

Energizer

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Personal Care

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Canada



Walkerton and Hanover Facility House Rules for Contractors

January 2011

I. Welcome

THESE “HOUSE RULES” ARE SPECIFIC TO ENERGIZER CANADA, WALKERTON/HANOVER FACILITIES AND SHOULD BE READ IN CONJUNCTION WITH THE GLOBAL “CONTRACTOR SAFETY COMPLIANCE PROGRAM”

This handbook summarizes Facility specific procedures (“House Rules”) with which all Contractors performing construction, renovation, and equipment installation or maintenance shall comply when working for Energizer Canada. Where these differ from the Contractor Safety Compliance Program (CSCP) document, this document shall apply. Where “Ref: CSCP” follows a title, the requirements below are additional to the CSCP document, otherwise the requirements in this document replace those in the CSCP.

Energizer Canada maintains a safe, secure, and environmentally protective facility. Contractors doing business at Energizer properties are responsible for ensuring that their employees and subcontractors are familiar with all applicable local, provincial and federal laws, and with the attached Energizer Policies and Procedures. A safe, healthful and environmentally protective worksite is a shared goal. Energizer continues to expect that our contractors will take the necessary measures and actions to ensure the safety of their employees and at the same time, protection of the environment.

II. Energizer Expectations

It is the policy of Energizer Canada to require that the provisions of the Occupational Health and Safety Act (OHSA), applicable Regulations and Corporate policy be complied with:

- where Energizer contracts the performance of work or services (non construction) and
- where Energizer contracts a Constructor as defined in the Act to undertake a project.

Where the Global CSCP references “OSHA”, it is interchangeable with “OHSA” in Canada, and the Ministry of Labour as the administrators of the Act and Regulations.

III. Substance Abuse Screening and Background Checks

Drug testing and back-ground checks are not a requirement in Canada, however Energizer expects Contractors to have a Substance Abuse Program which provides for zero tolerance for being under the influence of illegal drugs or alcohol while performing work on behalf of the Contractor.

IV. Pre-Qualification of Contractors

The Energizer Contractor Representative (ECR), SHEA Coordinator and Project Engineer will conduct a “Pre-Qualification Review” of potential contractors to judge their safety, health and environmental culture and past performance as an indicator of their capability to work safely at this worksite. This is the most important performance measure in the control of Energizer to assure safe performance.

All contractors are required where applicable to provide Energizer (upon request as part of the Pre-Qualification Review) the following:

- WSIB clearance certificate
- Third party liability insurance
- Where applicable licensing, certification notification, inspections and approvals
- Occupational health and safety policy and program
- Employee training
- Hazardous materials inventory
- Health and Safety violations and convictions under the Act.

V. Emergency Procedures

A. Fires, spills and medical emergencies

1. Must be reported immediately **Page 809** or dial the Receptionist at **ext. 7301** in Walkerton; Dispatch at **ext. 222** in Hanover from the nearest phone. Advise of the location and nature of your emergency.
2. There are trained First Aid Attendants in each department in the facilities. Posters are located in the Employee Entrance and individual departments that identify those colleagues by name and photograph. In the event of serious injury requiring immediate medical attention, contact a First Aid Attendant and/or the Receptionist/Dispatcher.
3. In the event of a fire, do not attempt to extinguish. Immediately leave the area and evacuate the facility via the nearest designated emergency exit or secondary emergency exit (review maps in your work area). Report the fire by activating the manual fire alarm pull station located at each emergency exit. Upon evacuation, report to the marked location and advise them of the nature and location of the fire.
4. In the event of a spill of a hazardous material, do not attempt to clean up. Notify the SHEA Coordinator by dialling "**5243**" on the nearest phone in Walkerton or **519-540-8436**. Advise of the location and nature of the spill. **Do not place hazardous materials in a trash can or sink, regardless of circumstances.**
5. Eyewash Station and Safety Shower are located throughout the facilities
 - a) Know the location of the nearest eyewash station and safety shower in the area.
 - b) In the event of a chemical splash, flush eyes or body part for at least fifteen (15) minutes, and then seek medical attention.

B. Emergency Alarms

1. Normal Working Hours

- a) WARNING ALARM (intermittent tone) - DO NOT EVACUATE THE BUILDING.
Our emergency warning alarm is an intermittent tone at one second intervals; the location of the emergency may be announced over the public address system. The announcement directs the Emergency Response Team and alerts everyone else in the facility to prepare for a possible building evacuation.
- b) EVACUATION ALARM (blast at half-second intervals) - EVACUATE THE BUILDING
Our evacuation alarm is an intermittent blast at half-second intervals. If you hear this tone, leave the building through the nearest exit. All exits are marked with lighted signs. If the electricity fails, exits are lighted by emergency power. Assemble at the marked location across the parking lot and report to the ECR immediately.
- c) All Clear Signal (Announcement)
When it is safe to return to the building, exit shelter, or to stop being on alert, an "all clear" is passed along verbally by the facility representatives. Entrance to the facility can only be made through the Lobby (main entrance) or the Employees' Entrance on the opposite side of the facility by the employees' parking lot. Security badges must be worn and displayed in order to re-enter the facility.

