait adjacent to the stairwell until the main flow of people has passed and then they can be positioned in the stairwell. Try to have someone stay with these people until help arrives.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
6. Exit the building and report to the security command vehicle located in the East lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

UNIVERSITY HALL – DORMS “C SECTION” LEVEL 1, 2 & 3

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. At the sound of a fire alarm:
 - Put on your fire warden apron
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
4. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons with mobility problems should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
5. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red “X”.
6. Exit the building and report to the security command vehicle located in the East lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
7. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
8. If transportation of evacuated people is necessary, contact Security at 329-2345.

DUTIES OF A FIRE WARDEN & ASSISTANT FIRE WARDEN DURING AN EMERGENCY EVACUATION

UNIVERSITY HALL – DORMS C, D & E

1. In the event of a fire, your primary duty is to evacuate your designated area(s) outlined in this manual.
2. In the event of a fire or explosion, immediately activate the nearest pull station and call 911.
3. Your building is equipped with a two-stage alarm. At the sound of the first stage alarm (20 beats\minute), proceed to the D2 Janitors rooms and prepare for an evacuation. Take a role call of available R.A.'s and if someone is missing decide who will cover that R.A.'s area. Be aware that if the alarm is not activated within dorms that you will not hear the 1st stage. You will still have to meet but evacuate as soon as possible:
 - Put on your fire warden apron
4. At the sound of a general fire alarm (120 beats\minute):
 - Knock, check and evacuate each room in your area(s)
 - Once evacuated, close all doors
 - Evacuate hallways in your area(s)
5. Please be aware of handicap people within your designated areas, as disabilities are not always obvious. For those with mobility problems they should be moved to the nearest stairwell providing there is no immediate or apparent danger. **DO NOT USE THE ELEVATOR.** Handicap persons with mobility problems should wait adjacent to the stairwell until the main flow of people has passed and then they should be positioned in the stairwell until help arrives. If possible, appoint others who are evacuating the building to assist you to ensure these people or any disabled person is removed and moved away from the building.
6. Designate a person to guard exterior exits to prevent unauthorized re-entry. Your assigned exits if applicable are outlined in this manual and marked with a red "X".
7. Exit the building and report to the security command vehicle located in the East lot. Report the disposition of any handicap or injured people to the Security Officer in the vehicle at this time.
8. Follow instructions from the building fire warden or their delegate and the Lethbridge Fire Department.
9. If transportation of evacuated people is necessary, contact Security at 329-2345.

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

INCIDENT INVESTIGATION

ACCIDENT / INCIDENT INVESTIGATION OVERVIEW

When an accident / incident occurs on the worksite, the Employee is responsible for reporting it immediately to their Supervisor. It is then the responsibility of the Supervisor to conduct an investigation with the help of the Employee.

The purpose of incident investigation is to determine direct and underlying causes, and implement immediate and long-term corrections in order to prevent re-occurrence.

There are four (4) essential steps in conducting an investigation. An overview of each of the four phases is presented here;

1. **Gather Facts** - Investigation techniques and methods are designed to discover facts. A fact is something that actually exists or has actually occurred; something known by observation or examination to be true or real. This is done mainly, by examining the scene and talking to people.
2. **Analyze and Evaluate the Facts** - This is a systematic and thorough study of the facts to determine causes and recommend corrective measures. (This is the step where we spend much of our time - applying the Incident Analysis Worksheet.)
3. **Document Findings** - A written report is necessary to communicate the findings of the investigation to management and affected employees and to ensure proper follow-up takes place.
4. **Follow -up** - This step is essential to ensure that the recommended corrective actions to prevent recurrence are actually implemented, and are working effectively.

These phases generally do not occur separately, or in a linear fashion. Rather the phases sometimes overlap: analysis and evaluation begins while the facts are being gathered (e.g. while getting an overview of the incident), and evaluation of the facts may well send you back to gather more information. The investigator must be careful not to let early analysis lead to premature conclusions.

Once an investigation is complete, the results and corrective recommendations must be shared with all Employees within that department. The report is to be signed off by the Executive Director of Facilities and returned to the department Supervisor. Copies of all reports are kept on file within the department for 3 years.

In cases where the result is a loss time claim, the Supervisor is then responsible for sending a copy of the investigation to the RSS Department on campus for review.

It should be noted that this investigation and report **does not replace** any required WCB or on-line reporting forms that are to be completed by the Employee and Supervisor, nor does it replace any investigations that need to be conducted by the RSS department on campus. This is for the department's own investigation and follow-up procedures.

On-line forms can be found at www.uleth.ca/hum/riskandsafety/services

PROCEDURES FOR RESPONDING TO AND REPORTING OF:

- I.** Injuries
- II.** Property Damage / Theft
- III.** Environmental Issues
- IV.** Automobile Accidents

I. INJURIES

Response To An Injury On-site U of L Campus:

- Call Security at **329-2345**

Transportation of Injured Persons Policy:

- Employees **cannot**, at any time, for any reason, drive an injured co-worker, visitor or student, to a clinic and / or hospital.
- Refer to the University Policy 'Transportation of Ill or Injured Persons'

Response To An Injury Off-site U of L Campus:

Calgary or Edmonton Campus:

- Call SAIT Security on Calgary Campus.
- In Edmonton, call Building Security
- Call ambulance, if necessary
- Follow U of L "Transportation of Injured Persons" policy

Anywhere else on U of L business

- Follow response procedures at location
- Familiarize yourself with the accident / incident response policies & procedures of that specific organization before working at any off campus location.

Reporting an Injury On-site U of L Campus:

- Security will investigate and formally document the accident / incident and will inform RSS on campus.
- Reporting of accident / incident must be done within 24 hours if the injury occurs to faculty or staff during work, or to a student during the course of study.
- The casualty and / or observers must also document the event using the Campus Accident / Incident Report. This form can be found at www.uleth.ca/hum/riskandsafety/services
- Send the completed Accident / Incident Report form to RSS.

INJURIES (cont.)

Reporting an Injury Off-site U of L Campus:

- Fax the completed Accident / Incident Report form to RSS at (403) 329-2685.
- Or call: RSS at (403) 382-7176.

II. DAMAGE / THEFT OF U OF L PROPERTY

Response to Damage / Theft of U of L Property On-site U of L Campus

- Call Security at **329-2345**

Response To Damage / Theft of U of L Property Off-site U of L Campus:

Calgary or Edmonton Campus:

- Call SAIT Security on Calgary Campus.
- In Edmonton, call Building Security

Anywhere else on U of L business

- Follow response procedures at location
- Familiarize yourself with the accident / incident response policies & procedures of that specific organization before working at any off campus location.

Reporting of Damage / Theft to U of L Property On-site U of L Campus

- Security will investigate and formally document the accident / incident and will inform RSS.
- No other formal report required at this time.
- In the event of U of L property loss, RSS will contact the relevant person / department to process a property insurance claim, if applicable.

Reporting of Damage / Theft to U of L Property Off-site U of L Campus

- Campus Accident / Incident report, found on the RSS found at www.uleth.ca/hum/riskandsafety/services , must be completed as soon as you return to campus or within 48 hours.
- Fax the completed form to RSS at (403) 329-2685.

III. ENVIRONMENTAL INCIDENT

Defined by:

- Chemical spills, odors
- Water (or something) leaking
- Slippery surfaces such as pathways, parking lots, stair
- Lack of airflow in offices (i.e. Evenings, weekends)

Response to Environmental Incident On-site U of L Campus

- Call Security at **329-2345**

Response to Environmental Incident Off-site U of L Campus

- Notify responsible persons, as appropriate.

Reporting of Environmental Incident

- Person finding the spill is to formally document the incident using the Accident / Incident Form on the U of L website.
- Once report is submitted, RSS will review and determine if a formal investigation is required.

IV. AUTOMOBILE ACCIDENT

Response to Automobile Accident On-site U of L Campus

- Call Security at **329-2345**

Reporting of Automobile Accident On-site U of L Campus

- Security will investigate and formally document the accident / incident and will inform RSS.

Reporting of Automobile Accident On-site U of L Campus

- Fax a completed Accident / Incident report form to RSS (403) 329-2685.

Reporting of Automobile Accident On-site and Off-site U of L Campus

Personal Vehicle – U of L Business

- If the accident occurs in your personal vehicle, call your personal insurance company immediately.
- Call RSS as soon as possible. Depending upon the severity and the circumstances, the U of L's non-owned auto insurer may respond in excess of personal coverage.

Rental Vehicle – U of L Business

- Call the auto rental agency immediately.
- Call RSS as soon as possible. The U of L's non-owned auto insurer must be notified in case required to respond in excess to rental agency insurance.
- Call MasterCard if vehicle was rented using Corporate Card (may provide collision coverage).

If an injury occurs as a result of the Automobile Accident follow Injury Reporting Procedures as outlined in this document.

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

POLICIES & GUIDELINES

INCIDENT INVESTIGATION

INCIDENT ANALYSIS WORK SHEET

Injury/Loss:

Incident:

Immediate Causes:

Underlying Causes:

Corrective Action (Controls/Management System):

INCIDENT INVESTIGATION

INCIDENT INVESTIGATION REPORT

Date of Incident: _____ Time: _____

Location: _____ Name of Person in Charge: _____

Name of Investigator(s): _____

Injuries - Persons Injured

Name: _____ Phone: _____

Address: _____

Description of Injury:

First aid given? ☐ Yes ☐ No By whom? _____

Transported to medical aid? ☐ Yes ☐ No By whom? _____

Where to? _____ Name of Doctor: _____

When was the accident reported to Occupational Health & Safety?

