





Roles & Responsibilities & Training

EHS North America Program – Electrical Safety Qualified, Appendix B

The following table defines key terms used to categorize roles in the *EHSS – North America Electrical Safety Qualified* program:

Mosaic Qualified Electrical Worker (QEW) as reference throughout the Electrical Safety Qualified Program is an Electrical Worker that meets minimum qualification requirements of the Jurisdiction that the Mosaic Business Unit operates in for Canada or the United States plus the Mosaic requirements. Where the Jurisdiction doesn't have an approved trade qualification the worker must meet the requirements of a Mosaic Qualified Electrician, with suitable experience and knowledge.

 **Note:** Electrical Engineers in Canada require a P.Eng in addition to the requirements in this program before they can be considered a QEW (Saskatchewan Regulatory) and are considered Task Qualified Workers (TQW) while an Engineer in Training (EIT).


 **Reference:** S-15.1 REG 10 Occupational Health and Safety, 2020 Part 30

Term	Definition	Example
Mosaic Qualified Electrical Worker (QEW)	<p>An employee trained and knowledgeable of the construction and operation of equipment or a specific work method and trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method. Such employees shall also be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools and test equipment.</p> <p>A Mosaic employee or contractor who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify the hazards and reduce the associated risk. A qualified person shall be approved for specific tasks by Mosaic Supervision.</p>	<p>Electrician</p> <p>Electrical Engineering Technologist</p> <p>Electrical Engineer</p> <p>Phosphates EIA</p> <p>Electrical Engineering Licensee</p> <p>Engineering or Electrical Applied Science Technologist (e.g. CET, A.Sc.T)</p>



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Term	Definition	Example
	 Note: A person can be considered qualified with respect to certain equipment and tasks but still be unqualified for others	
Mosaic Task Qualified Worker (TQW)	Limited scope of energized electrical work tasks, on restricted voltage per trade designation and not to exceed low voltage as defined by this program. The training and certification of the worker may further limit this voltage to a lower level.	<p>Potash Instrumentation Journey Person.</p> <p>Air Conditioning and Refrigeration Technician, Mechanic as a Mine Maintenance Mechanic, Overhead Door Mechanic, Overhead Crane Mechanic, Fire Alarm Technician, Cathodic Protection Technician, Photovoltaic service, or Elevator Mechanic with suitable training, experience, and knowledge to work safely on restricted voltage per trade designation. Qualifications as a Mechanic and performing the work of a Mosaic Mine Maintenance Mechanic for underground work.</p> <p>Canada: Electrician in training and other workers in training (e.g. engineers in training, technologists in training)</p>



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Term	Definition	Example
		requiring direct supervision of a QEW.)
Mosaic Non Electrical Worker (NEW)	Mosaic employees or contractors who have little or no training in avoiding hazards of electrical equipment and parts	Is typically an office worker, welder, general labourer, pipe-fitter, or mechanic and may not meet the requirements of QEW or TQW.

The following table outlines the responsibilities for specific groups / roles as required for **EHS – North America Electrical Qualified** program:

Group / Role	Responsibilities
QEW	<ul style="list-style-type: none">• Complies with the safety-related work practices and procedures within this Program• Must ensure they are aware of foreseeable electrical hazards and appropriate preventive and protective control measure requirements to mitigate or reduce exposure to them.• Must complete the Electrical Safety Program Qualified Training Program and other training requirements as per Error! Reference source not found..• Completes a risk assessment procedure for energized electrical work tasks.• Ensures where practical that all electrical work undertaken is done in a de-energized state.• Read and interpret electrical single line diagrams and related schematics in relation to the switching plan.• Ensures that all new and existing electrical work is correctly documented on controlled electrical drawings such as one-line diagrams.• Understand and apply the information on detailed Arc Flash and Shock labels.• Participates in writing and reviewing safe work procedures.



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Group / Role	Responsibilities
	<ul style="list-style-type: none">• Complies with the safe work procedures and processes of this Electrical Safety Program when working on energized electrical conductors or circuit parts.• Meets defined competency requirements as validated by the Supervisor.• Reports all electrical incidents, including shock (at any voltage) and arc flash to their Supervisor.• Participates in hazard and risk assessments as required.• Wears and uses the appropriate Electrical Specific PPE, Tools and Equipment for all the tasks.• Maintains Electrical Specific PPE, Tools, Clothing and Equipment in proper working condition.• Ensures that guards or protective measures are satisfactory for the conditions• Escorts TQW and NEW personnel in the Limited Approach Boundary for shock if required.• Receives training in methods of first aid, and emergency procedures, e.g. approved methods of resuscitation, CPR and automatic external defibrillator (AED) use if they are available.• Is knowledgeable in the construction and operation of equipment or specific work method• Completes the Energized Electrical Work Permit (EEWP)• Performs only tasks that they are competent, trained, and qualified to perform• Stops any work deemed unsafe• Takes appropriate action including communication to the appropriate management level when new or previously unknown hazards are identified• Is knowledgeable on applicable Electrical Safety regulations, codes and requirements.
TQW	<ul style="list-style-type: none">• Completes troubleshooting and diagnostic related work tasks downstream of a local disconnect.



