

# **Electrical Safety Program – All Personnel**

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## 1 PURPOSE

The purpose of this program is to establish requirements for all personnel working with and around electrical equipment.

## 2 SCOPE

This program applies to all Mosaic North America employees and contractors performing work with and around electrical equipment at all Mosaic North America facilities.

Qualified electrical workers, including all roles under that designation such as task qualified workers, instrumentation technicians, etc., are also required to abide by the Electrical Safety - Qualified Program.

This program does **NOT** apply to installations under the exclusive control of an electric utility where installations:

- Consist of service drops or service laterals, and associated metering **OR**
- Are in legally established easements or rights-of-way OR
- Are on property owned or leased by the electric utility **OR**
- Are located by other written agreements (for communications, metering, generation, control, transformation, or distribution of electrical energy) either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies where legally established easements or rights-of-way cannot be obtained

The requirements contained in this document are designed to supplement the manufacturer's literature, industry standards, experience and knowledge. The requirements / guidance contained does not address all possible situations, conditions or hazards.

#### **3** APPENDICES

The following appendices are associated with this Program:

Appendix	ndixAppendix TitleDefinitionsRoles and Responsibilities	
А		
В		

## 4 GENERAL REQUIREMENTS

4.1 Only qualified persons shall perform tasks such as testing, troubleshooting, repairs, and voltage measuring on electrical equipment operating at voltages equal to or greater than 30 volts AC and 50 volts DC. Work above 30 volts AC and 50 volts DC is considered energized work.



- Note: For Qualified Electrical and Task Qualified Workers there are some exceptions to this definition. See North America – Electrical Safety Qualified Program.
- 4.2 Before cutting or drilling into equipment, floors, walls, or structural elements a risk assessment shall be performed and documented to:
  - Identify and mark the location of conductors, cables, raceways, or equipment
  - Create an electrically safe work condition
  - Identify safe work practices and PPE to be used
- 4.3 The appropriate owners or authorities to identify and mark the location of the electrical lines or equipment shall be contacted before excavation starts.
  - **Reference:** EHSS-Phos Program Trenching and Excavation
  - **Reference:** Potash Site Level Trenching and Excavation Procedures
- 4.4 Notify Electrical department immediately whenever underground electrical utilities are struck.
- 4.5 Operation of electrical equipment to be in accordance with manufacturer's instruction; employees are to be trained and task qualified before operating electrical equipment.
- 4.6 All employees shall read and comply with all posted warning signs and instructions.
- 4.7 Do not open cabinets containing high-voltage electrical equipment unless specifically trained in the safe operation of this equipment.
- 4.8 Do not enter fenced substations unless qualified or escorted by a qualified person; nonqualified persons must be made aware of all hazards and applicable procedures before entering.
- 4.9 Non-qualified personnel shall remain outside the shock protection or Arc Flash Boundaries when energized work is being performed. See Figure 1 below.
- 4.10 Assume all electrical circuits / equipment is energized until it has been placed into an Electrically Safe Work Condition (ESWC), locked out / tagged out (LOTO), and verified deenergized with safety ground applied where required.
- 4.11 Immediately report all fluid leaks from electrical equipment, such as transformers, to the Electrical department and EHS.
- 4.12 Do not drive over any unprotected power cables. Do not drive across substation ground wires or disconnect any permanently attached ground wires.
  - Note: Report missing or damaged ground wire to the Electrical department
- 4.13 Do not handle any energized cables unless trained and while utilizing the proper procedure and tools.