Date: _____ Time: _____

By Whom?: _____

Property Damage

Damage to property: ☐ Yes ☐ No Estimated Value: \$ _____

Damage to equipment: ☐ Yes ☐ No Estimated Value: \$ _____

Description:

Party(s) Responsible for cost of replacement / repair:

INCIDENT INVESTIGATION

Person(s) involved/Witnesses

Name	Address	Phone

Incident Reported by: _____ Reported to: _____

Date Reported: _____ Time Reported: _____

Conditions at time of incident (weather, status of job, housekeeping, etc.)

Description of incident (What was the job being done? What equipment, tools, materials, etc. were involved? What happened?) - Attach a diagram if necessary.

What were the causes of the incident?

Immediate? (Unsafe Practices/Conditions)

Underlying? (Personal/Work Environment Factors)

Recommended action(s) to prevent recurrence?

Short-term?

Long-term?

LOCATION OF FIRST AID KITS

- | | |
|-----------------------|---|
| 1. <u>AH</u> | AH1J2 |
| 2. <u>CCBN</u> | EP12J1 |
| 3. <u>HH</u> | HH1J01 |
| 4. <u>LINC</u> | L814
L9J1
L10J1
L11J1 |
| 5. <u>PE</u> | PE1J2
PE2J7 |
| 6. <u>PWSC</u> | SC1305
SC1320
SC1330
SC1360 |
| 7. <u>SUB</u> | SU062
SU1M2
SU2M1
SU3J1 |
| 8. <u>TH</u> | TH129
TH1J1
TH2J1
TH3E1 |
| 9. <u>UCA</u> | W4J15
W5J15
W6J15
W7J15
W8J15 |
| 10. <u>UH</u> | B424
C5J1
D6J1
C7J1
C8J1 |

FACILITY OPERATIONS- UTILITIES WORK ALONE POLICY

Date of Submission: October 2001

PURPOSE

To ensure that Physical Plant Utilities workers working alone can do so safely.

OBJECTIVES

To develop procedures that will minimize or eliminate risks associated with various work tasks.

DEFINITION

Working Alone - An employee is considered to be working alone if the employee works at a work site in circumstances where assistance is not readily available when needed.

WORKING ALONE SITUATIONS

- Roof access requirements; including inspections, repairs and maintenance of mechanical systems.
- Traveling alone.
- After hours, weekends, and callouts.
- Mechanical space

PROCEDURES:

- **Roof Access Requirements:** Utilities staff that perform all roof access related duties require that all staff carry radio and / or cellular communication fill out required information on the Daily Work Activity Board.
- **Traveling Alone:** This involves Utilities staff who travel alone in the following circumstances:

Delivering / obtaining supplies from remote storage buildings and local suppliers:

Utilities staff will contact one of the Supervisors and advise of the travel plan. The plan will include the destination and expected time of return. The staff member is to contact the notified Supervisor upon returning.

The Employee will record on the Daily Work Activity Board, the travel plan. Should the employee not contact the Supervisor at the expected time of return, the Supervisor will notify the Utilities Superintendent and advise that the employee is overdue to return. The Superintendent and / or the Supervisor will then take measures to locate the overdue employee as per Overdue Employee Contact Procedures.

Traveling to remote facilities on / off campus to perform routine maintenance work:

The procedure for traveling to remote facilities remains the same as delivering / obtaining supplies as mentioned above with the following exception:

Should the travel plan require the employee to return to campus after regular working hours, the Supervisor will notify Campus Security with the travel plan indicating the expected time of his / her return. The employee in this situation will contact Campus Security upon

POLICIES & GUIDELINES

returning. Should the employee not contact Campus Security at the expected time of return, Campus Security will notify the Utilities Supervisor by cellular phone or at his / her personal residence and advise that the employee is overdue. The Utilities Supervisor will then take measures to locate the overdue employee as per Overdue Employee Contact Procedure.

If Campus Security is unsuccessful in contacting the Utilities Supervisor, they should attempt to contact, in the following order: the Executive Director, Physical Plant; Superintendent of Security; Associate Director, Physical Plant, at his / her personal residence. The contact person will then take the necessary measures to locate the employee.

- **After Hours, Weekends, and Call Outs:** When a Utilities employee is scheduled to work, or is called in to work at times other than his / her regular scheduled shift, the employee is to contact Campus Security and the **On Call Supervisor**. The employee is to let them know the nature of work to be performed, the location and the expected completion time. Upon completion of the work, the employee is to contact Campus Security and the **On Call Supervisor** advising of their departure.

Should the Utilities employee not contact Campus Security and the on call Supervisor at the expected time of completion, Campus Security will then take measures to locate the employee as per Overdue Employee Contact Procedures.

- **Mechanical Space:** Utilities employees fill out required information on the Daily Work Activity Board, check in daily with a Utility Supervisor at start of shift, morning and afternoon work breaks, lunch and end of shift. If working for long periods, employee will contact via phone or radio Utilities Supervisor. Should the Utilities employee not contact above mentioned as per check in requirements then measures will be taken to locate the overdue employee as per Overdue Employee Contact Procedure.

OVERDUE EMPLOYEE CONTACT PROCEDURE

Should the employee not contact the Notified Utility Supervisor at the expected time of return, the following measures to locate the employee will be as follows:

For normal working hours:

1. Radio employee.
2. Contact co-workers / suppliers.
3. Personally retrace travel route.
4. Contact local Security for assistance.
5. Contact local Authorities for assistance.

For other than normal working hours, the **On-Call Supervisor** or Security will attempt to locate the overdue employee as follows:

1. Radio employee.
2. Contact co-workers / suppliers.
3. Personally retrace travel route.
4. Contact local Authorities for assistance.

Daily Work Activity Board is mounted just inside the Utilities Department entrance which is to be completed by all employees approximately 5 times per day. Check in, work till 10:00 am work break, noon, 2:30 pm work break, and check out. See attached sample.

UNIVERSITY OF LETHBRIDGE HOT WORK POLICY

HOT WORK INFORMATION AND RESPONSIBILITIES

Fires caused by hot work can have a significant adverse effect on our operations and our ability to do business. Consequently the hot work procedure has been established to help minimize any hazards.

As a contractor at the U of L, you are a partner in our continued success in preventing losses. The optimal goal is to avoid hot work whenever possible by using alternative measures. Suggestions as to avoiding hot work are welcomed. However, if hot work is necessary the hot work procedures will be strictly followed.

The Utilities Department will assist with hot work procedures. If appropriate, the U of L Project Manager will introduce you to other workers in the area to discuss unique conditions you should be aware of before work begins.

UNIVERSITY OF LETHBRIDGE HOT WORK RULES

A hot work permit is required for any temporary operation involving an open flame that produces sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, pipe thawing, torch-applied roofing and welding.

1. If there is a practical and safer way to do the job without hot work, that method is to be utilized.
2. A **fire alarm / protection system work request form** must be submitted to the Utilities Department **24 hours prior** to commencement of work. Written authorization will be valid for a maximum of **one shift, or 8 hours**, whichever is shorter. After that time period or at the start of a new work day, a new form must be submitted to the Utilities Department for authorization.
3. Written authorization, in the form of a signed **hot work permit**, is required from the Utilities Department prior to the commencement of any job.
4. The permit will be valid for a maximum of **one shift, or 8 hours**, whichever is shorter. After the time period, another permit must be obtained from, and signed by the Utilities Department before any hot work can continue.
5. A copy of the signed Hot Work Permit will be faxed to the U of L Fire Safety Officer.
6. Specific fire fighting equipment and protection material will be required at the hot work site before any work commences. Equipment needs should be discussed with the U of L Project Manager before arriving at the U of L as the Contractor must have their own fire extinguishers and protection material when completing hot work projects.
7. No hot work is permitted without a designated fire watch present. The Prime Contractor/Contractor will supply the employee to the fire watch role. The employee will have total control over the hot work area for fire prevention. If unsafe conditions are observed during the hot work operation, the work will be stopped until the hazard can be neutralized or eliminated.
8. After work is complete for the day, the U of L Fire Safety Officer will designate a Security Officer to complete the fire watch.
9. The Contractor or permit holder will verify that all hot work equipment is in proper working order and in a fire safe condition. An inspection of equipment may be conducted by the U of L Project Manager. Any unsafe equipment will be removed from the property.
10. Any contractor equipment or material that is to be stored at the U of L overnight must be properly secured in an area designated by the U of L Project Manager.
11. Upon completion of the work or at the end of the work day (**prior to 3:30 p.m.**), the Contractor must notify the Utilities Department in order to put the fire alarm system back to normal operating mode.

UNIVERSITY OF LETHBRIDGE SPRINKLER REPAIR PROCEDURES

In compliance with the University of Lethbridge (U of L) Insurance Requirement a Red Tag Permit needs to be completed anytime repairs or modifications are conducted on U of L Fire Protection Equipment (Building Sprinkler Systems). Advance notice of 24 hours must be given to the Utilities Department in order to receive a Red Tag Permit.

The U of L Journeyman Plumber's (herein after referred to as 'the Plumber') responsibilities are listed below. In the absence of the Plumber, the U of L Journeyman Millwright carries out this work. For the purpose of this document wherever it is noted Plumber, assume this implies Millwright in the Plumbers absence.

UNIVERSITY OF LETHBRIDGE SPRINKLER REPAIR PROCEDURES

A Red Tag permit is required for any repairs or modifications to Sprinkler Systems resulting in shut-down of a Sprinkler System Building Zone.

