



COUNTY OF NORTHERN LIGHTS

POLICY

ELECTRICAL SAFETY

CREATED: 2/9/2025

REVISED: 12/17/2025,
2/6/2026

TOTAL PAGES: 6

PURPOSE

The purpose of this program is to establish and implement written procedures for compliance to inform personnel of the potential exposure to electrical hazards in operations and to provide guidelines.

Management must ensure that all electrical equipment shall be installed and guarded so that adequate provision is made for the safety of persons and property and for the protection of the electrical equipment from mechanical or other injury to which it is liable to be exposed.

Management must control all risks, starting at the top of the hierarchy of hazard control: elimination. Where the risk cannot be eliminated, Management must investigate substitution options, then engineering controls, and finally administrative controls.

Portable electric heaters (space heaters) are banned (eliminated) from County of Northern Lights Offices primarily due to fire hazard risks from overheating, placing them too close to flammable items (furniture, curtains, bedding), or overloading circuits with extension cords, leading to burns, property damage, and fatalities. Portable heaters utilize a significant amount of wattage that often exceeds the circuit limitations due to the abundance of electrical use that is required for office supplies (computers, printers, etc.).

SCOPE

This program is applicable to all employees. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

KEY RESPONSIBILITIES

Managers and Supervisors

- For ensuring to implement and enforce the electrical safety program and to ensure that workers must be informed of the potential electrical hazards before being permitted to do work in proximity to energized electrical conductors or equipment.
- To ensure all electrical installations, equipment, apparatus, and appliances shall be in conformity with the requirements of the local, provincial, and national regulatory codes.
- To ensure only approved electrical equipment is used by workers and that the electrical equipment is:
 - Approved for the intended use and location of the electrical equipment;
 - Maintained in proper working condition and capable of safe operation; and
 - Tested in accordance with the manufacturer's recommendations

Employees

- Shall follow the requirements in this electrical safety program.

PROCEDURE

Qualifications of Electrical Workers

Electrical work may only be performed by competent/qualified workers. Management shall permit only competent, qualified electrical workers to construct, install, alter, repair, or maintain electrical equipment. Only qualified electrical workers may enter electrical rooms and enclosures containing live parts.

PPE and Tools



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Personal protective equipment must be worn for protection from electrical shock and/or arc flash. PPE requirements within the arc flash boundary shall be determined by completing an arc flash hazard analysis. PPE must cover the entire body when working within the arc flash boundary. This may include, but is not limited to, arc flash suit with face shield, safety glasses, non-conductive head protection and leather gloves and footwear. Rubber insulating gloves shall be worn for protection from electric shock due to inadvertent contact with an energized electrical conductor or circuit parts. If more information is needed refer to CSA Standard Z462.

Only non-conductive tools and equipment may be used while performing electrical work. Tools and other equipment that are capable of conducting electricity and endangering the safety of any worker shall not be used in such proximity to any live electrical installation or equipment that they might make electrical contact with the live conductor.

Only nonconductive hardhats are allowed for use where there is a potential for injury from electric shock or burns due to contact with energized parts.

General Electrical Safe Work Procedures

- Work shall not be done on an energized electrical conductor or equipment that has a voltage of more than 750 volts unless 2 or more authorized personnel are present while the work is being performed.
- Management must ensure that the path to ground from circuits, equipment, or conductor enclosures shall be permanent and continuous, shall have ample ampacity to conduct safely and currents liable to be imposed on it, and shall have impedance sufficiently low to limit the voltage above ground and to facilitate the operation of the over current devices in the circuit.
- Equipment with defective electrical components is immediately removed from service. Management shall mark or tag as unsafe and remove from service any equipment with damaged or defective electrical components (e.g. - damaged power cord or plug) that may render it unsafe for use.
- Management shall ensure that all operating electrical equipment is kept in safe and proper working condition. Electrical equipment maintained for emergency service will be periodically inspected and tested by qualified personnel as necessary to ensure its fitness for service.
- Infrequently used electrical equipment maintained for future service shall be thoroughly inspected by qualified personnel before use in order to determine its fitness for service.
- All wire joints or connections are to be fitted with an approved cap or other approved cover, enclosed in an approved box or where the wire joints or connections are not permanently installed be protected from damage by another approved means and all dead, abandoned or disused electrical conductors or equipment are removed from the work area or disconnected and secured to prevent inadvertent energization.

Electrical Fire Safety

- Management shall ensure that electrical installations shall be made so that the probability of spread of fire through fire stopped partitions, floors, hollow spaces, firewalls or fire partitions, vertical shafts, or ventilating or air-conditioning duct is reduced to a minimum. Where a fire separation is pierced by a raceway or cable, any openings around the raceway or cable shall be properly closed or sealed in compliance with the National Building Code of Canada.
- Management shall ensure that a fire extinguisher approved for Class C fires is readily available to workers working on or near energized high voltage electrical equipment.
- Flammable materials must not be stored near electrical equipment. Flammable material shall not be stored or placed close to electrical equipment.