- 4.14 Do not use damaged electrical equipment (fixed or portable); damaged cables, cords; or connectors; or damaged receptacles.
- 4.15 Do not unplug / plug cords with wet hands or gloves.
- 4.16 Do not use flammable materials near energized electrical equipment that may create a spark.
- 4.17 Working spaces shall be kept clear and maintained to permit safe operation and maintenance of electrical equipment.
- 4.18 Do not overload circuits, such as by running multiple appliances from a single outlet.
- 4.19 Report any locks, interlocks, and other safety equipment not in proper working condition.
- 4.20 Circuits that have been de-energized by Circuit Protective Device shall not be manually reenergized unless:
  - It has been determined that the de-energization was caused by an overload OR
  - The equipment and circuits have been thoroughly examined by Qualified Personnel and determined to be safe to re-energized

## 5 ELECTRICAL HAZARD IDENTIFICATION AND REPORTING

- 5.1 All personnel should be trained to identify and report electrical hazards.
- 5.2 All personnel shall report any identified electrical hazards immediately to the electrical department.
- 5.3 Electrical hazards not marked by safety signs and tags should be tagged, barricaded and reported immediately.
- 5.4 Energized parts of electrical equipment operating at 30 volts AC and 50 volts DC or more that is not guarded against accidental contact is an electrical hazard and shall be barricaded and reported immediately.
- 5.5 When working near electrical hazards with the potential for inadvertent contact protective shields, protective barriers, or insulating materials shall be used to protect personnel including:
  - Where dangerous electric heating or arcing might occur
  - Within the Limited Approach Boundary
  - In confined space or enclosed space (i.e. manhole, vault, etc.)

**Note**: It is recommended as a best practice that leather or arc resistant gloves should be used when working near energized electrical equipment.

**Note**: Potash facilities require gloves for all work per the Potash PPE Program.



- 5.6 Do not remain around electrical equipment where there is evidence of impending failure, such as abnormal smells, sounds, and visual conditions, report the finding immediately and deenergize equipment if possible and without increase of risk.
- 5.7 Until electrical equipment (with evidence of impending failure) is de-energized or repaired, proper barricades and other alerting techniques must be utilized to prevent injuries to employees.
- 5.8 Electrical hazards created due to structural failures that result in water leaks into electrical areas, such as roof leaks, shall be reported immediately.

## **6 WORK AROUND ELECTRICAL HAZARDS**

6.1 All work at the facility shall be planned and hazard analysis performed prior to work starting, including completing a Hazard Assessment (FLHA).

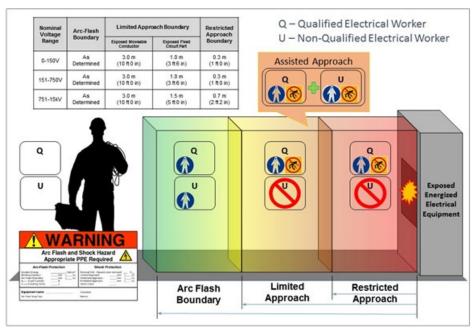
Note: A risk assessment should be completed when working near electrical equipment including: near ventilated enclosures with openings, motors, etc. Any hazards identified shall be reported and addressed.

- 6.2 Electrical disconnect switches and breakers shall not be opened while the equipment is operating under load if there is a means to shut down the equipment.
- 6.3 Personnel (non-qualified and qualified) required to open disconnects as part of their job duties shall be trained in the proper method and hazards associated with the task and equipment.
- 6.4 Personnel required to use Lineman Gloves, (e.g. rubber insulated gloves with leather protectors), in performing their work shall be trained in the proper use and required inspections / replacement of the gloves
- 6.5 Employees shall not reach blindly into areas that might contain exposed energized electrical equipment where an electrical hazard exists.
- 6.6 Personnel shall not bring any non-electrically rated tools or equipment into the work area (this includes ladders and stools).
- 6.7 Non-conductive fiberglass ladders shall be used when a portable ladder is required. Metal ladders are not allowed.
- 6.8 Conductive materials, tools, and equipment that are in contact with an employee's body shall be handled in a manner that prevents unintentional contact with energized electrical equipment.
- 6.9 For underground mining equipment requiring generator power, avoid simultaneous contact between generator or generator powered equipment and other utility powered equipment or structures (such as conveyor structure).