1. All Modifications / Repair to Sprinklers to be conducted **BY A CERTIFIED CONTRACTOR**.
2. Prior to shutting the zone down, the Plumber is to complete the required sections of the Fire Alarm System Maintenance Form.
3. The Fire Alarm System Maintenance Form is then handed over to the U of L Electrical department requesting the disconnection of the applicable fire alarm zones.
4. The Electrical Department then carries out the appropriate procedures in disconnecting the zone and is responsible for the notification to the Fire Alarm Monitoring Company and U of L Security of the work being done.
5. Once the alarm zones have been disconnected, the Contractor completes the necessary sections on the Red Tag Permit. A copy of this permit is to be posted at the worksite, and a copy is faxed to the Insurance Company (Factory Mutual Insurance Company) as outlined in their letter found in this section.
6. If work is not completed by the end of the regular workday, a copy of the Red Tag Permit is to be faxed to Security requested additional patrols of the area.
7. The Plumber isolates and drains the zone for the contractor to carry out the applicable work.
8. Prior to bringing the zone back on-line, the Plumber is to ensure the zone is in safe condition to be brought back into the system.
9. When work is completed on the sprinkler systems, the U of L Electrical Department is to be notified for reconnection of the zone to the fire alarm system. It is the responsibility of the Electrical Department to contact the Fire Alarm Monitoring Company and U of L Security, notifying them of the reconnection and completion of work.
10. The U of L Electrical Department then completes the Fire Alarm Systems Maintenance Form. This form is kept in the Plant Utilities OH&S Safety Centre.
11. The Plumber then completes the necessary areas on the Red Tag Permit, closing out the work.
12. All three (3) copies of the Red Tag Permit are faxed to the Insurance Company (Factory Mutual Insurance Company) as outlined in their letter found in this section.

Lock-Out Procedure for Mechanical Main Systems Isolation and Re-Energization

This procedure is to be used but no limited to the following systems: domestic hot water, domestic cold water, fire suppression, hot water heating, chilled water, reheat, radiation, glycol, reverse osmosis, natural gas, steam and compressed air. This is to be used for normal maintenance, construction and emergency situations.

Note: All work to be done in accordance with the terms and limitations of the general lockout/tagout policy and or work permit system of the University of Lethbridge.

1. Verify line contents.
2. Review what and who will be affected including equipment if line is taken out of service. Review prints and physically trace line(s). Observe locations of isolation valves and other pertinent information.
3. Inform Mechanical Systems Supervisor of work to be done and how it will be carried out.
4. Notify users and operators of date planned the line and/or equipment is to be out of service. If many people will be affected advertise on U of L notice board.
5. If working in a confined space, follow confined space permit procedures.
If performing hot work, follow hot work procedures.
If fire suppression system is involved follow red tag permit procedures and notify electricians for fire protection zone blank out.
6. Just prior to when work is to commence record information in mechanical isolation log sheets and record in mechanical isolation log book.
7. Have operators shut down necessary equipment from the delta if required.
Lockout all necessary equipment electrically to prevent equipment damage and record information in electrical lockout book.
8. Slowly close upstream valve(s) of system to be isolated. Tag and physically lock valve(s).
9. Slowly close downstream valve(s) of system to be isolated. Tag and physically lock valve(s).
10. Bleed any pressure within the isolated line to the appropriate disposal location.
11. Verify that valve(s) are holding before working on the system.
12. To re-energize system, close the bleed line.
13. For water lines, if possible fill from an outside source to pressurize isolated line to normal operating pressure. This will ease the opening of the valves. Purge any air from the isolated line.
14. Remove tags and lock from downstream valve(s) of system and slowly open.
15. Purge any air if not done so in step 13. This step is not required if working on compressed air systems.
16. Remove tags and lock from upstream valve(s) of system and slowly open.
17. Return equipment that was locked out back to normal operating conditions and check for proper operation.
18. Update electrical lockout book, mechanical isolation log sheets and mechanical isolation log book.
19. Notify users and operators that the work is complete.
20. Inform Mechanical Systems Supervisor on any difficulties that were encountered and that all equipment and lines that were isolated are returned back for normal operation.

By signing below, I have read and understood the above information.

<u>Name</u>	<u>Date</u>
_____	_____
_____	_____
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UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

PROGRAM ADMINISTRATION

PROGRAM ADMINISTRATION OVERVIEW

MONTHLY SAFETY MEETINGS

The Utilities Department conducts safety meetings on a monthly basis. The Supervisor of Operation Systems within Plant Utilities hosts the meeting, chooses the topic, conducts the presentation and records the minutes of the meeting. Each employee that attends signs the attendance sheet. A copy of the attendance sheet can be found in this section.

The meeting format ranges from presentation videos, to an overview of safe work practices in relation to current issues or seasonal work being carried out or coming up within the departments.

The minutes from the safety meetings must be forwarded to the Executive Director of Physical Plant to review. The Executive Director must sign the minutes and return to the appropriate department. The Executive Director of Physical Plant must also attend a safety meeting for each of the departments on a yearly basis, recognizing the safety achievements of the employees.

INCIDENT TRENDS

Each time an employee is involved in an accident / incident, a form must be completed and sent to the coordinator of OH&S, as outlined in the Accident / Incident section of this manual. A copy of the report must go in the employee's personal file for record purposes and retained for three years.

An Incident Trend spreadsheet has been developed to track the amount of incidents each individual employee has had over the past year as well as the number of each type of incident occurring within the department. This information is used to determine where more training is required on an individual basis, as well as for the entire group, in order to provide a safer workplace for all.

When a new incident occurs, the type of incident is recorded along the top of the spreadsheet and the date of the incident is recorded in the corresponding space for the Employee. A sample of the Trend spreadsheet can be found in this section. ***The results of these accidents / incidents are not accounted for on the Trends or Lost Time Days Spreadsheets or in the Lost Time Claims calculation as outlined in this section***

LOST TIME DAYS

For the accidents / incidents resulting in lost time, the number of days is recorded on the Lost Time Days (LTD) Spreadsheet in the corresponding month for the employee. A **Lost Time Day** is defined as any regular scheduled work day that is missed due to an accident / incident occurring on the job.

LOST TIME CLAIMS RATIO

At the end of each year the Lost Time Claims (LTC) ratio is calculated based on the number of Lost Time Days in comparison to the amount of manhours recorded for that employment year. When calculating the LTC ratio, all employee's manhours are accounted for ie. Full-Time, Part-Time, Temporary, and Casual employees. Any absence from work that is not a result of an accident / incident is not accounted for in the manhours or Lost Time Day values ie. vacation days, sick days, days missed as a result of an injury outside of regular scheduled work.

EMPLOYEE EVALUATIONS

Once a year, Employees are evaluated on their job performance. Included in this evaluation Employee safety comprehension and compliance is addressed. The results recorded on the Trends Spreadsheet, is taken into consideration for the evaluation on safety issues.

The evaluation is reviewed with the Employee so they are fully aware of the results. Any feedback, concerns, or suggestions that the Employee may have is discussed at this time. A copy of the evaluation is sent to Human Resources to be placed on the Employee's file, and the Supervisor keeps a copy on file in the department. Employees are also given a copy.

DISCIPLINARY PROCESS FOR VIOLATION OF SAFETY POLICIES & PRACTICES

In the event that a Union Employee's actions are found to be in violation of the safety policies and practices outlined in the Health and Safety Program, the disciplinary process will follow the process outlined in the AUPE Agreement as stated under Article 13 – *Personal Files and Discipline*.

In the event that an APO's actions are found to be in violation of the safety policies and practices outlined in the Health and Safety Program, the disciplinary process will follow the process outlined in the APO Agreement as stated under Section 10 – *Progressive Performance Improvement*.

LOST TIME CLAIMS – (LTC)

Lost time claims are a measurement of the number of lost time days in comparison with the amount of man hours logged over the claims year.

$$\text{LTC} = \frac{\# \text{LTC}(\text{days}) \times 200,000}{[\# \text{ Hours Worked} / \text{year}]}$$

ie.

17 lost time days
1,000,000 manhours / year

$$\frac{17 \times 200,000}{1,000,000} = 3.4 / 100 \text{ person years}$$

SAFETY MEETING

TOPIC: _____

DATE: _____

TIME: _____

NAME: (PLEASE PRINT)

SIGNATURE

DEPARTMENT

[illegible]

This image shows a full page of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook or legal stationery. There are no margins, text, or other markings on the page.