2. After Hours

Those contract employees, working extended hours (i.e. if they will be in the building beyond 4:30 PM) must:

- i) Notify the receptionist at the Lobby entrance in Walkerton or with the Dispatcher in Hanover upon signing in that expect to stay beyond 4:30 PM
 - ii) Be in the company of the ECR or another designated Energizer employee at all times.
- a) EVACUATION ALARM - EVACUATE THE BUILDING
All emergencies will be considered a fire alarm event and you will be expected to evacuate. If you hear the alarm, leave the building through the nearest exit. All exits are marked with lighted signs. After exiting the building, go around to the marked location in the "Employees' Parking Lot" and check-in with the Afternoon Shift Supervisor. When given permission, re-enter the building through the employees' entrance only.

VI. General Rules and Requirements

A. Working hours

1. Energizer and the Contractor must agree on the Contractor's regular working hours, in general working hours are from 7:00 AM to 3:30 PM on Monday through Friday.
2. ECR must know and approve of overtime work on weekends, and 2nd or 3rd shifts.

B. Visitor badges

(Ref: CSCP "Contractor Badges")

1. Contractors must initially enter at the Walkerton facility through the Main Lobby on the west side of the building (across from Weber's Electric). Contractors must enter the Hanover facility through the Driver's Door on the south side of the building (facing McDonald's).
2. The contractor/contractor's employee(s) must sign log book and will receive a Visitor's Badge after completing the sign-in.
3. The badge must be worn at all times while in the facility and should be located on the individual so that it is readily visible.
4. Contractors should bring materials into the facility through the Receiving area ONLY and not through the lobby.

C.

Parking

(Ref: CSCP "Vehicle and Traffic Safety")

1. Contractors should park company vehicles (i.e. service trucks) in the visitor spaces located in the West parking lot in Walkerton, or on the South side of the Hanover facility near the Driver's entrance.
2. Permission to park elsewhere, such as at a bay door, must be obtained from the ECR.
3. The Contractor and his employees may park their personal automobiles in the "Employee's parking lot" in either location.
4. There are no railroad tracks or cars that enter the facilities.

D. Injuries and Illnesses

(Ref: CSCP "Accidents and First Aid")

1. Contractors/Contractor's Employee(s) must report work related injuries and illnesses, unsafe conditions, and near misses, immediately to their ECR. A written report must be promptly submitted to the Safety, Health, Environmental Affairs (SHEA) Coordinator at **ext. 5243/519-540-8436**.
2. Universal Precautions shall be observed by all contractors to prevent contact with blood or other potentially infectious materials. All bleeding must be treated in the First Aid Room and recorded on the dispensary log.

E. Environmental Issues

(Ref: CSCP "Environmental Issues")

1. Energizer Canada complies with a variety of federal, provincial and local environmental laws, rules and regulations. Prior approval of Contractor's clean-up procedures for work being done must be obtained from the designated Energizer Company Representative.
2. The Walkerton facility does store hazardous wastes as defined by Reg. 347 under the Environmental Protection Act. The Contractor should be aware of any possible liability under the EPA and its regulations. All wastes, hazardous or otherwise, generated by the Contractor are the responsibility of the Contractor and must be disposed of in accordance with all local, provincial and federal regulations.
3. **The Contractor is not permitted to dispose of any waste in Energizer's storm or sanitary sewer systems.** Contractor employees are not allowed to discharge any toxic or harmful contaminant into the air, waste water (sewer) systems, or storm water systems. Chemicals and/or toxic materials must be disposed of properly and shall not be placed in ordinary trash containers.
4. Any accidental spill and/or discharge shall be reported immediately by dialing your ECR, the SHEA Coordinator at **ext. 5243/519-540-8436** or any Energizer supervisor.
5. **The Contractor must store flammable liquids in an approved container at a safe distance from buildings, must identify contents, and obtain approval from the Energizer Safety, Health Environmental Affairs (SHEA) Coordinator.**
6. Liquid storage areas must be diked or otherwise confined, to control leaks or accidental spills.

F. Hazardous Work Permits

(Ref: CSCP "Hazardous Work Permits")

The Contractor must obtain Hazardous Work Permits signed by the Maintenance Supervisor, Project Engineer, Supervisor or Manager to perform any of the following operations:

- i) Use of ignition sources in restricted spaces
- ii) All welding and cutting in the facility
- iii) Accessing the roof
- iv) Opening process equipment
- v) Electrical hot work
- vi) Making excavations and trenches
- vii) "hot pipe" tapping
- viii) Operating heavy equipment around electrical power lines
- ix) Working in manholes or other confined spaces
- x) Working in oxygen-enriched, oxygen-deficient, or other potentially hazardous environments
- xi) Breaking or cutting lines or opening equipment which did or could contain toxic, corrosive, flammable, hot or pressurized materials
- xii) Observing energized and unguarded or open exposed electrical equipment.

G. No Food or Drink

(Ref: CSCP "Housekeeping/Sanitation")

1. No eating, drinking or food preparation in any area other than cafeteria or offices.
2. **Only WATER** may be consumed within the production or warehouse facility in open glasses while at the water coolers, or in closed containers at work stations.

H. No Smoking

(Ref: CSCP "Smoking and Open Flames")

1. Smoking is not permitted in the facility.
2. Smoking is permitted in designated areas outside of the facility.

I. Rules of Conduct

(Ref: CSCP "Rules of Conduct")

1. No running, walk at all times.
2. Stay in designated walkways in the facility. Do not take short cuts or go through production areas to save time.

J. No Alcoholic Beverages or illegal drugs

(Ref: CSCP "Substance Abuse Screening and Background Check")

Any Contractor employee taking medication that affects reaction and judgment or causes drowsiness should advise his or her supervisor.

