Purpose
This document defines the minimum required control measures to reduce the risk of injury or illness related to electricity.

Scope
Applicable to all Coca-Cola system locations (manufacturing, distribution, offices, laboratories and all other locations) worldwide

Definitions
See Appendix.

Requirements

1. Compliance
Implement management practices and controls in accordance with the stricter of Company requirements or applicable legal requirements related to electricity.

- Establish and maintain processes to identify, access and periodically verify compliance with current versions of these applicable legal requirements. These processes may be specific to electrical safety controls or part of a more comprehensive compliance process.

1 “Applicable legal requirements” means any law, regulation, rule, requirement, standard, norm, decree or code applicable to the relevant facility and/or operation enacted, promulgated or issued by any governmental or regulatory agency or body at the National, Federal, State, Provincial, Municipal or other local level. It may also include relevant and applicable international or regional laws, regulations, rules and agreements, such as, but not limited to United Nations Guidelines and/or European Union (EU) Directives or Regulations, whether adopted into locally applicable law or directly applicable without the need for local adoption.
2. **Hazard Identification and Risk Assessment**

Conduct and document an initial assessment of the workplace to identify potential electrical safety hazards and necessary controls.

The assessment:

- May be either a stand-alone document or included as part of a more comprehensive risk assessment;
- Must be updated whenever processes, equipment or facilities are added or modified in such a way that can create or change potential electrical safety hazard(s); and
- Must be reviewed at least annually to verify that it is current

3. **Control of Hazardous Energy**

Control energy when working on electrical distribution systems and equipment in accordance with the Company's Hazardous Energy Control Requirements.

- Do not work on live equipment unless approved by a competent engineer and site management. Conduct work in accordance with all applicable local regulations.
- Where multiple electrical systems are intended to operate as an integrated installation, ensure that energy isolation devices, interlocks and emergency stops are designed and installed to de-energize each appropriate section of the integrated installation, and that terms used for operational control labeling have identical meanings.
- Any tie-ins to the facility power distribution systems must be approved and inspected by competent facility associates to ensure that these will not create risks to workers or Company property, or disrupt operations.

4. **Suitability**

All electrical distribution equipment and cordage must be suitable (as to type, size, voltage, current capacity, insulation, mechanical strength, heat generation, ingress protection) for the intended installation and use, as identified by the manufacturer or compliance with industry consensus standard.

5. **Bonding and Grounding**

All electrical systems shall have a bonding and grounding system that provides a permanent and continuous path to ground from circuits, equipment and enclosures.

- The bonding/grounding conductors must be identifiable and distinguishable from all other conductors.
6. **Overcurrent Protection**
Implement an over current protection system.

- Correctly rate fuses, circuit breakers and other over current devices for the circuit they protect and do not modify them.
- Clearly label each disconnect switch or over current device to indicate the circuit’s function unless it is clearly evident what the device controls and whether they are in the open (OFF) or closed (On) position.
- Maintain disconnects so that they are readily accessible in an emergency.

7. **Installations in Wet Locations**
Installations used in wet locations shall be appropriate for the intended purpose.

- Fixtures, switches, circuit breakers and switchboards installed in wet locations shall:
  - Be designed for the purpose;
  - Be enclosed in weatherproof enclosures;
  - Be constructed or installed so that they are liquid tight (water cannot enter the enclosure, conduit or fittings); and
  - Have the correct IP (Ingress Protection) rating for the installation as per international standard IEC 60529.
- Inspect packing glands, bushings, gaskets or other controls used to ensure a water-tight seal at least annually. Maintain and replace them as necessary.
- Protect motors, motor-control apparatuses and branch-circuit conductors used in wet areas against short-circuits or ground faults.
- Portable electrical equipment that is for use in areas that are wet or that is likely to contact conductive liquids shall be double insulated or provided with ground-fault protection controls.

**NOTE:** “Weather-proof” designations for electrical devices do not necessarily mean that the device is “liquid tight” and suitable for locations with heavy water or chemical exposure.
8. Flexible Cords and Cables

All cables and cords are designed, installed and maintained to prevent electrical hazards.