Meeting Coordinator / Department

TJ Hanson - Director
Facilities Operations & Maintenance

Date Approved _____

TOOLBOX SAFETY MEETING

TOPIC: _____ DATE: _____ TIME: _____

NAME: (PLEASE PRINT)	SIGNATURE	DEPARTMENT
_____	_____	_____
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SAFETY ITEMS DISCUSSED: _____

EMPLOYEE SUGGESTIONS: _____

CORRECTIVE ACTION: _____

Meeting Coordinator / Department

Date Submitted

Reviewed by:

TJ Hanson
Associate Executive Director, Facilities

Date Reviewed

UNIVERSITY OF LETHBRIDGE
FACILITIES

HEALTH & SAFETY PROGRAM

SAFE WORK PRACTICES

AERIAL BUCKETS

PRETRIP INSPECTION

- Hydraulic oil
- Leaks
- Hydraulic lines & hoses (fittings & condition)
- Hydraulic cylinders (condition, leaks)
- Hydraulic cylinders pins and retainers
- Boom pins and retainers
- Boom for cracks and damage
- Loose bolts (wire lies)
- Cable condition
- Hand contact boom waxed weekly, cleaned with static cloth daily (minimum)
- Boom cradle (condition & safety switch)
- Boom lock and mount (bolts, cracks)
- Pistol grip control (air lines)
- Condition of lower controls (turrent)
- Rotation motor
- Turrent (loose bolts, leaks, welds and cracks)
- Rescue pack
- Boom rescue strap and O ring
- Emergency power switches (torrent, boom outriggers)
- outriggers (pins, welds & cracks)
- Outrigger pads
- Bucket condition (liner, cover)
- Bucket attachments (bolts, pins, cylinders)
- Bucket tilt lever locked (lay down lever)
- Keep deck clean (good housekeeping)

JIB

- Controls (condition)
- Air lines to pistol control
- Jib and keeper pins
- Winch line
- Winch line pulleys
- Jib position cylinder (bolts & condition)
- Hydraulic lines
- Jib load chart and angle indicator

SET UP

- P.T.O.engaged
- Brakes applied
- Use outrigger and boom selector
- Lower outriggers raising unit slightly off ground (pads as required).

OPERATING PROCEDURES

- Unlock boom
- Raise unit to top of pole using lower controls
- Lower unit to allow entry into bucket
- Enter bucket and hook-up lanyard
- Raise up to over center
- Lower to ground while over center
- Raise and move side to side
- Return over center and stow properly

HOUSEKEEPING

- Keep aisles, walkways and stairs clear.
- Do not block fire exits and fire fighting equipment with materials.
- Materials should be stored with adequate room between for easy access.
- Tools and materials should be cleaned up and put away in designated storage areas after a job is done and at the end of each workday.
- Keep all articles to be disposed of in a designated location and remove regularly.
- Clean up spills immediately in order to avoid a slipping hazard use wet floor signs.
- Store flammable liquids in approved sealed containers away from open flame, sparks or sources of ignition.

USE OF CLEANING SOLVENTS AND FLAMMABLES

Cleaning solvents are used in the day-to-day construction work to clean tools and equipment. Special care must be taken to protect the worker from hazards, which may be created from the use of these liquids. Wherever possible, solvents should be nonflammable and nontoxic.

The foreman must be aware of all solvents / flammables that are used on the job, and be sure that all workers who use these materials have been instructed in their proper use, and any hazard they pose.

The following instructions or rules apply when solvents / flammables are used:

- Use non-flammable solvents for general cleaning.
- When flammable liquids are used, make sure that no hot work is permitted in the area.
- Store flammables and solvents in special storage areas.
- Check toxic hazards of all solvents before use. Refer to Material Safety Data Sheets (MSDS).
- Provide adequate ventilation where all solvents and flammables are being used.
- Use goggles or face shields to protect the face and eyes from splashes or sprays.
- Use rubber gloves to protect the hands.
- Wear protective clothing to prevent contamination of worker's clothes.
- When breathing hazards exist, use the appropriate respiratory protection.
- Never leave solvents in open tubs or vats - return them to storage drums or tanks.
- Ensure that proper containers are used for transportation, storage and field use of solvents / flammables.
- Where solvents are controlled products, ensure all employees using or in the vicinity of use or storage are trained and certified in the Workplace Hazardous Materials Information System (WHMIS). Ensure all WHMIS requirements are met.

DEFECTIVE TOOLS

Defective tools can cause serious and painful injuries.

If a tool is defective in some way, **DON'T USE IT.**

Be aware of problems like:

- chisels and wedges with mushroomed heads
- split or cracked handles
- chipped or broken drill bits
- wrenches with worn out jaws
- tools which are not complete, such as files without handles

To ensure safe use of hand tools, remember:

- never use a defective tool
- double check all tools prior to use
- ensure defective tools are repaired

Air, gasoline or electric power tools, require skill and complete attention on the part of the user even when they are in good condition. Don't use power tools when they are defective in any way.

Watch for problems like:

- broken or inoperative guards
- insufficient or improper grounding due to damage on double insulated tools
- no ground wire (on plug) or cords of standard tools
- the on/off switch not in good working order
- tool blade is cracked
- the wrong grinder wheel is being used
- the guard has been wedged back on a power saw

USE OF DRILL PRESS

- **Wear appropriate PPE (Safety Glasses & Hearing Protection).**
- Never attempt to use a regular auger bit on the drill press or in the hand drill. Auger bits for this machine have the lead screw cut smooth and the square tang cut off.
- Clamp small pieces in a drill vise or clamp them to the table.
- Keep the table clean, but clean it with a brush. (Not with your hands)
- Wear a shop cap or tie up the hair when working around whirling machinery. Rings, wristwatches, and gloves should not be worn.
- Check to see that the chuck key, drift, and all wrenches are removed before starting the machine.
- Be certain your drills are ground in balance so that they do not tend to whip the work.
- Beware of the coasting machine.
- In using a shaping or routing attachment for the drill press, be sure to study the safety rules for the shaper.
- On deep cuts back out frequently to clean and cool the bit.
- Center punch for drill point. Use only straight sharp drills.
- Drill easily without forcing the bit.

ELECTRICAL SAFETY

Electricity is a powerful form of energy. If abused or used improperly, it can be hazardous, cause shock, start a fire or even kill.

Follow these precautions when working with electrically powered tools and equipment:

- Electrical repairs to tools and equipment, should only be performed by qualified individuals.
- Never use metal ladders near electric power lines.
- Rubber or plastic coated tool handles should be regularly inspected for cracks, cuts and wear.
- Double insulated tools require only two-pronged connections and should be clearly marked.
- Never stand in water when operating electrical equipment. If you must work in damp areas, use a ground fault circuit interrupter (GFCI). If one is not available, insulate yourself by wearing rubber gloves and rubber boots or stand on insulated platforms or mats.
- Before you start cleaning or adjusting a power tool, disconnect it from the power source.
- If an electrical piece of equipment malfunctions, disconnect and lock out the power source immediately and report the trouble to your supervisor. Make sure the power source is positively locked out when the equipment is being worked on.
- Tag all defective or damaged tools and return them for repair.
- Do not overload electrical circuits; this can cause a fire.
- Never put water on an electrical fire. Use the proper type of fire extinguisher such as one with an "ABC" classification.
- Never cut or remove the grounding prong from a plug.

FIRE AND USE OF FIRE EXTINGUISHERS

Good housekeeping is essential in the prevention of fires. Fires can start anywhere and at any time. This is why it is important to know which fire extinguisher to use and how to use it.

Always keep fire extinguishers visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure that care is taken in selecting the right extinguisher.

Types of Fires

Class A: These fires consist of wood, paper, rags, rubbish and other ordinary combustible materials.

Recommended Extinguishers

Water from a hose, pump type water can, or pressurized extinguisher, and soda acid extinguishers.

Fighting the Fire

Soak the fire completely - even the smoking embers.

Class B: Flammable liquids, oil, and grease.

Recommended Extinguishers

ABC units, dry chemical, foam and carbon dioxide extinguishers.

Fighting the Fire

Start at the base of the fire and use a swinging motion from left to right, always keeping the fire in front of you.

Class C: Electrical equipment

Recommended Extinguishers

Carbon dioxide and dry chemical (ABC units) extinguishers.

Fighting the Fire

Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.

FLAMMABLE & TOXIC MATERIALS

Flammable Products

Certain products in use may contain solvent components such as xylene or propanol. These solvents have relatively low flash points and will ignite when exposed to sparks or open flames. The following guidelines must be observed:

- No smoking in or near the work area. Post "No Smoking" signs throughout the work area.
- Type ABC fire extinguishers should be located in easily accessible stations in the work area.
- No open flames or welding torches should be in the work area.
- Enclosed areas create explosive conditions. Use of explosion-proof fans to disperse the vapors, and bring in fresh air.
- Ascertain ventilation requirements prior to using hazardous materials.

Toxic Materials

Toxic or poisonous materials can be transmitted either by the inhalation of vapors, or contact with bare skin. Caution should be exercised when handling uncurled material or solvents.

- The specific vapor respirator required must be determined prior to starting.
- Wear goggles when mixing, or applying.
- Wear gloves, which extend 3/4 upwards the length of employee's forearm. Wear rubber gloves when washing tools with solvent.
- Wear long sleeve shirts and pants.
- Wear protective foot coverings, either rubber boots, or a plastic liner inside shoes.

GRINDING

- **Wear appropriate PPE (Safety Glasses and Hearing Protection).**
- Check the tool rest for the correct distance from the abrasive wheel: maximum 1 /8" or 3 mm.
- Replace the grindstone when adjustment of the rest cannot provide 1/8" or 3 mm clearance.
- If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
- Protect your eyes with goggles or a face shield at all times when grinding.
- Each time a grinding wheel is mounted, the maximum approved speed stamped on the wheel bladder should be checked against the shaft rotation speed of the machine, to ensure the safe peripheral speed is not exceeded. A grinding wheel must not be operated at peripheral speed exceeding the manufacturer's recommendation.
- The flanges supporting the grinding wheel should be a maximum of 1/3 the diameter of the wheel, and must fit the shaft rotating speed according to the manufacturer's recommendation.
- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel.
- Do not stand directly in front of grinding wheel when it is first started.
- Acquire hot work permit

HANTAVIRUS

What is it?

- A virus carried by deer mice.
- The virus is in their urine and droppings.

How do people get Hantavirus?