K. Work In Energizer Occupied Areas

1. **Absolutely no overhead work is permitted in Energizer occupied areas over Energizer employees.**
2. With prior Energizer approval, the Contractor should schedule this work on weekends, holidays, or other non-production periods.
2. Areas under the work must be barricaded.
3. **The Contractor must not block emergency exits or aisle ways leading to emergency exits.**
 - a) Fire lanes and access to firefighting equipment must be kept clear.

L. Facility Services

1. Sprinklers, hydrants, or fire fighting systems should be cut off only when absolutely necessary.
 - a. The Contractor must coordinate cut-offs with Energizer well in advance so that Energizer's insurance company and local fire department can be alerted.
2. No operation of gasoline or diesel engines is permitted in Energizer occupied areas without specific written approval. Propane forklifts may be used only in areas approved by Energizer.

M. Handling pallets, with or without a load.

1. All operators must be trained and licensed to operate mechanized lifts on Energizer property.
2. Check for unsafe conditions such as broken boards, pulled nails, cracks, or any other defect.
3. Pallets should be stored flat.
4. Never lean pallets against an object by placing them on an edge.

VII. Specific Safety Rules

A. **Asbestos/Lead**

1. Energizer maintains a survey of Asbestos Containing Materials (ACM) for the Hanover facility. Asbestos is known to be present in the pipe insulation at elbow locations, and the exterior wallboards. Prior to working on Hanover facility premises, the Contractor shall (if applicable) review the survey. There are no ACM in Walkerton.
2. All work involving potential ACM, including roofing, drywall, and floor tile, must be approved by the Energizer Contractor Representative prior to initiation of work activities.
3. If any material is suspected by the Contractor of containing asbestos, the Contractor will contact the Energizer Contractor Representative (ECR) for directions. Only pre-approved licensed Asbestos Abatement Contractors are allowed to disturb ACM.
4. Structures that may have been painted with lead paint are to be tested prior to demolition to determine if lead abatement is necessary. Lead based paints are not to be used in or outside any facility.

B. **Compressed Air Usage**

Compressed air shall only be used to power pneumatic tools.

C. **Confined Space Entry**

(Ref: CSCP "Confined Space Entry" and Energizer Canada's "Confined Space Program")

1. Confined spaces in Walkerton/Hanover are identified by signs and include, but are not limited to, manhole access to the municipal water system, areas under equipment and above ceilings (in specific circumstances). There are no confined spaces within either facility that require entrance by any Contractor.
2. If the Contractor is doing work which requires entrance to a confined space the SHEA Coordinator must be contacted to confirm the status of the area to be entered.
3. Before entering a confined space, each Contractor shall have and follow Energizer's Confined Space Program with Ontario Standards. The plan shall include, but not be limited to, means for isolation, cleaning, ventilation, monitoring, attendants, and emergency rescue.
4. The SHEA Coordinator shall approve the Contractor's confined space rescue plan.

D. **Cutting and Welding**

(Ref: CSCP "Cutting and Welding")

Contractors shall comply with all standards set forth in OHS Act or other applicable government regulation.

1. **Contractors must read and understand the Energizer JSHA for welding and comply with the requirements for a fire watch during and after any welding or metal cutting activities.**
2. Due to fire hazards, no cutting, welding, or any other spark producing operation is allowed until the Maintenance Supervisor, or his/her designated representative has approved the location and issued a Hazardous Work Permit.
3. The area must be clear of all dust and combustible materials prior to cutting, welding or burning. Compressed gas cylinders are to remain upright and secured at all times, and capped when being transported or when not in use.
4. During any of these operations, a fire watch must be maintained by the Contractor with suitable fire extinguishers, approved by Contractor, at the site. Energizer's approved fire watch must remain at the site of the cutting or welding for at least one half hour after the work is complete to detect and extinguish possible smoldering fires. An Energizer fire extinguisher may be used only in an emergency situation. If such occurs, the designated Energizer representative shall be immediately notified and the extinguisher returned promptly to the SHEA Coordinator for inspection and recharge.
5. The welding or metal cutting area must be well ventilated; however, strong drafts directed at the welding work should be prevented.
6. Never support welding or cutting work on compressed air cylinders or containers.
7. Never weld or cut in the vicinity of flammable gases or vapors.
8. Never weld a container or drum which held flammable solutions unless it has been thoroughly steam cleaned.
9. Never use pure oxygen to ventilate a welding area.

10. Never weld closed containers, vessels, tanks, or other hollow parts. Before heating, drill a hole in any suspiciously light part made of metal or other materials. A hollow part with no vent hole can explode like a bomb, upon heating.
11. Never weld on a concrete surface. Heated concrete can spall, fly, and injure the welder.
12. Guard all mechanical transmission parts such as gears, shafts, and couplings which are exposed to welding heat.
13. When welding in confined spaces, such as manholes, take precautions to assure a safe exit. Station an attendant immediately outside the work area to assist as needed. Always leave oxygen and acetylene welding tanks outside of the confined space. (See Hazardous Work Permit for confined spaces.)
14. To prevent movement, securely block any heavy portable welding equipment mounted on wheels. The portable unit must have a charged fire extinguisher mounted to the frame.
15. Provide portable fireproof welding curtains to avoid eye injury to personnel in the area.
16. Remove flammable materials from the area and protect those that cannot be removed.

E. Electrical Safety

Contractor shall comply with all standards set forth in OHS Act or applicable government regulation.

1. Extension cords and temporary lighting cords shall not be run across aisle ways or corridors where they pose a tripping hazard. Extension cords must have GFCI protection if used outside of the facility.
2. Temporary electrical power generation may only be used with the written approval of the Plant Manager, or his/her designate. In addition to specific approval, temporary electrical power generation must be clearly marked and protected against damage from traffic.