- 6.10 Non-qualified personnel shall not come closer than the Limited Approach Boundary to any unguarded, uninsulated, energized overhead power lines.
  - **Reference:** EHSS North America High Voltage Lines and Cables
- 6.11 Non-qualified person(s) shall not be permitted to approach nearer than the Limited Approach Boundary of energized equipment unless additional safeguards are in place.
  - **Note**: See Figure 1 below for 6.9 6.12
- 6.12 When non-qualified person(s) are working at or close to the Limited Approach Boundary, the designated person in charge of the workspace where the electrical hazard exists:
  - Shall advise the non-qualified person(s) of the electrical hazard
  - Shall warn them to stay outside of the Limited Approach Boundary
- 6.13 If a non-qualified person needs to cross the Limited Approach Boundary (as part of their normal job function), then a qualified person:
  - Shall advise the non-qualified person(s) of the possible hazards
  - Shall continuously escort the non-qualified person(s) while inside the Limited Approach Boundary
- 6.14 Under no circumstances shall non-qualified person(s) be permitted to cross the Restricted Approach Boundary or Arc Flash Boundary.





		Limited Appro	Restricted		
Nominal Voltage Range	Arc-Flash Boundary	Exposed Moveable Conductor	Exposed Fixed Circuit Part	Approach Boundary	
0-150V	As	3.0 m	1.0 m	0.3 m	
0-1500	Determined	(10 ft 0 in)	(3 ft 6 in)	(1 ft 0 in)	
151-750V	As	3.0 m	1.0 m	0.3 m	
151-7500	Determined	(10 ft 0 in)	(3 ft 6 in)	(1 ft 0 in)	
751-15kV	As	3.0 m	1.5 m	0.7 m	
751-15KV	Determined	(10 ft 0 in)	(5 ft 0 in)	(2 ft 2 in)	

Figure 1 Approach Boundaries for Shock, Qualified Electrical Worker vs. Unqualified Personnel (e.g. Non-Electrical Worker)

## 7 SAFETY INTERLOCKS

7.1 Safety interlocks require a critical device bypass permit to override.

**Reference:** EHSS North America – Critical EHS Devices

- 7.2 Only qualified persons are approved to override safety interlocks who are experienced with the equipment being serviced and who understand the consequences of overriding the interlocks.
- 7.3 The safety interlock system shall be returned to its normal operable condition when the work is completed and positive confirmation that each interlock is functioning as intended shall be made.

## 8 MOTOR CONTROL CENTERS (MCCs), SUBSTATIONS, AND ELECTRICAL ROOMS

8.1 Non-Qualified personnel shall not open MCC cubicles.



- 8.2 MCC rooms, electrical equipment rooms, and transformer areas shall not be used for break areas, storage areas, or any non-electrical activities.
- 8.3 Enclosures shall be kept free of material that would expose employees to an electrical hazard.
- 8.4 Each MCC / Switchgear room shall have:
  - Mounted single line diagram or electrical layout of the electrical installation
  - Necessary fire extinguishing equipment
- 8.5 Notify a qualified person when working in an MCC room.
- 8.6 When working in an MCC room observe posted safety signs, symbols, or accident prevention tags where necessary.,
- 8.7 All substations with exposed electrical equipment shall be closed and locked.
- 8.8 Switch and breaker doors shall be kept closed unless Qualified Personnel are performing maintenance or troubleshooting on the switch or breaker.
  - Note: Report any problems with enclosures, including door latches, to the Electrical department.

## 9 BARRICADES AND SIGNS

9.1 Work area shall be established and marked around energized work at either the Limited Approach Boundary or Arc Flash Boundary (whichever distance is greater) as defined in Figure 1.

- 9.2 Barricades in conjunction with safety signs shall be used to prevent or limit employee access to work areas containing electrical equipment.
- 9.3 If signs and barricades do not provide sufficient warning and protection from electrical hazards while work is being performed, an attendant shall be stationed to warn and protect employees.
- 9.4 An attendant shall remain in the work area as long as there is a possibility for exposure to electrical hazards.
  - Note: The primary duty and responsibility of an attendant providing manual signaling and alerting shall be to keep unqualified employees outside a work area where the unqualified employee might be exposed to electrical hazards or accessing energized look-alike equipment.
- 9.5 In addition to guarding, warning and high voltage signs shall be posted when unqualified personnel could contact live parts.