- People may be infected- by contact with mouse droppings when cleaning out garages, sheds and cabins where mice lived over the winter.
- Sweeping or vacuuming droppings, releases the virus into the air and it is breathed in.
- It is not spread from person to person.

Do other animals carry Hantavirus?

- The only known carrier is the deer mouse (reddish-brown or grey with white fur on the belly and feet.)
- Other rodents may carry the virus so all rodents should be treated as carriers.
- Hantavirus has not caused illness in pets or spread from pets to people.

What signs and symptoms can you have?

- Early symptoms are flu-like: fever, body aches, chills and headache.
- They occur 1-2 weeks after being infected.
- Breathing problems leading to hospitalization occur 2-15 days after early symptoms.

Who is at risk for Hantavirus?

- Only a small percent of the people who come in contact with the virus get ill.
- Most cases have occurred in people with close contact to mice or mice droppings.
- Most cases occur in rural areas.

How do you prevent Hantavirus?

Keep mice / rodents away by:

- Storing food and pet food in metal or plastic containers.
- Sealing holes(anything over 6mm or ¼ in) with steel wool or cement to prevent entry.
- Hauling away trash, old vehicles, old tires where mice / rodents can nest
- Storing garbage in containers with tight fitting lids.
- When entering a building where mice / rodents may live wear a mask so as not to breathe in the dust in the building.
- If using traps or poisons to control mice beware of the danger to children and pets.
- Wild mice should not be kept as pets.

When cleaning mice/rodent infested areas:

- Air out the area for 30 minutes first.
- Wear rubber or plastic gloves.
- Also wear a mask so dust is not inhaled.
- When cleaning heavily contaminated areas a HEPA mask may be purchased at safety supply stores.
- Soak dead rodents, nests, droppings and contaminated items in proper dilution of disinfectant / water solution.
- Pick up debris and place in double plastic bags.
- Do not sweep or vacuum.
- When clean-up is done seal bags, and place with regular garbage for routine pickup. After bags have been removed mop floors with soap, water and then a proper dilution of disinfectant / water solution.
- Dirt floors can be sprayed with a proper dilution of disinfectant/ water solution.
- For heavily infested areas contact a pest control service or a public health inspector for detailed information.

After clean up:

- Wash hands well.
- Dispose of the gloves.
- Used traps should be rinsed with a proper dilution of disinfectant / water solution before being reused.

HAND POWERED LIFTS, ROUSTABOUTS, AND HYJACKS

Winch or jacking devices are great for moving heavy materials or apparatus - they are safe too if the following points are observed:

- Check the equipment for defects before starting the work. Make sure that safeties, catches, brakes and hydraulic hoses are in working order and that there are no frayed cables or loose gears, cogs, or ratchets. Report all mechanical or hydraulic problems to your supervisor immediately - do not use a malfunctioning device.
- Familiarize yourself with the manufacturer's special instructions for safety. Review and check out emergency stopping procedures and load lowering requirements.
- Plan what you intend to accomplish in advance. Before you move a loaded lifting device that has casters or wheels for mobility, make sure the load is secure and the lifting mechanism is set at the lowest operating position. Only move loads over level and even surfaces.
- Do not exceed the device's capacity for lifting loads, heights and travelling limits. Block wheels and casters before lifting.
- Check the attachment points of the tackle blocks and make sure they are strong enough to support the load.
- Position the lift directly under the final position to where equipment or materials is to be raised.
- Never lift the load where it may come in contact with electric power lines, conduit or bus duct unless the electric service has been locked out.
- Check for balance and load distribution, to prevent the lift from tipping or overturning.
- Make sure that only properly instructed personnel operate the lifting device.
- Never indulge in horseplay or practical jokes with power lifting equipment.

USE OF METAL SCAFFOLDS

There are various types of metal scaffolds and they all have a right and wrong way to be erected.

The misuse of scaffolding is the cause of numerous serious injuries. Every worker who designs or constructs a scaffold should be competent and know what the manufacturer's specifications are for that type of scaffold.

The scaffold type, which will be the best suited for the job and capable of withstanding the loads to be imposed on it must be determined before the job begins.

Ensure that:

- The scaffold you intend to use is the correct one for the job.
- The location in which the scaffold is to be constructed is level or is capable of presenting secure footing by use of mudsills or some other device.
- The scaffold will be erected by a competent worker.
- Legislative and manufacturer's requirements have been complied with.
- Safe access and egress to both the scaffold and the general work area has been provided.
- Leveling adjustment screws have not been over extended.
- Tower scaffolds have outriggers or are guyed and have all component parts secured in place (i.e. cross braces, pins, lateral braces).
- Scaffold work platforms have a perimeter guardrail
 - Horizontal rail - 0.92 meters to 1.07 meters above the platform.
 - Intermediate rail - Horizontal rail midway between scaffold platform and top rail.
 - Toe board - Horizontal member at platform level no less than 140mm in height above the platform level.
- Scaffold planks are of number one grade materials with maximum spans of 3.1 meters on light duty and 2.3 meters on heavy duty with a maximum projection beyond the ledger of no more than 300 mm.

MOBILE AERIAL WORK PLATFORM

- *Employees may only operate machine if 'Mobile Aerial Lift Training' course has been taken.*
- *Pre-Use Inspections – Inspect or Test the Following:*
 - Operating and emergency controls
 - Safety devices and limit switches
 - Personal protective devices
 - Tires and wheels
 - Equipment structure
 - Air, hydraulic and fuel systems for leaks
 - Loose or missing parts
 - Cable and wiring harnesses
 - Placards, warning, control markings and operating manuals
 - Handrail systems including locking pins
 - Engine oil level
 - Battery fluid level
 - Coolant level
 - Propane bottle secured (if equipped)
 - Parking brake
 - Horn
- *Function Test:*
 - Base functions and operation
 - Basket function and operation
 - Height / speed limiter switch (put machine in low speed when platform is raised)
 - Motion alarm
 - Hydraulic function test
 - Emergency controls
- *Work Area Inspection:*
 - Manhole covers, grating or unstable surfaces
 - Ramps, inclines or rough surfaces.
 - Electrical hazards overhead
 - Underground utilities
 - Pedestrian / Vehicular traffic
 - Ground Condition

- *Use of Equipment:*

- Never modify or alter equipment unless approved by the manufacturer.
- Never extend work platform with planks or other equipment.
- Always wear fall restraint.
- Fall restraint should be a 4' lanyard.
- Keep platform clean and free of tripping hazards.
- Never operate equipment on incline.
- Do not exceed equipment's working load limit.
- Make sure weight stays centered on platform.
- Only use machine as it is intended.
- Do not exceed side loading on platform.

- *Operating Procedures:*

- Perform pre-use safety inspections (see pre-use inspection) before each use. The aerial platform shall be given a visual inspection and functional test. If any problems are encountered, the aerial lift shall not be used and reported immediately to the Supervisor and Mechanic.
- Do not exceed recommended weight capacity.
- A workplace inspection shall be performed for any hazards such as manholes, roadway problems, slopes, overhead obstructions, wind and weather conditions, inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations and presence of unauthorized persons.
- No one shall travel in a basket, platform or other elevated or aerial device that is moving on a roadway or worksite if road conditions, traffic, overhead wires, cables or other obstructions create danger to the operator or workers.
- Ensure all required PPE is worn when operating aerial lift (see Info Sheet for Safety Belts, Lanyards and Lifelines).
- Do not climb on outside of equipment.
- Do not move the machine while platform is in an elevated position.

USE OF NON-POWERED HAND TOOLS

Common hand tools, which many people take for granted, frequently are the most abused. Misuse of hand tools can become a habit that will cause accidents. Some of the basic rules governing the use of hand tools are as follows:

- Use the right tool for a job. Never use a makeshift or improper fitting tool. Refuse to use tools that aren't in first class condition and report those that give you problems to your supervisor.
- Use wrenches of the right size for the job. Face the jaws of an adjustable wrench in the direction of the pull.
- Make certain that pipe wrench jaws are sharp and chains in good condition so they will not slip.
- Use only tools in good condition. Clean all grease and dirt. Do not use tools with improper handles, including those that are cracked, broken or loose. Hammers or chisels with mushroomed or broken heads should not be used.
- Keep keen-edged blades sharp; store them safely when not in use. Store them with the sharp edge protected. This will help avoid cuts, as well as protect the sharp edge.
- Do not use a hammer with a hardened face on highly tempered tools such as a drill, file, die or jig. Chips may fly.
- Never apply a wrench to moving machinery; stop the machine, then remove all tools before starting it again.
- Never handle any tool in such a manner that you can be injured if it slips. Think about your movements and position your body accordingly.
- Always wear safety goggles when working with hand tools. You only get one pair of eyes.
- Don't carry hand tools in a way that will interfere with using both hands when climbing a ladder.
- Tools should not be put down on scaffolding, overhead piping, on top of step ladders, or other locations from which they could fall on persons below or into equipment.
- Workers carrying tools on their shoulders should pay close attention to clearances when turning so that they will not strike nearby fellow workers.

OVERHEAD DOORS

The following precautions should be reviewed periodically to reduce the number of incidents involving overhead doors.

- Always make sure the overhead door has come to a complete stop before driving through the doorway.
- If the door fails to work properly, get out of the vehicle and push the stop button.
- Don't walk under an overhead door that is not working properly. They are extremely heavy and could cause serious injury or death should they come down.
- Caution: If the overhead door is not working, do not push any other button or try to bring the door down by any other means. Notify Work Control Centre (2602) for issue of a work order.