F. Electrical Hazards

1. *General Personal Requirements:*

Alertness:	Employees shall be instructed to be alert at all times when they are working near live parts within the Limited Approach Boundary of energized electrical conductors or circuit parts or where other electrical hazards exist. Employees are not permitted to work within the Limited Approach Boundary on energized electrical conductors or circuit parts or where other electrical hazards exist while their alertness is recognizably impaired due to illness, fatigue, or other reasons.
Conductive Articles Being Worn:	Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or unrestrained metal frame glasses) shall not be worn where they present an electrical contact hazard with energized electrical conductors and circuit parts, unless such articles are rendered nonconductive by covering, wrapping, or other insulating means.
Clothing Not Permitted:	Clothing made from flammable synthetic materials that melt at temperatures below 315°C (690°F) such as acetate, acrylic, nylon, polyester, polyethylene, polypropylene, and spandex, either alone or in blends shall not be used.
Eye Protection:	Employees shall wear protective equipment for the eyes to prevent injury from electric arcs, flashes, or from flying objects resulting from an electrical explosion.
Face Protection:	Employees shall always wear eye protection under face shields or hoods.
Foot Protection:	Employees shall wear electrical hazard or EH rated shoes. They shall maintain this footwear clean and free of any known defects.
Housekeeping:	Employees shall maintain all tools and clothing in a clean and dirt free manner.

2. *General Work Requirement:*

- Attendants:** If signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant shall be stationed to warn and protect employees. An attendant shall remain in the area as long as there is a potential for employees to be exposed to the electrical hazards.
- Barricades:** Barricades shall be used in conjunction with safety signs where it is necessary to prevent or limit employee access to work areas containing energized conductors or circuit parts or potential energized conductors or circuit parts. Conductive barricades shall not be used where it might cause an electrical hazard. The barricades shall be placed no closer than the Limited Approach Boundary.
- Blind Reaching:** Employees shall be instructed not to reach blindly into areas that might contain exposed electrical conductors and circuit parts or potential energized electrical conductors or circuit parts where an electrical hazard exists.
- Conductive Cleaning Materials:** Employees shall not use steel wool, metalized cloth, silicon carbide, water, aerosol cleaning fluids, or other electrically conductive cleaning materials inside the Limited Approach Boundary.
- Conductive Materials:** Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with energized electrical conductors or circuit parts. Such materials and equipment include, but are not limited to; long conductive objects such as ducts, pipes, tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members and chains.
- Electrical Clearances:** Always assure that proper depth of working space is maintained and present when conducting voltage or amperage measurements on energized conductors or circuit parts.
- Hazardous Classified Locations:** Electrical maintenance conducted in Hazardous or Classified Locations must always ensure that the form of construction, installation, and other maintenance activities being conducted on the equipment uses materials that are suitable for the Hazardous or Classified Location and that the classification is not compromised. All electrical troubleshooting conducted in Hazardous or Classified locations must always adhere to the pertinent JSHA and the procedures required for the area to ensure that the electrical activity does not introduce any additional hazards in itself.

3. *General Work Requirements:*

- Illumination:** Employees shall not enter spaces containing electrical hazards unless illumination is provided that enables the employees to perform the work safely. Where there is a lack of illumination or an obstruction precludes observation of the work to be performed, employees shall not perform any tasks within the Limited Approach Boundary of energized conductors or circuit parts where an electrical hazard exists.
- Qualified Person:** One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.

Portable Ladders:

Portable ladders shall have nonconductive side rails if they are used where the employee or the ladder could contact exposed energized electrical conductors or circuit parts where an electrical hazard exists. Metal or aluminum ladders are not permitted in Energizer facilities.

Reclosing Circuits after Protective Device Operation:

After a circuit is de-energized by a circuit protective device, the circuit shall not be manually energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

Routine Opening and Closing of Circuits:

Load rated switches, circuit breakers, or other devices specifically designed as disconnecting means shall be used for the opening, reversing, or closing of circuits under load conditions.

The routine operation for opening and closing circuits shall adhere to the following:

1. Always properly interrupt the load.
2. Always assume a safe position when energizing or de-energizing an electrical enclosure.
3. Always keep head and torso turned away from the disconnect when energizing or de-energizing.
4. Maintain solid balance and footing.
5. Position your body such that you are not in front of any part of the enclosure or disconnect.
6. Energize or de-energize by moving away from the enclosure and the disconnect.
7. Stay clear of the electric Arc Blast Zone.

Safety Signs or Tags:

Safety signs, safety symbols or accident prevention tags shall be used where necessary to warn employees about electrical hazards that might endanger them.

4. Energizer Electrical Work Requirements:

There are three types of electrical work that are permitted to be performed on energized electrical conductors and circuit parts by qualified personnel.

This work includes:

1. **Troubleshooting:** Work performed on energized electrical conductors and circuit parts to determine the cause and location of a problem. Work done under this heading must be performed only with suitable test instruments.
2. **Calibration:** Adjustments performed on electronic components with energized electrical conductors and circuit parts to cause a particular parameter to have a specified value or state.
3. **Repair Work:** Removing, installing modifying or repairing electrical components or wiring on energized electrical conductors or circuit parts. Conducting repair work of any type in an electrical enclosure with energized electrical conductors and circuit parts requires a Hazardous Work Permit.