Signage, Markings, and Warnings

Warning techniques will be used to protect employees from injury by electrical equipment. These include:

- Safety signs or tags will be used when necessary to warn employees about electrical hazards.
- Electrical equipment such as switchboards, panel boards, industrial control panels, meter socket enclosures and motor control centres that are installed in other than dwelling units and are likely to require examination, adjustment, servicing or maintenance while energized shall be field marked to warn persons of potential



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electric shock and arc flash hazards. The markings shall be located so that it is clearly visible to persons before examination, adjustment, servicing, or maintenance of the equipment.

- Barricades, along with safety signs or tags, will be used where necessary to prevent or limit employee access to work areas exposing employees to exposed energized equipment. The barricades should not be conductive if the potential for electrical contact exists.
- Where signs and barricades do not provide sufficient warning and protection from electrical hazards, an attendant must be stationed to warn and protect employees.
- Electrical control panels have their covers permanently marked: DANGER "HIGH VOLTAGE" and must have an approved rubber mat in front of the panel.
- Notices reading "DANGER" "HIGH VOLTAGE" shall be placed in prominent positions in proximity to energized electrical equipment, operating at over 750 volts, which may be accessible to workers.
- Access to electrical control rooms and enclosures is restricted. The entrance to a room or similar enclosure containing exposed live electrical parts shall have a conspicuous sign, warning of the danger, and forbidding entry by unauthorized persons.
- All electrical panel switches must be legibly marked to indicate what they control. The markings must be durable to withstand the service environment.
- For electrical powered equipment in the shop: air compressors, fans, etc., controls must also be labelled unless the location of the switch makes it obvious what the control switch operates.

Lockout/Tagout

Lockout Tagout is used before performing electrical work. Before any work begins on an electrical conductor or electrical equipment and during the progress of that work, management shall ensure that the electrical conductor or electrical equipment is isolated, locked out, and connected to ground. If it is not reasonably practicable to de-energize electrical equipment before performing electrical work, alternative hazard controls must be implemented and approved before electrical work begins.

See Lockout/Tagout Program.

If more than one worker is involved in Lockout/Tagout the worker who disconnected and locked out the power supply will communicate the purpose and status of the disconnecting and locking out.

If a tag is used as a means of communication, the tag:

- Shall be made of non-conducting material;
- Shall be secured to prevent its inadvertent removal;
- Shall be placed in a conspicuous location;
- Shall state the reason the switch is disconnected and locked out;
- Shall show the name of the worker who disconnected and locked out the switch; and
- Shall show the date on which the switch was disconnected and locked out

Guarding

- Work shall not be done in or around an area or structure in proximity to energized electrical conductors or equipment which are normally isolated by position or elevation, unless the electrical connections, conductors or equipment are provided with cabinets or guards which; will effectively prevent contact by a worker, or by equipment being used or handled.
- Bare live parts shall be guarded against accidental contact by means of approved cabinets or other forms of approved enclosures except where local codes exempts and cabinets or guards shall meet the specifications of an authority acceptable to regulatory authorities.
- All switches, receptacles, luminaries, and junction boxes shall be fitted with a cover that is approved for the intended use and location of the cover.

Egress



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- Management shall ensure that passageways and working space around electrical equipment shall not be used for storage and shall be kept clear of obstruction and be arranged to give authorized persons ready access to all parts requiring attention.
- A minimum working space of 1 meter with secure footing shall be provided and maintained about electrical equipment such as switchboards, panel boards, control panels, and motor control centres that are enclosed in metal, except that working space is not required behind such equipment where there are no renewable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.
- Each room containing electrical equipment and each working space around equipment shall have suitable means of egress (walk areas, corridors, doors, etc.), which shall be kept clear of all obstructions.
- Access to electrical equipment must be kept free of obstruction and allow easy access to all parts which may require maintenance.
- For outdoor installations, arc producing electrical equipment shall not be installed within 1 meter from the discharge of a combustible gas relief device or vent.

Hazardous Locations

- Hazardous locations will be classified as listed below:
 - Class I: Locations in which flammable gases or vapours are or may be present in the air in quantities sufficient to produce explosive gas atmospheres.
 - Class II: Locations in which there is a presence of combustible dusts or electrically conductive dusts.
 - Class III: Locations in which there is a presence of easily ignitable fibres but in which such fibres are not likely to be in quantities sufficient to produce ignitable mixtures.
- Wherever reasonably practicable no electrical equipment or devices shall be used or installed within hazardous locations unless the equipment is essential to the process being carried on therein.
- Service equipment, panel boards, switchboards, and similar electrical equipment shall, where practicable, be located in rooms or sections of the building in which hazardous conditions do not exist.
- Electrical equipment shall be adequately ventilated to prevent the development around electrical equipment of ambient air temperatures in excess of those normally permissible for such equipment.
- Adequate illumination shall be provided to allow for safe operation and maintenance of electrical equipment.