INSTRUCTIONS FOR USE OF PRESSURE WASHER

- ***Park vehicle away from bay doors and building to allow room to wash and for drainage.***
- ***Turn on water. (Ball valve behind washer)***
- ***Pull trigger on wand to release hose pressure. – Do not unreel or reel up hose under pressure***
- ***Reel out hose***
- ***Turn switch to PUMP (cool water) or BURNER (hot water)***
- ***If soap is needed turn on toggle switch for soap. – there may be a slight delay for soap & hot water***
- ***Turn soap off to rinse vehicle.***
- ***Turn burner off and let the unit run on pump for at least the last minute during rinsing - This will allow the burner to cool down and will use up any heated water.***
- ***When done washing turn off pump.***
- ***Pull trigger on wand to release pressure on hose.***
- ***Put wand in holder and roll hose up. Do not drag wand on ground when rolling up hose***
- ***Clean up mud and grass with shovel and broom.***

USE OF PORTABLE LADDERS

Ladders can be used safely if they are given the respect they deserve.

Before using any ladder, make sure that it is in good condition and is the right ladder for the job to be done.

- When setting up a ladder, secure the base and "walk" the ladder, up into place.
- The ladder should be set at the proper angle of one (1) horizontal to every four (4) vertical.
- Before using a ladder, make sure it is secured against movement.
- When in position, the ladder should protrude one (1) meter above the intended landing point.
- Workers shall not work from the top two rungs of a ladder.
- Don't overreach while on a ladder. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Always face the ladder when using it. Grip it firmly and use the three-point contact method when moving up or down.
- The minimum overlap on an extension ladder should be one (1) meter unless the manufacturer specifies the overlap.
- Keep both metal and wood ladders, away from electrical sources.
- Due to health and safety concerns, a step ladder is not loaned to any building occupant who has not received training approved by U of L Occupational Health & Safety department.

REPORTING RATTLESNAKES

What should you do if you see a rattlesnake?

- Observe but do not attempt to capture the snake.
- Contact the phone number below in the order listed until contact is made.
- **RATTLESNAKE REPORTING CALL SECURITY**
- ***Phone/Cell Number 329-2603 or 329-2345***
- If you are unable to contact Security for removal, the snake still reflects as a safety hazard and must be removed by U of L personnel. Contact Ian Wells (317-0733) to capture the rattlesnake.
 - The container holding the snake must be kept in the shade after capture as rattlesnakes are very heat sensitive.

Relocation of problem rattlesnakes

During summer months the number of rattlesnake sightings on campus increases significantly. The U of L reports these sightings to Reg Ernst who conducts studies and control activities for the City of Lethbridge. Reg indicates the main campus is not a safe site for either the snakes or campus occupants to interact. The City of Lethbridge wants to relocate any problem rattlesnakes. A problem rattlesnake is defined as any rattlesnake found on roads, walkways, around buildings, or areas frequently used by people.

Relocating rattlesnakes is a delicate issue, and considering the potential danger in working with poisonous snakes, it is necessary to have a professional do the removal. Proper relocation involves moving the snake to an area with a suitable wintering den.

Please exercise caution when walking around campus, particularly in the coulees, as snakes are occasionally sighted. Rattlesnakes are not aggressive and given a choice will retreat rather than strike.

Although some people may find them loathsome, rattlesnakes are a naturally occurring species in a properly functioning prairie ecosystem such as we have around Lethbridge. They are practically harmless and will only strike if extremely provoked or stepped on. They play a very important role in the control of rodents and thus reduce the spread of diseases such as hanta virus.

Rattlesnakes are the color of dry prairie grass and have a very well-defined, triangular-shaped head. They may or may not possess rattles. Lethbridge is also home to the bull snake which imitates the rattlesnake by coiling up and shaking its tail, but it does not actually have a rattle. Bull snakes are not poisonous.

If you see a rattlesnake, walk slowly away from it. Give the snake plenty of room to escape from you. Notify Security at 329-2345. They will have a specialist relocate the snake to a natural habitat.

SAFE WORK PRACTICES

In Alberta, rattlesnakes are blue-listed which means they have undergone declines in population or habitat and may be at risk.

Please remember, it is illegal to kill rattlesnakes, possess rattlesnakes or their parts or damage occupied den areas. Many people do not realize that there are significant charges and fines for killing a rattlesnake in Alberta.

PROPER LIFTING TECHNIQUES

The three major causes of back injury are over-extension, poor lifting techniques and trying to lift too heavy an object. The following tips should help reduce the chances of injuring your back.

- Test the load. If too heavy ask for help!
- Keep your back straight.
- Get as close to the object as possible to avoid over-extension.
- Place one foot slightly ahead of the other in the direction you intend to move the object.
- Bend your knees and get a good grip on the object.
- Lift with your legs.
- Move forward in the direction of your most forward foot to avoid twisting your back
- Reverse the procedure when placing the object down.
- If at all possible, keep the objects off of the floor, to reduce the strain of lifting in awkward positions.

To reduce the strain on your back while standing.

- Whenever possible, stand with one foot elevated.
- Change positions often.
- Interrupt long periods of standing by sitting whenever possible.

USE OF EXPLOSIVE / POWDER ACTUATED FASTENING TOOLS

There are a number of tools utilizing an explosive charge in use throughout the construction industry to drive fastenings.

The manufacturers of these devices provide detailed instructions regarding their use and maintenance. These instructions, along with the legislation specifically set out for their use, shall be closely adhered to at all times.

The following general recommendations apply to all explosive/powder actuated tools.

- Only properly trained and qualified operators are to use this type of tool. The user shall possess proof of this training issued by the manufacturer, authorized dealer/distributor, or other competent source.
- The tool must be CSA standard approved for "Explosive Actuated Fastening Tools".
- The tool should be loaded just prior to use with the correct load for the job anticipated. Tools should never be loaded and left to sit or be moved to an alternate work site after being loaded.
- The tool should never be pointed at anyone, whether loaded or unloaded. Hands should be kept clear of the muzzle end at all times.
- Explosive/powder actuated tools should always be stored in their proper lockable boxes.
- Explosive/powder actuated tools must never be used in an explosive atmosphere.
- When used, the tool must be held firmly and at right angles to the surface being driven into.
- Eye protection must be worn by the operator. Where there is a danger of spalling, full-face protection must be worn. Hearing protection is also to be worn in confined areas.
- To prevent free-flying studs, ensure that the material being driven into will not allow the stud to completely pass through it (ie, glass block, hollow tile etc.).
- Manufacturers' recommendations should be consulted and followed whenever there is a doubt about the material being driven into, maintenance procedures or load strength to be used.
- Always be aware of the other workers. Where a hazard to other workers is created by this operation, signs and barricades identifying the hazard area are mandatory.

USE OF STEP LADDERS

As with all ladders, make sure that the Step Ladder is in good condition, and is the right ladder for the job to be done.

- Step Ladders are to be used only on clean and even surfaces.
- No work is to be done from the top two steps of a Step Ladder, counting the top platform as a rung.
- No work is to be done from the back side of the Step Ladder.
- When in the open position ready for use, the incline of the front step section shall be one (1) horizontal to six (6) vertical.
- The Step Ladder is only to be used in the fully opened position with the spreader bars locked in place.
- Tops of Step Ladders are not to be used as a support for scaffolds.
- Don't overreach while on the ladder. Climb down and move the ladder over to a new position.
- Only CSA Standard ladders will be used.
- Due to health and safety concerns, a step ladder is not loaned to any building occupant who has not received training approved by U of L Occupational Health & Safety department.

TRENCHES & EXCAVATIONS

- Employees shall not enter trenches or excavations more than 1.5 meters in depth unless:
 - the walls of the excavation have been cut back to less than 1.5 meters in accordance with Occupational Health and Safety Regulation; or
 - Temporary protective structures such as an approved cage or proper shoring are in place.
- The site supervisor shall ensure that:
 - the spoil pile is kept a minimum of one meter from the edge of excavations deeper than 1.5 meters; and
 - heavy vehicles or objects are kept away from the excavation a distance equal to the depth of the excavation unless the shoring has been certified as being able to withstand such weights.
- Employees installing shoring, stringers or bracing shall use a ladder and work downward from the top of the excavation, installing each brace in descending order.
- Employees removing shoring, stringers or bracing shall use a ladder and work upward from the bottom of the excavation, removing each brace in ascending order.
- Employees shall not place or stack tools / material near the edge of the excavation where their falling could cause injury to the employees in the excavation.
- Near plant sites, monitor air quality including O₂ content and explosive limits before entering trenches.
- Within operating plants, treat as a confined space.

USE OF CHAIN SAWS

Chain saws are used for many jobs in construction. Since this tool was primarily meant for use in the logging industry, it can be an unfamiliar tool to some workers.

Workers must be trained in its safe use before using a chain saw.

This training must include a minimum of the following elements:

- The proper personal protective equipment to be worn is set out by the manufacturer and Occupational Health & Safety Legislation.
- Fuelling of the saw must be done in a well-ventilated area and not while the saw is running or hot.
- An approved safety container must be used to contain the fuel used along with a proper spout or funnel for pouring.
- The correct methods of starting, holding, carrying, or storage and use of the saw as directed by the manufacturer must be used.
- Ensure that the chain brake is functioning properly and adequately stops the chain.
- The chain must be sharp, have the correct tension, and be adequately lubricated.
- When carrying / transporting a chain saw the bar guard must be in place, the chain bar must be toward the back and the motor must be shut off.
- The chain saw must not be used for cutting above shoulder height.
- Chain saws will comply with CSA Standards 262.1-M-77.