The following electrical work procedures are to be followed when electrical work is performed on energized electrical conductors and circuit parts or in the immediate vicinity of energized electrical conductors and circuit parts:

1. Electrical troubleshooting work may be performed on energized electrical conductors and circuit parts provided that only approved test instruments are used to perform the task and the proper procedures and personal PPE are applied in the troubleshooting process.
2. Calibration work may be performed on energized electrical conductors and circuit parts provided that only approved test instruments are used to perform the task, there are documented procedures for the calibration, and personal PPE are applied in the calibration process.
3. **Repair work on energized electrical conductors or circuit parts of any kind is prohibited.**
 - a. Conducting repair work of any type in an electrical enclosure with energized electrical conductors and circuit parts requires a Hazardous Work Permit.

Energized Electrical Conductors and Circuit Parts Work = Electrical Hot (Energized) Work:

By definition, electrical “hot” or energized work is repair work on or in the immediate vicinity of energized electrical conductors or circuit parts. The immediate vicinity is defined as any energized electrical conductor or circuit part that is within the reach of the electrical worker when the work task is being performed. An electrical enclosure is considered “energized” if there are any energized electrical conductors or circuit parts inside the immediate enclosure. This includes the line-side of conductors if the enclosure has a main disconnect integral to the enclosure.

5. General Test Instruments and Equipment:

Test Instruments:

1. Test instruments, equipment, and their accessories shall be rated for circuits and equipment to which they will be connected.
2. All voltage and current instruments shall have a minimum rating of CAT III.
3. Test instruments, equipment, and their accessories shall be designed for the environment to which they will be exposed and the manner in which they will be used.
4. Only qualified persons shall perform testing work on or near live parts operating at 50 volts up to 600 volts AC.
5. Test instruments and equipment and all associated test leads, cables, power cords, probes, and connectors shall be visually inspected for external defects and damage before each use. If there is a defect or evidence of damage that might expose an employee to injury, the defective or damaged item shall be removed from service, and no employee shall use it until repairs and tests necessary to render the equipment safe have been made.

Solenoid Type Voltage Testers:

Use of solenoid type voltage testers that activate a spring-loaded solenoid plunger is prohibited. These testers will draw a small arc when contact is made with the measured surface.

Probe Exposure:

Only the minimum amount of test lead should be exposed on contact type instruments. This minimizes the chance of accidentally causing a short circuit if the test lead contacts more than one conductor at a time.

Proximity Voltage Testers:

The use of proximity type voltage testers are permitted for general diagnostics. Proximity type voltage testers are **not** permitted for establishing an electrically safe condition.

6. General Electrical PPE:

Employees working in areas where there are electrical hazards shall use protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed. When an employee is working within the flash protection boundary he/she shall wear protective clothing and other personal protective equipment in accordance with the Flash Hazard Analysis or the listed Hazard Risk Category Classifications.

- Body Protection:** Employees shall wear clothing resistant to flash flame wherever there is a possible exposure to an electric arc flash.
- Coverage:** All parts of the body inside the Arc-Flash Protection Boundary shall be protected. Shirt sleeves shall be fastened at the wrists and shirts shall be closed at the neck.
- Fit:** Tight-fitting clothing shall be avoided. Loose fitting clothing provides additional thermal insulation due to air spaces. FR apparel shall fit properly such that it does not interfere with the work task.
- Hand Protection:** Employees shall wear rubber insulating gloves with leather protectors where there is a danger of hand and arm injury from electric shock and burns due to contact with live parts. Gloves made from layers of flame resistant material provide the highest level of hand protection. Heavy-duty leather gloves also provide good protection. Where voltage-rated gloves are used, leather protectors shall be worn over the rubber gloves. The leather protectors also provide good arc-flash protection for the hands.
- Rubber gloves with leather protectors **are** required to be worn for all voltage measurements and current measurements where the voltage is greater than 50 volts
 - Leather protectors shall be worn where required for arc flash protection and anytime the hands are inside the Arc Flash Protection Boundary.

7. Minimum required electrical PPE:

The minimum electrical PPE that is required for voltage testing, troubleshooting and calibration on energized electrical systems shall be identified as the Energizer Minimum Risk Classification:

- Footwear:** Electrical Hazard rated work shoes meeting ANSI Z41 PT91 EH
- Insulated Gloves:** Class 00 Rubber Gloves rated at 500 VAC. (Canada: Class 0 Rubber Gloves rated at 600 VAC)
- Leather Protectors:** Leather gloves for wearing over the rubber insulated gloves
- Eye Protection:** Safety Glasses with side shields meeting ANSI Z87.1
- Shirt:** Arc-rated long sleeve with a minimum arc rating of 4
- Pants:** Arc-rated long pants with a minimum arc rating of 4
- Underwear:** 100% cotton
- Glove Bag:** Storage bag for protection of rubber gloves and leather protectors
- Volt Meter:** Electrically rated for CAT III
- Hearing Protection:** Ear canal inserts

NOTES:

1. Clothing made from flammable synthetic materials that melt at temperatures below 315°C (690°F) such as acetate, acrylic, nylon, polyester, polyethylene, polypropylene, and spandex, either alone or in blends shall not be used or worn.
2. Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or unrestrained metal frame glasses) shall not be worn where they present an electrical contact hazard with energized electrical conductors and circuit parts, unless such articles are rendered nonconductive by covering, wrapping, or other insulating means.

- Coveralls with a minimum arc-rating of 4 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.