Use of Portable Electric Equipment

- Portable equipment must not be handled in any way that would cause damage. Electrical cords cannot be used for raising or lowering equipment or be fastened by staples or otherwise hung in a manner which could cause damage to the outer insulation.
- Portable electrical equipment used outdoors or in damp locations is equipped with ground fault circuit interrupters (GFCI). When used outdoors or in a wet or damp location, portable electrical equipment shall be protected by an approved, CSA (or equivalent) certified, ground fault circuit interrupter.
- When a portable luminaire is used, Management shall ensure that the electrical extension cord and fittings are approved for the intended use and location of the extension cord and fittings and are properly maintained and the electrical extension cord is not used to supply power to any equipment other than the portable luminaire unless the cord meets the proper requirements.
- Extension and power supply cords are maintained in a safe condition. Management shall ensure that an electrical extension or power supply cord used for supplying energy to any electrical equipment is approved for the intended use and location of the electrical extension or power supply cord, is fitted with approved cord end attachment devices that are installed in an approved manner, is provided with a grounding conductor, is maintained and protected from physical or mechanical damage and is plugged into an approved GFCI plug adapter or GFCI receptacle (if used in a damp location).

Use of Portable Electric Heaters



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- Portable electric heaters are banned from County of Northern Lights facilities, excluding the temporary use at Utilities facilities, due to the fire risk.

The following practices will aid in heat management:

- Dress in layers
- Keep spare garments at work (utilize a coat rack, wall hangers or a spare drawer to store spare garments)
- Warm indoor footwear
- Go for a walk during your break to increase blood flow
- Ensure the building and room temperatures are at an appropriate temperature (common office temperatures in winter are 20- 22 degrees Celsius)
- Heated blanket (must abide by manufacturers instructions, must inspect cord prior to each use, must turn off/unplug when not in use)
- Close interior doors, including hallway doors
- Routine furnace filter changes
- Window replacement when due

EMERGENCY PROCEDURES

The following emergency procedures shall be required as training to be completed and are to be followed if a person comes in contact with exposed energized electrical equipment and that contact may affect his or her safety or health:

When Closing Contacts at Electrical Control Panels

- If personnel must touch anything on an electrical control panel, first check it with a voltage tester (contact or non-contact). If not available, tap it with the back of your hand. (Prevents hand from grabbing)
- Before operating switches or breakers ensure all protective panels are closed and properly fastened.
- To disconnect the electrical power from the equipment, always shut the control switch off first, before shutting the main switch off.
- To connect the electrical power, always ensure all control switches are off before engaging the master switch.
- When operating the control or master switch, never stand in front of the electrical panel. Always stand off to the side of the panel to operate the switch. Never look at the control panel. Should the panel explode, your eyes or body must not be in a direct line with the explosion.

Contact with Electrical Current

- Don't touch the victim unless the power is off.
- Unplug the equipment or turn the power off at the main control area.
- If you can't turn off the power, use a dry wooden board or broom handle to separate the victim from the power source.
- Call for emergency medical assistance.
- If the victim is not breathing, perform mouth-to-mouth resuscitation, if trained.
- If the victim is conscious, keep them calm. Lay them on their back. Elevate their feet. Cover them with a blanket.

Contact with High Voltage Line

- Don't try to separate the victim from the power source.
- Don't touch the victim unless you are absolutely certain the victim is not in contact with electrical wire.
- Call for emergency help and medical assistance.

Electrical Fire

- Unplug the burning or smoking appliance.
- Get everyone out at once.



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- If the fire is small, use a CO2 or dry powder fire extinguisher. Never put water on an electrical fire.
- Call for emergency assistance or the fire department. Tell the dispatcher your name, address, and that you have an electrical fire.

TRAINING

All employees are provided electrical awareness training. All employees shall be provided basic electrical safety training. Employees should be provided training on working safely with electricity, recognition of electrical hazards, prevention of electrical shock and arc flash and recognition of electrical shock and arc flash hazard labels.

All training must be documented and kept on file.

COMMUNICATION

As per the company's Safety Management System Manual, and corporate communication policy, all applicable policies and procedures are reviewed with all new employees prior to engaging in any work activities (during orientation) and annually with seasonal/returning employees (refresher training).

Chief Elected Official

Chief Administrative Officer