Note: Both Arc Flash Protection and Shock Boundaries distances will be based on the equipment Arc Flash Hazard Warning Labels



- 9.6 Do not install conductive barricades where it might increase the likelihood of exposure to an electrical hazard.
- 9.7 Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding non-qualified persons to enter.

## **10 IDENTIFICATION AND LABELING**

- 10.1 Permanent identification labels shall be provided for all electrical equipment.
- 10.2 All electrical materials and equipment shall display the label of, or be listed by, an approved testing agency.
- 10.3 All electrical equipment disconnects, transformers, start/stop stations, etc. shall be legibly labeled and identified using non-corrodible tags indicating the equipment number and the specific service.
- 10.4 Equipment and device labels must be installed / placed such that:
  - They remain in place (not attached to the device) when an instrument or device is removed
  - They must not obscure any information printed on existing labels
- 10.5 All switches shall be properly labeled to show which units they control.
- 10.6 All circuits shall be properly identified with appropriate labels in the panel directory as to their use.
- 10.7 Each disconnect switch or over-current device required for a service, feeder, or branch circuit must be clearly labeled:
  - To indicate the circuit's function AND
  - Located at the point of circuit origin
- 10.8 Electrical areas shall be identified with suitable danger and warning signs indicating "Authorized Personnel Only", "Danger High Voltage", or similar wording
- 10.9 Warning signs, where required, shall be visible, securely attached, and maintained in legible condition.
- 10.10 Safety-related instructions (operating or maintenance), if posted, shall be securely attached and maintained in legible condition.

## 11 PORTABLE EQUIPMENT, CORDS, AND PLUGS

11.1 Insulation of portable test equipment, tool cords and physical integrity of casings shall be inspected for internal and external defects prior to each use.



- 11.2 Do not use damaged electrical equipment (fixed or portable); damaged cables, cords, or connectors, or damaged receptacles.
- 11.3 Portable cords and flexible cords (i.e. extension cords) shall contain a grounding conductor.
- 11.4 Flexible cords and cables shall be maintained to preserve integrity.
- 11.5 Flexible cords shall be protected from accidental damage.
- 11.6 Cords connected to equipment shall not be used for raising or lowering the equipment.
- 11.7 Cords shall not be fastened with staples or hung to avoid causing damage to the outer jacket or insulation.
- 11.8 Cords shall not be used as a permanent substitute for fixed wiring on any equipment or structure.
- 11.9 Cords shall be properly protected when subjected to vehicular traffic.
- 11.10 Cords shall not be altered, nor shall adapters be used which would prevent proper grounding of tools or equipment.
- 11.11 Cords and cables shall not have worn, frayed, or damaged areas.
- 11.12 Cords shall be routed so that they do not present a trip hazard in aisles and workspaces.
- 11.13 All portable electric equipment and flexible cords used in highly conductive work locations, such as those with water or other conductive liquids, or in places where employees are likely to contact water or conductive liquids, must be approved for those locations.
- 11.14 Employee's hands and gloves must be dry when plugging and unplugging flexible cords and cord-and-plug connected equipment.
- 11.15 Plugs shall not be removed from power receptacles by pulling on the cord.
- 11.16 Plug and receptacle contacts must be checked to ensure compatibility before connecting to a receptacle.
- 11.17 Locking-type connectors shall be secured after connection.
- 11.18 Attachment plugs and receptacles shall not be connected or altered in a manner that would interrupt continuity of the equipment grounding conductor.
- 11.19 Do not alter or use attachment plugs and receptacles in a manner that was not intended by the manufacturer.
- 11.20 Energized plug and receptacle connections shall be handled only with insulating protective equipment if the condition of the connection could provide a conductive path to the employee's hand (e.g., if a cord connector is wet from being immersed in water).
- 11.21 Attachment plugs, receptacles, cover plates, and cord connectors shall be maintained such that:
  - There are no breaks, damage, or cracks exposing energized electrical equipment and parts