ENERGIZER MINIMUM RISK CLASSIFICATION ARC-FLASH WARNING LABEL



NOTES:

- Denotes Energizer Minimum Risk Classification electrical PPE is required
- Denotes calculated incident energy is less than 1.2 cal/cm²
- Equates to a Hazard Risk Category 0 in NFPA 70E

Energizer Risk Category 1 Classification

EXAMPLE ENERGIZER RISK CATEGORY 1 ARC-FLASH WARNING LABEL



NOTES:

- Denotes calculated incident energy is greater than 1.2 cal/cm² but less than 4 cal/cm².

PPE Required:

- Arc-rated shirt and pants with a minimum arc rating of 4 are required.
- Coverall with a minimum arc-rating of 4 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.
- Underwear of 100% cotton is required.
- Ear canal inserts hearing protection is required.
- Safety glasses with side shields eye protection per ANSI Z87 are required.
- A hard hat per ANSI standard Z89.1 class B with a face shield at a minimum arc rating of 4 is required.
- Class 00 Rubber gloves with leather protectors are required.
- Electrical hazard rated shoes per ANSI standard ANSI Z41 PT91 EH is required.

The Energizer Risk Category 1 Classification equates to the Hazard Risk Category 1 Classification listed in NFPA 70E. The following potential work conducted on facility premises wiring systems is considered an Energizer Category 1 classification as follows:

Panel boards rated 240 V and below:

- Work on energized electrical conductors and circuit parts, including voltage testing
- Removal of bolted covers to expose bare energized electrical conductors and parts

It is PROHIBITED to conduct the following tasks unless an Electrically Safe Work Condition is established:

- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panel board
- Remove/install circuit breakers or fused switches

Panel boards or Switchboards rated >240 V and up to 600 V with molded case or insulated case circuit breakers:

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary
- Circuit breaker or fused switch operation with covers off

600V Class Motor Control Centers (MCCs):

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary

- Circuit breaker or fused switch or starter operation with enclosure doors open
- Opening hinged covers (to expose bare energized electrical conductors or circuit parts)

600V Class Switchgear with power circuit breakers or fused switches:

- Circuit breaker or fused switch operation with enclosure doors open

Other 600V Class (277 V through 600 V) Equipment:

Lighting or small power transformers (600 V, maximum)

- Opening hinged covers (to expose bare, energized electrical conductors or circuit parts)
- Cable trough or tray cover removal or installation
- Miscellaneous equipment cover removal or installation

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

Energizer Risk Category 2 Classification

**EXAMPLE
ENERGIZER RISK CATEGORY 2
ARC-FLASH WARNING LABEL**



NOTES:

1. Denotes calculated incident energy is greater than 4 cal/cm² but less than 8 cal/cm².

PPE Required:

1. Arc-rated shirt and pants with a minimum arc rating of 8 required.
2. Coverall with a minimum arc-rating of 8 can be worn in lieu of arc-rated pants and shirt provided all other clothing is 100% cotton.
3. Underwear of 100% cotton is required.
4. Ear canal inserts hearing protection is required.
5. Safety glasses with side shields eye protection per ANSI Z87 are required.
6. A hard hat per ANSI standard Z89.1 class B with face shield at a minimum arc rating of 8, with wrap-around guarding to protect not only the face, but also the forehead, ears and neck along with a balaclava is required or an arc-flash hood is required.
7. Class 00 Rubber gloves with leather protectors are required.
8. Heavy-duty EH rated leather shoes are required.

The Energizer Risk Category 2 Classification equates to the Hazard Risk Category 2 and 2* Classifications listed in NFPA 70E. The following potential work, conducted on facility premises wiring systems, is considered an Energizer Risk Category 2 classification as follows:

Panel boards or Switchboards rated >240 V and up to 600 V with molded case or insulated case circuit breakers:

- Work on energized electrical conductors and circuit parts, including voltage testing
- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panel board or switchboard

600V Class Motor Control Centers (MCCs):

- Work on energized electrical conductors and circuit parts, including voltage testing
- Work on control circuits with energized electrical conductors and circuit parts >120 V exposed
- Application of safety grounds after voltage test
- Work on energized electrical conductors and circuit parts of utilization equipment fed directly by a branch circuit of the panel board or switchboard

600V Class Switchgear with power circuit breakers or fused switches:

- Perform infrared thermography and other non-contact inspections outside the Restricted Approach Boundary
- Work on energized electrical conductors and parts, including voltage testing
- Work on control circuits with energized electrical conductors and circuit parts >120 V exposed

- Application of safety grounds after voltage test
- Opening of hinged covers (to expose bare, energized electrical conductors and circuit parts)

Other 600V Class (277 V through 600V) Equipment:

Lighting or small power transformers (600 V, maximum)

- Removal of bolted covers (to expose bare, energized electrical conductors or circuit parts)
- Work on energized electrical conductors and circuit parts including voltage testing
- Application of safety grounds after voltage test*
- Work on energized electrical conductors and circuit parts, including voltage testing*

It is **PROHIBITED** to conduct the following tasks unless an Electrically Safe Work Condition is established:

- Revenue meters (kW-hour, at primary voltage and current) insertion or removal
- Insertion or removal of plug-in devices into or from busways

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

Energizer Risk Category 3 Classification

**EXAMPLE
ENERGIZER RISK CATEGORY 3
ARC-FLASH WARNING LABEL**



NOTES:

1. Denotes calculated incident energy is greater than 8 cal/cm² but less than 25 cal/cm².

PPE Required:

1. Arc-rated pants and shirt or coverall provided all undergarment clothing is 100% cotton and an arc flash suit selected so that the total PPE has a minimum arc-rating of 25 is required.
2. Underwear of 100% cotton is required.
3. Ear canal inserts hearing protection is required.
4. Safety glasses with side shields eye protection per ANSI Z87 are required.
5. A hard hat per ANSI standard Z89.1 class B as required dependent of arc-flash hood.
6. An arc-flash hood with a minimum arc-rating or 25 is required.
7. Class 00 Rubber gloves with leather protectors are required.
8. Heavy-duty EH rated leather shoes are required.