USE OF COMPRESSED AIR

Air powered tools in construction range from stapling guns to jack hammers. If not treated with respect, these tools can become a powerful enemy rather than a servant.

- Compressed air must not be used to blow debris or to clear dirt from any worker's clothes.
- Compressed air must not be used to blow dust, chemicals, metal filings, etc. from work surfaces. Surfaces should be swept clean.
- Ensure that the air pressure has been turned off and the line pressure relieved before disconnecting the hose or changing tools.
- All hose connectors must be of the quick disconnect pressure release type with a "safety chain / cable".
- Wear personal protective equipment such as eye protection and face shields, and ensure other workers in the area are made aware of or have restricted access to the hazard area.
- Hoses must be checked on a regular basis for cuts, bulges, or other damage. Ensure that defective hoses are repaired or replaced.
- A proper pressure regulator and relief device must be in the system to ensure that the correct desired pressures are maintained.
- The correct air supply hoses must be used for the tool / equipment being used.
- The equipment must be properly maintained according to the manufacturer's requirements.
- Follow manufacturer's general instructions and comply with legislated safety requirements.

USE OF ELECTRICAL EXTENSION CORDS

Extension cords are one of the most abused and neglected items on the job site. They are run over, stretched, pulled, twisted and exposed to all the elements. They have been the cause of more accidents than the tools for which they are used.

The following recommendations should be observed whenever extension cords are used:

- Prior to use, inspect cords to ensure that:
 - The insulation is intact around the plugs at both ends of the cord.
 - The pins on the plugs are not broken or burned.
 - The outer jacket of the cable is intact along its entire length.
- Extension cords should be replaced or repaired when a defect is found.
- Do not assume that everyone is able to repair or replace plug caps. All personnel should be educated to recognize the importance of properly wired circuits.
- Use only cords that are rated for outdoor use on construction jobs. These industrial cables (types S, SO, SOW) are oil, water, and abrasion resistant.
- Never unplug any cord by pulling the cable.
- Never lay out a cord in any area where it could be damaged by vehicular or pedestrian traffic or where materials could fall or be piled on it.

USE OF POWER TOOLS

All power tools are designed for unique applications, they have their limitations and can create potential hazards when improperly used. Here are some points to remember when using power tools:

- The operation and repair of any power tool must be restricted to experienced, trained, authorized personnel.
- Select the proper tool for the job. The size of the power tool to be used is based on both the limitations of the tools themselves and the amount of work to be done.
- Always be alert to potential hazards in the area such as debris, damp floors or combustible materials. In wet areas, use insulated platforms, rubber mats, rubber gloves and rubber boots for an additional factor of safety.
- Make sure all power tools are of the double-insulated type or they are properly grounded. If the tool is equipped with a three-prong plug, use it as it is meant to be used. Electrical circuits intended for power tools should be provided with ground fault circuit interceptors (GFCI's)
- Appropriate protective clothing should be worn at all times. Avoid wearing loose clothing or jewelry that can catch in moving-parts. Wear safety glasses, hearing protection, and / or a dust mask if the operation requires.
- Be sure not to handle a power tool in a manner that can injure you if it slips. Think about your movements and position your body accordingly. Keep proper footing and balance at all times. Avoid over reaching.
- Never rest a power tool against the body when loading or making adjustments. Use brushes, vacuuming equipment or special tools to remove chips or sawdust. Secure work using a clamp or vice when practical. Never apply a power tool to a moving object.
- Keep guards in place and in working order. Don't remove or wedge the guard out of the way. If the guard has to be retracted, use the handle on the guard.
- Beware of accidental start-up. Make sure the switch is OFF before plugging in the cord and before investigating a power loss. Do not carry a plugged-in tool with your finger on the switch.
- Have all power tools serviced by a professional if it shows the slightest defect or is not running properly.

USE OF POWER TOOLS (cont.)

- Clean your tools after you're finished with your work. Make sure keen-edged blades, drill bits, routers, etc. are sharp, regularly maintained and stored in a dry secure place where they won't be tampered with.
- Don't set the tool down or leave it unattended until all moving parts stop.

USE OF PORTABLE GRINDERS

Abrasive wheels can cause severe injury. Proper storage of new wheels, proper use of wheels and proper maintenance of wheels must be observed.

- Familiarize yourself with the grinder operation before commencing work.
- Ensure proper guards are in place and that, safety glasses, face shields, gloves and safety boots are worn when using portable grinders.
- Never exceed the maximum wheel speed (every wheel is marked). Check the speed marked on the wheel and compare it to the speed on the grinder.
- When mounting the wheels, check them for cracks and defects, ensure that the mounting flanges are clean and the mounting blotters are used. Do not over tighten the mounting nut.
- Before grinding, run newly mounted wheels at operating speed to check for vibrations.
- Do not use grinders near flammable materials.
- Never use the grinder for jobs which it is not designed for, such as cutting.

PROPER USE OF ROTATING EMERGENCY FLASHING WARNING LIGHTS ON VEHICLES

Why do we have these lights?

- Service vehicles that park on roadways or along curbs on campus, in order to do their work, often create a traffic hazard. Flashing warning lights have been installed on all service vehicles to help increase their visibility to oncoming vehicles.

When are flashing lights used?

Flashing lights must be used when:

- parking along any curbs on campus
- stopping/parking in the middle of roadways or parking lot lanes
- leading a slow moving vehicle when hauling trailers or materials

Flashing lights are not used when:

- driving off campus - It is illegal for U of L to use these lights off campus.
- parking in parking spots or when off roadways

UNIVERSITY OF LETHBRIDGE FACILITIES

HEALTH & SAFETY PROGRAM

PERSONAL PROTECTIVE EQUIPMENT

“INFO SHEET” FOR EYE & FACE PROTECTION

GENERAL INFORMATION

This PPE is designed to protect the worker from such hazards as:

- flying objects and particles,
- molten metals,
- splashing liquids, and
- ultraviolet, infrared and visible radiation (welding).

This PPE has two types. The first type, "basic eye protection", includes:

- eyecup goggles
- monoframe goggles and spectacles with or without side shields

The second type, "face protection," includes:

- metal mesh face shields for radiant heat or hot and humid conditions
- chemical and impact resistant (plastic) face shields
- welders shields or helmets with specified cover
- filter plates and lens

Hardened glass prescription lens and sport glasses are not an acceptable substitute for proper, required Industrial safety eye protection.

Comfort and fit are very important in the selection of safety eyewear. Lens coatings, venting or fittings may be needed to prevent fogging or to fit with regular prescription eyeglasses.

Contact lens should NOT be worn at the work-site. Contact lens may trap or absorb particles or gases causing eye irritation or blindness. Hard contact lens may break into the eye when hit.

Basic eye protection should be worn with face shields. Face shields alone often aren't enough to fully protect the eyes from work hazards. When eye and face protection is required, advice from the OH&S office, Material Safety Data Sheet (MSDS) or your supplier, will help in your selection.

For more information, look at:

Alberta's O. H. & S. Act, Regulation & Code and
CSA Standard "Industrial Eye and Face Protectors" 294.3 - M1982.

PERSONAL PROTECTIVE EQUIPMENT

Do

- ensure your eye protection fits properly (close to the face)
- clean safety glasses daily, more often if needed
- store safety glasses in a safe, clean, dry place when not in use
- replace pitted, scratched, bent and poorly fitted PPE (damaged face/eye protection interferes with vision and will not provide the protection it was designed to deliver).

Don't

- modify eye/face protection
- use eye / face protection which does not have a CSA certification (CSA stamp for safety glasses is usually on the frame inside the temple near the hinges of the glasses)

Eye Protection For Welders

Welders and welders' helpers should also wear the prescribed equipment. Anyone else working in the area should also wear eye protection where there is a chance they could be exposed to a flash.

“INFO SHEET” FOR FOOT PROTECTION

General Information

Safety footwear is designed to protect against foot hazards in the workplace. Safety footwear protects against compression, puncture injuries, and impact.

Safety footwear is divided into three grades, which are indicated by colored tags and symbols.

The tag color tells the amount of resistance the toe will supply to different weights dropped from different heights.

The symbol indicates the strength of the sole. For example, a triangle means puncture-resistant sole able to withstand 135 kg (300 ft. lbs.) of pressure without being punctured by a 5 cm (2 inch) nail. For more information, look at Alberta's O. H. & S. Statute and Regulations or CSA Standard "Protective Footwear" 2195-M1981.

In construction, it is recommended that only the green triangle grade of footwear, which also gives ankle support, be used.

Your choice of protective footwear should always over protect, not under protect.

Do

- choose footwear according to job hazard and CSA Standards.
- lace up boot and tie laces securely; boots don't protect if they are a tripping hazard or fall off.
- use a protective boot dressing to help the boot last longer and provide greater water resistance (wet boots conduct current).
- choose a high cut boot to provide ankle support (less injuries).

Don't

- wear defective safety footwear (i.e., exposed steel toe caps).
- under protect your feet or modify safety footwear.

“INFO SHEET” FOR HEAD PROTECTION

General Information

Safety headwear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

In construction, the recommended type of protective headwear is the Class B hard hat which has the required "dielectric strength". There are many designs but they all must meet the CSA requirements for Class B Industrial head protection.