- There are no missing cover plates
- Terminations have no stray strands or loose terminals
- There are no missing, loose, altered, or damaged blades, pins, or contacts
- 11.22 Any damaged or defective material shall be immediately reported to the employee's supervisor and removed from service until repairs are made by a qualified person and all necessary tests have been made to verify safe operation.
- 11.23 Portable equipment 120V cords shall not be spliced.
- 11.24 Stationary cord-and-plug-connected equipment and flexible cord sets (extension cords) that remain connected and are not subject to physical damage during normal use shall not be required to be visually inspected.
- 11.25 Stationary cord-and-plug-connected equipment and flexible cord sets shall be required to be visually inspected when relocated or repaired.
- 11.26 Portable equipment shall be handled and stored in a manner that will not cause damage.
- 11.27 Use of portable generators, including light towers and welders used as a power source, shall follow all manufacturer, local codes and standards, and site-specific guidelines.
- 11.28 Verify cords, including extension and portable hand tools, have been tested and labeled accordingly per site procedure.

## **12 GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTION**

- 12.1 Employees shall be provided with ground-fault circuit-interrupter (GFCI) protection where required by applicable federal or local codes and standards.
- 12.2 All extension cords shall use GFCI protection fixed or portable.
  - Note: Exception in Canada: All workers shall use portable GFCI protection in all areas with the following exceptions: Employee parking areas.
- 12.3 Where employees are likely to contact or be drenched with water or conductive liquids, ground-fault circuit-interrupter (GFCI) protection for personnel shall be used.
- 12.4 Specialized equipment which will be not function from a GFCI source requires approval from Mosaic Electrical Supervisor.
- 12.5 All GFCIs must be tested in accordance to the manufacturer requirements prior to use

## **13 ENERGIZED ELECTRICAL EQUIPMENT PERSONAL PROTECTIVE EQUIPMENT (PPE)**

13.1 General company guidelines for PPE as per the applicable PPE Program shall be followed for routine work, non-electrical work. The Following additional PPE requirements are necessary when working around energized electrical equipment.



- 13.2 Only nonconductive PPE shall be used.
- 13.3 Employees shall use PPE (provided by Mosaic) that is designed and constructed for the specific part of the body to be protected and for the work to be performed.
- 13.4 Conductive articles of clothing or jewelry (i.e. watchbands, rings, key chains, necklaces, metalized clothing or headgear, etc.) shall not be worn when working with energized electrical equipment.
- 13.5 PPE shall cover ALL potentially exposed areas of the body as completely as possible.
- 13.6 PPE shall cover ALL flammable apparel as completely as possible.
- 13.7 Meltable fibers such as acetate, nylon, polyester, polypropylene, and spandex shall not be permitted in fabric underlayers.

**Note**: An incidental amount of elastic used on non-melting fabric underwear or socks shall be permitted

- 13.8 Clothing and other apparel (such as hard hat liners and hair nets) made from meltable fibers shall not be worn.
- 13.9 Clothing required for the degree of exposure shall be permitted to be worn alone or integrated with flammable, non-melting apparel, in locations where applicable.

**Note**: In Canadian locations standard PPE includes FR and Arc Rated clothing

- 13.10 All personnel shall be trained in the proper use, care, maintenance and required inspections for issued PPE.
- 13.11 All PPE shall be visually inspected before each use for damage and defects.
- 13.12 All PPE shall be replaced as needed if damaged or defective.
- 13.13 Body PPE requirements when working with energized electrical equipment:
  - Shirt and coverall sleeves shall be fastened at the wrists
  - Shirts shall be tucked into pants
  - Shirts, coveralls, and jackets shall be closed at the neck

13.14 Foot PPE requirements:

- Employees shall wear dielectric footwear to protect against step and touch potential hazards
- Insulating soles shall NOT be used as primary electrical protection



- 13.15 Do not remove any labels from PPE as applied by manufacturer. Do not apply any labels or stickers to PPE without approval.
- 13.16 PPE shall be maintained in a safe, clean, and reliable condition and in accordance with manufacturers' instructions.
- 13.17 PPE shall be stored in a manner to prevent damage from physically damaging conditions and from moisture, dust, or other deteriorating agents.