The Energizer Risk Category 3 Classification equates to the Hazard Risk Category 3 Classification listed in NFPA 70E.

Presently, there are no Hazard Risk Category 3 classifications listed in NFPA 70E that are pertinent to facility premises wiring systems at Energizer.

However, there are Energizer Risk Category 3 Classifications throughout facilities and they are marked accordingly with their incident energy based on the arc-flash hazard analysis.

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

Energizer Risk Category 4 Classification

EXAMPLE ENERGIZER RISK CATEGORY 4 ARC-FLASH WARNING LABEL



NOTES:

1. Denotes calculated incident energy is greater than 25 cal/cm² but less than 40 cal/cm².

PPE Required:

1. Arc-rated pants and shirt or coverall provided all undergarment clothing is 100% cotton and an arc flash suit selected so that the total PPE has a minimum arc-rating of 40 is required.
2. Underwear of 100% cotton is required.
3. Ear canal inserts hearing protection is required.
4. Safety glasses with side shields eye protection per ANSI Z87 are required.
5. A hard hat per ANSI standard Z89.1 class B as required dependent on arc-flash hood.
6. An arc-flash suit hood with balaclava or double-layered switching hood is required with a minimum arc-rating of 40 is required.
7. Class 00 Rubber gloves with leather protectors are required.
8. Heavy-duty leather shoes are required.

The Energizer Risk Category 4 Classification equates to the Hazard Risk Category 4 Classification listed in NFPA 70E. The following potential work, conducted on facility premises wiring systems, is considered an Energizer Risk Category 4 classification as follows:

600V Class Motor Control Centers (MCCs):

- Removal of bolted covers (to expose bare, energized conductors and circuit parts)

It is **PROHIBITED** to conduct the following tasks unless an Electrically Safe Work Condition is established:

- Insertion or removal of individual starter “buckets” from MCC

600V Class Switchgear with power circuit breakers or fused switches:

- Insertion or removal (racking) of circuit breakers from cubicles, doors open or closed
- Removal of bolted covers (to expose bare, energized electrical conductors or circuit parts)

NOTE: Other than electrical troubleshooting, mechanical work on circuits with energized electrical conductors and circuit parts is prohibited.

G. Elevated work / fall protection

1. Contractor shall comply with all standards set forth in OHS Act or applicable government regulation.
2. All Contractor employees working at levels of 3 meters or more above ground level, or using a non-standard method of access or egress, or working on a non-standard work surface shall be protected by fall protection equipment.
3. The body harness, anchor point, and shock absorbing lanyard must be arranged that the worker cannot fall freely for a vertical distance of more than 1.5 meters and have sufficient capacity to absorb twice the energy and load that under the circumstances of its use may be transmitted to it, and be equipped with a shock absorber or other device to limit the maximum arresting force to 8.0 kilonewtons to the wearer.
4. Fall protection equipment shall not be secured to sprinkler lines and/or utility piping.
5. This same procedure shall be followed for the operation of scissor lifts (a.k.a skyjacks) or other lift equipment; however, tie-off may be made to the basket of the rig.

H. Forklifts (Powered Industrial Vehicles)

(Ref: CSCP "Forklifts")

1. Contractor Operators must be in compliance with the training requirements as specified in the OHS Act.

I. Hand and Power Tools

1. All equipment used by the Contractor shall conform to Canadian Standards Association or the underwriter's specification.
2. Tools that are equipped with lasers must NOT have a rating higher than Class I or Class II. This includes, but is not limited to pointers and leveling devices.
3. Energizer reserves the right to prohibit the use of any equipment, method or practices that do not conform to acceptable standards.
4. Equipment used shall be removed from Energizer's premises immediately upon completion of the work.

J. Workplace Hazardous Material Information System

Contractor shall comply with all standards set forth in WHMIS and other applicable government regulations.

1. Energizer maintains a current listing of all of its chemicals, solvents, and reagents.
2. The Contractor shall provide the designated Energizer Company representative with Material Safety Data Sheets for all chemicals, solvents, or reagents brought on site.
3. Employees of the Contractor who are working in any area where chemicals are used shall be given the necessary hazard communication information. It is the Contractor's responsibility to train all of its employees in hazard communication information.
4. Material Safety Data Sheets are at various designated work areas/departments throughout the facility and are available for any person in the plant to review.

K. Lock-out/Tag Out

Contractor shall comply with all standards set forth in OHS Act and any other applicable government standards.

1. No equipment will be worked on without specific lockout protection at the electrical disconnect, compressed air shut-off valve, steam shut-off valve, hydraulic, and any other energy source. LOTO applies to servicing and maintenance of equipment in which the unexpected start-up or energization could cause injury—including the removal or bypassing of guards and when any part of employee's body is in the danger zone.
2. The lock and tag will identify the individual working on the equipment. Contractors must provide their own locks.
3. Locks shall only be removed by the individual who installed the locks. No Energizer installed lock shall ever be removed by the Contractor.
4. The Contractor must inform the designated Energizer Company representative the lockout procedures the Contractor will follow. The Contractor may be required to provide a copy of its energy control program.
5. The procedures must be at least as protective as the Energizer lockout procedure. Also, the Contractor must be knowledgeable of the Energizer lockout procedures and understand any differences in the respective programs.