Most head protection is made up of two parts:
the shell (light and rigid to deflect blows)
the suspension (to absorb and distribute the energy of the blow)

Both parts of the headwear must be compatible and maintained according to manufacturer's instructions. If attachments are used with headwear, they must be designed specifically for use with the specific headwear used. Bump caps are not considered a helmet. In Alberta they can only be used when the only hazard is where a worker might strike his/her head against a stationary object.

Inspection and Maintenance

Proper care is required for headgear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet radiation (welding). The usual maintenance for head gear is simply washing with a mild detergent and rinsing thoroughly.

Do:

- replace headgear that is pitted, holed, cracked or brittle
- replace headgear that has been subjected to a blow even though damage cannot be seen
- remove from service any headgear if its serviceability is in doubt
- replace headgear and components according to manufacturer's instructions
- consult OH&S or your supplier for information on headgear.

Don't:

- drill, remove peaks, alter the shell or suspension in any way
- use solvents or paints on the shells (makes shells "break down")
- put chin straps over the brims of Class B headgear
- use any liner that contains metal or conductive material
- carry anything in the hard hat while wearing the hard hat

“INFO SHEET” FOR HEARING PROTECTION

General Information

Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

The "rule of thumb" for hearing protection is: use hearing protection when you can't carry on a conversation at a normal volume of voice when you are 3 feet apart.

Remember this is only a rule of thumb. Any sound over 80 dba requires hearing protection. Hearing loss can be very gradual, usually happening over a number of years.

The most common types of hearing protection in the construction industry are earplugs and earmuffs. If you choose to use the other types of hearing protection, ask your safety supplier or RSS office for further information.

It is important to have different styles of hearing protection available. Different styles allow a better chance of a good fit. Each person's head, ear shape and size is different. One style may not fit every person on your crew. If hearing PPE does not fit properly or is painful to use, the person will likely not use it. If the hearing protection is not properly fitted, it will not supply the level of protection it was designed to deliver.

Most earplugs, if properly fitted, generally reduce noise to the point where it is comfortable (takes the sharp edge off the noise).

If your hearing protection does not take the sharp edge off the noise, or if workers have ringing, pain, headaches or discomfort in the ears, your operation requires the advice of an expert.

Workers should have their hearing tested at least every year, twice a year if they work in a high noise area.

OH&S NOISE REGULATION – EXPOSURE LIMITS

TABLE 1
OCCUPATIONAL NOISE LEVEL EXPOSURE LIMITS
(Figures to be prorated if not specified)

<u>Exposure Level (dBA)</u>	<u>Duration</u>
82	16 hours
83	12 hours
84	10 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 min
100	15 min
103	8 min
106	4 min
109	2 min
112	1 min
115 and greater	0

Where applicable, values have been rounded to nearest whole digit

TABLE 2
SELECTION OF HEARING PROTECTORS

<u>Maximum Noise Level (dBA)</u>	<u>CSA Class of Hearing Protector</u>
85-89	C
90-95	B
96-105	A
Greater than 105	A plug + A or B muff

TABLE 3
PERMISSIBLE BACKGROUND NOISE CONDITIONS
FOR AUDIOMETRIC TESTING

<u>Octave Band Centre Frequency</u>	<u>Maximum Levels (dBA)</u>
500	30
1000	30
2000	37
4000	47
8000	52

****For more information refer to Occupational Health & Safety Noise Regulation***

“INFO SHEET” FOR RESPIRATORY PROTECTION

General Information

Respiratory protection falls into two major categories. The first category is Air Purifying Respirators (APRs) which are particle (dust) chemical cartridges but NO visor plate. The second category is Atmosphere Supply Respirators, including self-contained breathing apparatus (SCBA), air line systems and protective suits that completely enclose the worker and incorporate a life support system.

Only APRs will be dealt with here. The second category of respirators requires much more specific information and training. If you need to use Atmosphere Supplying Respirators, you should get expert advice.

APRs

There are two basic types of APRs:

- disposable fibre type with or without charcoal or chemical filter "buttons" and
- the reusable rubber face mask type with disposable or rechargeable cartridges.

The choice depends on your job, labor, cost, and your maintenance facility.

It's Important to remember that APRs are limited to areas where there is enough oxygen to support life. APRs don't supply or make oxygen.

The service life is affected by the type of APR, the wearer breathing demand, and the concentration of airborne contaminants. When an APR is required, consult the Material Safety Data Sheet (MSDS), OH&S or supplier for the exact specifications for the APR.

Facial hair can prevent a good seal and fit of an APR: One to three days growth is the worst. Follow the manufacturer's instructions to the letter regarding the mask, filters, cartridges and other components. Workers who must use respiratory protection should be clean shaven.

An APR is only as good as its seal and its ability to filter out the contaminants it was designed to filter.

Combination Respirators

This type of APR combines separate chemical and mechanical filters. This allows for the change of the different filters when one of them becomes plugged or exhausted before the other filter (usually the dust filter plugs up before the chemical filter). This type of respirator is suitable for most spray painting and welding. For more information check the:

- Material Safety Data Sheet (MSDS)
- OH&S Act, Regulation & Code
- the local OH&S office
- the safety equipment supplier

For more information, look at:

Alberta OH&S Act, Regulation & Code
CSA Standards "Compressed Breathing AID" Z180.1 - M1978
"Selection, Care and Use of Respirators" 294.4 - M1982
Chemical Hazards Regulation (Alberta Reg. 8/82)

Do

- train workers very carefully in the APR's use, care and limitations
- ensure that respirators are properly cleaned and disinfected after each shift, according to the manufacturer's instructions
- dispose of exhausted cartridges and masks in sealed bags or containers
- keep new, unused filters separate from old, used filters
- monitor APR use; they are useless just hung around the neck
- replace filters when breathing becomes difficult.

Don't

- use for protection against materials which are toxic in small amounts
- use with materials that are highly irritating to the eyes
- use with gases that can't be detected by odor or throat or nose irritation
- use with gases not effectively halted by chemical cartridges regardless of concentration (read the cartridge label)
- use respirators or masks if the serviceability is in doubt ,
- use APRs where oxygen content in the air is less than 18 % or 18 kilopascals (partial pressure or greater)

“ INFO SHEET” FOR SUN PROTECTION

For the purposes of this manual and work performed on The University of Lethbridge campus, the guidelines for Sun Protection are defined by but not limited to the following:

- Shirts with sleeves of not less than 4” when measured from the underseam to the sleeve hem.
- Full length pants that cover the top of work boots.
- Eye protection with tinted lenses to reduce / block Ultraviolet (UV) rays.
- Hats with a brim that will provide adequate protection from the sun for neck, ear, and face areas. (*Recommended*)
- Sunscreen with a recognized Sun Protection Factor (SPF) of 15 or higher. (Note: Sunscreen should be applied at least 20 minutes before going out into the sun as recommended by Health Canada). (*Recommended*)

For more information on the effects of exposure to sunlight refer to the Health Canada website located at www.hc-sc.gc.ca.

“INFO SHEET” FOR FALL PROTECTION

General Information

As outlined in the AHRE Occupational Health and Safety Code; Part 9 Fall Protection;

- 139 (1)** An employer must ensure that workers use a fall protection system at a temporary or permanent work area if
- (a)** a worker may fall 3 meters or more, or
 - (b)** there is an unusual possibility of injury if a worker falls less than 3 meters.

Employers must develop a fall protection plan where the above is true, to include the following;

- 143 (2)** A fall protection plan must specify
- (a)** the fall hazards at the work site,
 - (b)** the fall protection system to be used at the work site,
 - (c)** the procedures used to assemble, maintain, inspect, use and disassemble the fall protection system, and
 - (d)** the rescue procedures to be used if a worker falls, is suspended by a personal fall arrest system or safety net and needs to be rescued.

Full body harness systems are to be used to provide workers working at heights above ground level with freedom of movement and protection from falls. These devices will arrest a fall and absorb some of the shock of the fall. The systems are usually worn around the body and attached to a lanyard, fall arresting device or rope grab. Better quality systems usually have some form of shock absorber in the system.

A lifeline should never be used as a service line. The only time a lifeline becomes a load bearing line is in the event of a fall. At all other times it should be just slack enough to permit free movement on the service lines.

It is very important to get quality advice in the selection, purchase and maintenance of your fall arresting equipment.

Please refer to the following CSA and ANSI Standards when selecting equipment;

- 145**
- (1)** Harnesses: CAN/CSA-Z259.10-M90 (R1998), *Full Body Harnesses*
 - (3)** Lanyards: CAN/CSA-Z259.1-95 (R1999), *Safety Belts and Lanyards*
 - (4)** Shock Absorbers: CAN/CSA-Z259.11-M92 (R1998), *Shock Absorbers for Personal Fall-Arrest Systems*
 - (5)** Connecting Components: CAN/CSA-Z259.12-01, *Connecting Components for Personal Fall Arrest Systems (PFAS)*

PERSONAL PROTECTIVE EQUIPMENT

Do

- obtain expert advice before purchasing a fall arresting device
- properly train and practice with the system you decide to use
- use webbing type harnesses instead of leather harnesses
- use only the manufacturer's components for replacement parts
- inspect carefully before each use (inspection to be performed by a trained worker)
- have the harness fitted snugly to the worker using the system
- ensure that the anchor points are secure and able to support the load In the event of a fall
- follow the manufacturer's instructions on care and use
- ensure all lines used with the systems have thimbles
- use only the proper safety rated fastenings with the system
- use a full body harness with shock absorber whenever possible

Don't

- modify, change or put additional holes in the harness or hardware
- jerry-rig the system
- use the system for any other than its intended use
- use the lifeline for a service line