**Reference:** EHSS-Phos Program Personal Protective Equipment (PPE)

Reference: Potash Use of Personal Protective Equipment (PPE)

13.18 Phosphates: The following PPE is required for all persons performing Normal Operation on Equipment (greater than or equal to 480 volts) in Normal Condition:

- Arc Rated Lab Jacket (minimum Arc-Flash rating of 8 cal/cm2)
- Arc Rated Face Shield (minimum Arc-Flash rating of 8 cal/cm2)
- Leather Gloves with extended sleeves
- Hard Hat
- Safety Glasses or Goggles
- Hearing Protection
- Foot Protection per Mosaic PPE Policy
- Non-melting shirt and pants
- 13.19 Potash: Standard daily wear PPE is required for all persons performing Normal Operation on Equipment (up to 480 and not exceeding 1000 volts) in Normal Condition:
  - Arc Rated Coveralls or Shirt and Pants (minimum Arc-Flash rating of 8 cal/cm2)
  - Issued Gloves
  - Hard Hat
  - Safety Glasses or Goggles
  - Hearing Protection
  - Foot Protection per Mosaic PPE Policy
- 13.20 Potash: The following PPE is required for all persons performing Normal Operation on Equipment (exceeding 1000 volts) in Normal Condition:
  - Arc Rated Coveralls or Shirt and Pants (minimum Arc-Flash rating of 8 cal/cm2)
  - Lineman Gloves (rubber insulated gloves with leather protector)
  - Hard Hat



- Safety Glasses or Goggles
- Hearing Protection
- Foot Protection per Mosaic PPE Policy
- Arc Rated Face Shield (minimum Arc-Flash rating of 8 cal/cm2)

# **14 TRAINING**

14.1 Training

- 14.2 Below are key subject areas for General Awareness training:
  - Understanding the specific hazards associated with electrical energy
  - Understanding safety-related work practices and procedural requirements, as necessary, to provide protection from the electrical hazards associated with their respective job or task assignments
  - Identifying and understanding the relationship between electrical hazards and possible injury
  - Hazards inherent to electricity, including High Voltages, electric current, and arcing
  - Grounding of mobile and portable equipment
  - Lack of guarding
  - Guarding by location
  - Actuating / pulling an electrical breaker
  - "Authorized Entry" into MCC rooms while electrical personnel are performing work on energized circuitry
  - MCC housekeeping and use
  - Attachment plugs Understand how to properly remove an attachment plug from a receptacle
  - Indicators of impending equipment failure
  - Overhead power lines Be aware of the proper approach distance from overhead power lines
  - Awareness of alerting techniques such as safety signs and tags, barricades, and warning attendants
  - General awareness training on "Authorized Entry" into MCC rooms while the electrical personnel are performing work on energized circuitry
  - Electrical PPE requirements

The following table outlines the training required for Electrical Safety All Personnel:



## **Electrical Safety All Personnel**

Audience	Training Elements / Topics	Frequency	Method
All employees (qualified and non-qualified)	General Awareness Electrical Hazard Recognition	Initial and Annual	CBT or ILT

#### 14.3 Retraining

- 14.3.1 Retraining in safety related work practices and applicable changes in this Program shall be performed not to exceed 3 years.
- 14.3.2 In addition, an employee shall receive additional training (or retraining) if any of the following conditions exist:
- Program requirements change;
- Changes in the workplace render previous training obsolete;
- Inadequacies in the employee's knowledge is of concern
- Supervisor or annual inspections indicate the employee is not complying with the safety-related work practices
- New technology, new types of equipment or changes in procedures necessitate the use of safety-related work practices different from those that the employee would normally use
- The employee needs to review tasks that are performed less often than once per year.
- The employee needs to utilize safety-related work practices not normally used by the employee during regular job duties.
- The employee's job duties change