- Electrically insulate cables/cords and cable conductors, and protect them against mechanical damage. Protection shall be appropriate to the actual, and reasonably foreseeable, conditions of use and potential causes of damage.

- Unless specifically required by regulation, flexible cords and cables may not be used:
  - As a substitute for the fixed wiring of a structure;
  - Where run through holes in walls, ceilings or floors;
  - Where run through doorways, windows or similar openings;
  - Where concealed behind building walls, ceilings or floors; or
  - In contact with walls, floors, wood cross members or partitions unless the cords/cables are encased in rigid conduit, cable trays or bushings of noncombustible, nonabsorbent insulating material.

- Rate cabling run underground for this application and bury it at a depth to preclude damage from surface activities.

- Locate cable run overhead at a height to preclude damage from moving equipment or to present a risk to employees.

- Where the cable is vulnerable to damage, additional protection, such as conduit, flexible armoring, protective braiding or superior forms of sheathing, must be used.

- Protect conductors entering boxes, cabinets or fittings from abrasion, and provide them with strain relief where necessary.

- Effectively close or seal openings through which conductors enter.

- Only use flexible cords in continuous lengths without splices or taps.

- Support cords at least every 1.8 meters (6 feet) to avoid stress on the connections.

- Join conductors by soldered or crimped joints, so that the current-carrying capacity of the cable is not reduced.

- Do not use insulating tape to repair cords and cables.
9. Hazardous Locations
Approve equipment, wiring methods and installation of equipment in locations where flammable liquids, flammable gases or explosive dusts are, or could potentially be, generated for the hazard class of location and for the ignitable or combustible properties of the specific gas, vapor, dust or fiber that will be present.

- Ensure compliance with the requirements for electrical systems and equipment contained in the Company’s Flammable Liquids Requirements.

10. Distribution Panels and Rooms
Install and use electrical distribution panels to prevent electrical-related injuries.

- Guard electrical distribution panels against accidental damage by locating them in specifically designed rooms, using substantial guard posts and rails or other structural means.
- Maintain a clear approach and 1 meter (3 foot) side clearance for all distribution panels. Provide sufficient access, working space, ventilation and lighting to allow work without risk of injury.
- Mark metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes and other similar associated equipment with appropriate caution signs to indicate the danger presented by exposed energized parts.
- Control access to electrical installations to permit entry/access only to those workers who are qualified by training and experience to enter. Keep electrical distribution panels and cabinets closed.
- Provide fire control equipment approved for use on electrical fires in electrical power distribution centers in compliance with the Company’s Fire Control Requirements.
- Do not use power distribution centers as storage rooms. Keep them free of flammable and combustible materials.

11. Electrical Guarding
Guard live parts of electric equipment operating at 50 volts or more against accidental contact through location in an area with controlled access or other safeguarding in compliance with the Company’s Machine Safeguarding Requirements.

- Fixtures, switches, circuit breakers, switchboards and equipment should be installed, or have physical barriers installed, so as to protect the device from physical or mechanical damage.
12. Protective Equipment
Associates working in areas where the potential contact with exposed electrical sources is present shall use tools, equipment and Personal Protective Equipment (PPE) designed to prevent electricity-related injury.

- Personal Protective Equipment must be appropriate to the activity or potential risk and selected and used in accordance with the Company’s Personal Protective Equipment Requirements.
- Properly insulate all tools used for electrical work.
- Do not use conductive lifting equipment and ladders when conducting work on or near electrical systems.
- Use fuse handling equipment insulated for the circuit voltage to remove or install fuses when the terminal is energized.

13. Inspection Program
Implement a documented maintenance and inspection program to maintain the effectiveness and safety of the electrical systems and equipment. Carry out the program at least annually or whenever a major change/alteration to the system or equipment is made.