L. Personal Protective Clothing and Equipment

Contractor shall comply with all standards set forth in the applicable government regulations.

1. Contractor personnel must dress appropriately while on Energizer Canada property including, but not limited to shirt and safety shoes.
2. CSA/ANSI approved safety eye wear with permanently affixed side shields shall be worn at all times in Walkerton production areas.
3. The Contractor shall ensure that each employee has the personal protective equipment and/or clothing required, including for specialized work such as welding, torch work, cutting, etc.

M. Respiratory Protection

1. Contractor shall provide respiratory protection and training for its employees in compliance with the applicable government regulations if required.
2. Energizer Walkerton/Hanover does not have a Respiratory Protection Program, as there are no operations undertaken by Energizer personnel which require respiratory protection.
3. Where the Contractor is undertaking work for which respiratory protection is required, the SHEA Coordinator must be involved in the planning of the activities and work schedule so that Energizer personnel can be appropriately protected/prevented from access.

N. Roof Work

Contractor shall comply with all standards set forth in OHS Act or other applicable government regulations.

1. Before penetrating any roof surface the Maintenance Supervisor, Project Engineer and the SHEA Coordinator shall be notified.
2. Fall protection shall be provided while performing work on unprotected roof edges if the roof work is within 10' of the edge of a roof.
3. Areas directly below the hoisting area shall be taped off or barricaded to keep traffic out of the immediate area.
4. Extension ladders must be secured to the edge of the building to prevent slipping and must extend at least three feet above the roof line.
5. Any time roof work is being performed appropriate protection must be in place to prevent punctures, tearing, etc. Any hot work done on the roof requires protective material to be laid down to prevent sparks and hot materials from falling on the roof.
6. Some roofing materials may contain asbestos and should be tested before any work is initiated.
7. Projects involving the placement of heavy equipment on the roof must be comprehensively evaluated to determine if the work is to be done when the building is empty or if colleagues are to be evacuated from that portion of the building during the equipment placement.

O.
VIII. Glossary and References:

OHSA Occupational Health and Safety Act

- Asbestos on Construction Projects and in Buildings and Repair Operations (Reg. 278)
- Construction Projects (Reg. 213)
 - Excavations / Trenching / Shoring (Reg.213 ss.224-241)
 - Fall Protection (Reg. 213 s.26 and Reg. 851 s.85)
 - Scaffolds and Ladders (Reg. 213 ss. 128, 135, 153)
- Industrial Establishments (Reg. 851)
 - Lockout / Tagout Reg. 213 ss190(4)-(9) & Reg. 851 ss. 22 36, 42, 75, 76
 - Personal Protective Equipment (Reg. 851 ss.79-86 & Reg. 231 s.21-27)
- Confined Space (Reg. 632 & Reg. 851 s.119)
- Workplace Hazardous Materials Information System (Reg. 860)
- Critical Injury – Defined (Reg. 834)
- First Aid Requirements (Reg. 1101)

Fire Code Fire Prevention and Protection Act (and Regulations)

CSA Canadian Standards Association

ANSI American National Standards Institute

NFPA National Fire Protection Association

ASTM ASTM International (formerly American Society for Testing and Materials)

IX. References Specific to Electrical Hazards Section

- NFPA 70** The National Electric Code 2008 Edition
- NFPA 70E** The Standard for Electrical Safety Requirements for Employee Workplaces 2009 Edition
- NFPA 79** The Electrical Standard for Industrial Machinery 2007 Edition
- NFPA 70B** Recommended Practice for Electrical Equipment Maintenance 2006 Edition
- ANSI Z87.1** Practice for Occupational and Educational Eye and Face Protection, 2003
- ANSI Z89.1** Requirements for Protective Headwear for Industrial Workers, 2003
- ASTM D 120,** Standard Specifications for Rubber Insulating Gloves, 2002a (2006)
- ASTM F 479** Standard Specification for In-Service Care of Insulating Blankets 2006
- ASTM F 496,** Standard Specifications for In-Service Care of Insulating Gloves and Sleeves, 2006
- ASTM F 696,** Standard Specifications for In-Service Care of Insulating Gloves and Sleeves, 2006
- ASTM F 819-08** Standard Terminology Relating to Electrical Protective Equipment for Workers
- ASTM F 1236** Standard Guide for Visual Inspection of Electrical Protective Rubber Products, 2007
- ASTM F 2178** Standard Test Method for Determining the Arc Rating and Standard Specifications for Face Protective Products 2006
- ASTM F 2412** Standard Test Methods for Foot Protection, 2005
- ASTM F 2413** Standard Specification for Performance Requirements for Foot Protection, 2005
- ASTM F 1506** Standard Specifications for Protective Wearing Apparel for Use by Electrical Workers When Exposed to Momentary Electric Arc and Related Thermal Hazards, 2002a
- IEEE** The Other Electrical Hazard: Electric Arc Blast Burns by Ralph H. Lee
- IEEE** Predicting Incident Energy to Better Manage the Electric Arc Hazard on 600 V Power Distribution Systems Paper No. PCIC-98-36
- NFPA** Electrical Safety in the Workplace by Ray a. Jones, P.E. and Jane G. Jones
- McGraw Hill** Electrical Safety Handbook – Second Edition by John Cadick, P.E. Mary Capelli-ScgellPfeffer, M.D., M.P.A., and Dennis Neitzel, CPE