#### 14.4 Training records

- 14.4.1 Training records shall be maintained by the Phosphates Learning Management System (LMS).
- 14.4.2 Training records shall be maintained as per *Mosaic Document and Record Control* policy.
- **Reference:** Mosaic Document and Record Control policy

#### **15 SELF-ASSESSMENTS**

- 15.1 Site self-assessment shall be conducted in accordance with the MMS requirements.
- 15.2 The following should be included as part of the self-assessment:
  - A review of this document for accuracy and applicability
  - An evaluation of site compliance through field observations / audits



- A review of the Risk Register for any entries related to the Program
- A review of recent site and / or BU related incidents
- A review of compliance with training requirements as per the Training Matrix
- 15.3 Document results of self-assessment and corresponding corrective actions.

**Note**: Recommend any changes to the Program EHS Project Management Office (PMO) via the PMO Change Request form

## **16 PROGRAM REVIEW**

16.1 North America EHS team will review this program annually and update as required.

## **17 RECORD RETENTION**

- 17.1 Refer to the *Mosaic Document and Record Control* policy for record retention requirements.
  - **Reference:** Mosaic Document and Record Control policy

## **18 REFERENCES**

References (Number and title)					
Canada:					
<ul> <li>S-15.1 The Saskatchewan Employment Act</li> </ul>					
<ul> <li>O-1.1 Reg 1 The Occupational Health and Safety Regulations</li> </ul>					
<ul> <li>O-1.1 Reg 2 The Mines Regulations</li> </ul>					
<ul> <li>E-6.3 Reg 9 The Use of Electricity in Mines Regulations</li> </ul>					
<ul> <li>CAN/CSA-C22.1 Canadian Electrical Code (CEC) Part 1</li> </ul>					
<ul> <li>CSA M421 Use of Electricity in Mines</li> </ul>					
<ul> <li>CSA Z462 Workplace Electrical Safety</li> </ul>					
<ul> <li>CAN/CSA-Z460 Control of Hazardous Energy – Lockout and other Methods</li> </ul>					
<ul> <li>CAN/CSA-Z1000 Occupational Health and Safety Management</li> </ul>					
<ul> <li>CAN/CSA-Z195 Protective Footwear</li> </ul>					
<ul> <li>CAN/CSA-Z94.3 Eye and Face Protectors</li> </ul>					
<ul> <li>CAN/CSA-Z94.1 Industrial Protective Headwear</li> </ul>					
<ul> <li>CAN/CSA-Z11 Portable Ladders</li> </ul>					
United States					
<ul> <li>MSHA Act and Standards, and any State specific requirement</li> </ul>					
<ul> <li>NFPA 70, National Electrical Code</li> </ul>					
<ul> <li>NFPA 70E Standard for Electrical Safety in the Workplace</li> </ul>					
<ul> <li>ANSI Z10 Occupational Health and Safety Management Systems</li> </ul>					
ANSI Z89.1 Requirements for Protective Headwear for Industrial Workers					



## **Electrical Safety All Personnel**

#### **References (Number and title)**

- Other international Standards:
  - OHSAS 18001 Occupational health and safety management systems -Requirements
  - IEEE 1584 Guide for Performing Arc Flash Hazard Calculations
  - American Society for Testing and Materials (ASTM) Standards

**Note:** Refer to CSA Z462 or NFPA 70E for other specifically referenced CSA, UL, NFPA, AIHA, ANSI, ASC, ASTM, ON IHSA EUSA, Health Canada, ICRP, IEC, IEEE, ILO, ISO, NEMA, NETA, OHSAS.

Mosaic Document and Record Control Policy

EHSS-Phos Program Personal Protective Equipment (PPE)

Potash Use of Personal Protective Equipment (PPE)

EHSS North America High Voltage Lines and Cables

EHSS-Phos Program Trenching and Excavation

Potash Site Level Trenching and Excavation Procedures

## **19 REVISION LOG**

Rev. No.	Rev. Date	Revised By	<b>Reason for Revision</b>
0	1/1/2022	EHSS PMO	Initial release
1	11/14/2023	Electrical Asset Integrity Team	Alignment Z462 and NFPA 70E