- The methods of inspection and testing shall conform to the applicable legal standards or the industry consensus standards outlined in this document, whichever is the more stringent.
- Verify the effectiveness of bonding/grounding systems annually to confirm the effectiveness of the system.
- Inspect insulated tools for electrical work at least annually to confirm the integrity of the equipment.
- Portable electrical equipment shall be visually inspected by the user for damage, including wear, cracked or spilt outer jackets or insulation, damaged plugs and missing ground pins before use. Take damaged equipment out of service and repair or replace it.
14. Training and Qualifications

Ensure that employees and other affected personnel are adequately trained to perform their roles and responsibilities with regard to electrical safety.

- Provide initial awareness training and periodic refresher training to all employees to provide a basic understanding of electrical hazards and required safety precautions.

- Personnel conducting installation, maintenance, and inspection or testing of electrical systems shall be professionally qualified electrical engineers and/or tradesmen and, if required by regulation, shall hold a license rated for the work being performed.
  - Where such licensure systems do not exist in a country, a definition of competency shall be established by the facility; and persons working on the electrical systems shall be assessed against this definition. The following criteria are required to be met if a person is to be determined competent or qualified to work on electrical systems:
    - Adequate knowledge of electricity;
    - Adequate knowledge of electrical work;
    - Adequate understanding of the system to be worked on or practical experience with that type of system;
    - Understanding of the hazards that may arise during work and the precautions that need to be taken; and
    - Ability to recognize at all times whether it is safe for work to continue.

- Ensure that contractors and visitors understand and follow site requirements regarding electrical safety, in compliance with the Contractor and Visitor Management Requirements.
Electrical Safety Requirements

References

Electrical Systems Guidelines
Canada Electrical Safety Authority (ESA)
International Electric Code (IEC)
National Electrical Manufacturer’s Association (NEMA)
NFPA 70, The National Electrical Code
NFPA 70E, Electrical Safety in the Workplace
Contractor and Visitor Management Requirements
Fire Control Requirements
Flammable Liquid Requirements
Hazardous Energy Control Requirements
Machine Safeguarding Requirements
Personal Protective Equipment Requirements

NFPA 70E, Electrical Safety in the Workplace

Revision History

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Summary of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Jan-2010</td>
<td>Revised document released as part of the TCCMS Redesign - Governance Reset. This document contains content from the previous version with reformatting and significant rewording.</td>
</tr>
<tr>
<td>3-Jul-2007</td>
<td>For consistency with other Requirements: moved definitions to Appendix, changed compliance statement, added risk assessment language, revised the battery charging requirements (to align with lift equipment language); Defined requirements for work on energized systems</td>
</tr>
<tr>
<td>3-Nov-2006</td>
<td>Clarified Scope</td>
</tr>
<tr>
<td>25-Aug-2006</td>
<td>Added applicability language, modified definition of local regulation; added reference to Contractor Management Requirements</td>
</tr>
<tr>
<td>20-Apr-2005</td>
<td>Initial Issue</td>
</tr>
</tbody>
</table>
Appendix

Definitions

**Bond:** A conducting connection between two or more electrical circuits or pieces of equipment that ensures a common electrical potential.

**Disconnecting means:** A switch that is used to disconnect the conductors of a circuit from the source of electric current, enabling a circuit to be opened, stopping the flow of electricity, and thus able to effectively protect workers and equipment.

**Equipment:** A general term including material, fittings, devices, appliances, fixtures, apparatus and the like, used as a part of, or in connection with, an electrical installation.

**Ground:** A conducting connection between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

**Over current protectors:** Devices designed to open a circuit, stopping the flow of electricity, in the event of a short circuit, ground fault or any current in excess of the rated current of equipment or the capacity of a conductor.

**Portable Electrical Equipment (PEE):** Cord or plug-type electrical devices, not intended to be permanent fixtures, using flexible and/or extension cords. Examples of portable electrical equipment include powered hand tools, powered bench tools, fans, radios, etc.

**Premises wiring system:** A facility’s interior and exterior wiring, including power, lighting, control and signal circuit wiring, together with all associated hardware, fittings and wiring devices, whether permanently or temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors, to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers and similar equipment.

**Qualified Worker:** An associate or contractor trained and authorized to conduct electrical work.

**Unqualified Worker:** An associate or contractor who has not been trained or authorized to conduct electrical work.