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Group / Role	Responsibilities
	<ul style="list-style-type: none">• Understands their job scope and limitations, and must be aware of the electrical hazards of arc flash and shock.• Ensures that all electrical repair and alteration work is done in a de-energized state.• Knows how to select and use the appropriate Electrical Specific PPE, Tools and Equipment for the work task.• Knows how to care, maintain, and pre-use inspect Electrical Specific, Tools and Equipment.• Understand and apply the information on detailed Arc Flash and Shock Warning labels when it applies.• Meets defined competency requirements as validated by their Supervisor.• Must receive electrical safety awareness training.• Must meet the Training requirements as per Error! Reference source not found..• Informs their supervisor if they believe they are not fully qualified or trained for the task they have been given to perform
NEW	<ul style="list-style-type: none">• Complies with the safety-related work practices and procedures within the Electrical All Personnel Program• Informs their supervisor if they believe they are not fully qualified or trained for the task they have been given to perform• Stops any work deemed unsafe• Complies with established work methods and the use of protective equipment• Receives electrical safety awareness training as outlined in Error! Reference source not found..• Must notify a QEW if there are abnormal conditions found on electrical equipment.• Welders will be permitted to operate local disconnects on welding plugs for welding equipment. When connecting welding machines, local disconnects are to be in the de-energized state.



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Group / Role	Responsibilities
Electrical Supervisor	<ul style="list-style-type: none">• Ensures that this Program is followed by all employees and contractors• Ensures that those workers who are exposed to energized electrical conductors or circuit parts are trained, qualified, and authorized to undertake the work task.• Determines if an individual meets the requirements to be considered a Qualified Electrical Worker or Task Qualified Worker for a specific task• Coordinates and/or provides Mosaic Qualified Personnel training and retraining• Maintains documentation of Qualified personnel training and retraining• Accountable to ensure validation of competency of Qualified Electrical Workers by interviewing, testing, inspecting, and observing.• Determines through regular supervision or through inspections that each employee is complying with the safety-related work practices required by this Program• Ensures the MOC process is followed for changes to electrical equipment and those changes are properly documented and equipment labels updated as required• Ensures new and modified electrical equipment is inspected to comply with applicable installation codes and standards and properly maintained• Supports and ensures that workers complete a risk assessment procedure and that the electrical hazards of arc flash and shock are identified and assessed.• Conducts periodic hazard analysis of electrical work sites and procedures.• Develops and implements site-specific Safe Electrical Work Policies and Procedures• Approves the selection and use of PPE and Electrical Safety equipment• Approves Energized Electrical Work Permit (EEWP)• Ensures identified electrical safety hazards are corrected in a timely manner with appropriate corrective actions.• Authorizes low risk justified energized electrical work tasks.• Responsible to ensure that all electrical incidents are reported.



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Group / Role	Responsibilities
	<ul style="list-style-type: none">• Participates in all electrical incident investigations and ensures that all corrective actions are implemented.• Is knowledgeable on applicable Electrical Safety regulations, codes and requirements• Determines if equipment meets requirements of Normal Operating Condition• Identifies and tags equipment not considered to be in Normal Operating Condition• Ensures Field Work Audits are completed and documented
Electrical Engineer	<ul style="list-style-type: none">• Supports the PMO process for maintaining and updating this Program• Measures and evaluates the effectiveness of this program• Ensures that the Incident Energy Analysis for each facility is properly updated and maintained• Provides assistance as needed for approving the selection and use of Electrical Safety equipment and clothing• Assists in identifying the level of Risk Management applied to specific live electrical hazards• Evaluates Mosaic Engineering Standards to consider using new technology or design requirements aimed at minimizing Incident Energy levels and employee exposures to electrical hazards• Coordinates with Mosaic Training to support training of Mosaic employees exposed to electrical hazards
Safety Observer	<ul style="list-style-type: none">• Monitors for unsafe conditions when work is being performed within Limited Approach Boundary• Is aware of and understands isolation points and electrical emergency procedures• Provides warnings for unsafe conditions• Keeps unqualified employees outside a work area where the unqualified employee might be exposed to electrical hazards• Is qualified and trained in CPR and contact release• Is a qualified person



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	<ul style="list-style-type: none">• Shall have no other duties while acting in this capacity
Contractor	<ul style="list-style-type: none">• Provides personnel qualified for the task they are performing and provide documentation of qualifications if requested by Mosaic• Ensures personnel are properly trained for the task they are performing and provide documentation of training if requested by Mosaic• Ensures personnel comply with the safety-related work practices and procedures within this Program.• Ensures compliance with all applicable Federal (OSHA, MSHA, etc.), State, Local and County regulations.• Provides all required PPE and electrical safety equipment for their personnel.• Advises Mosaic of the following:<ul style="list-style-type: none">• Any unique hazards presented by the work• Hazards identified during work that were not communicated by Mosaic• The measures the contractor took to correct any violations reported by Mosaic and to prevent such violation from recurring in the future
General Manager	<ul style="list-style-type: none">• Review and approve EEWP or delegate someone to review and approve EEWP
Health and Safety Manager	<ul style="list-style-type: none">• Utilizes the PMO Process for updating and maintaining this Program• Ensures the Mosaic Incident Investigation Program is followed when electrical incidents occur• Audits and maintains documentation of audits of Electrical Safety Program and Electrical Safety Training



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The following table outlines the training as required for *EHSS – North America Electrical Qualified* program:

Training and Qualifications X = Required O = Optional	Supervisor / Engineer	QEW	TQW	NEW
Has a comprehensive knowledge of the construction, operation, installation of the electrical equipment and maintenance work tasks and the associated safety implications.	X	X	X	
All applicable codes, standards and regulatory requirements such as: CEC Part 1 / CSA M421 Update Training, and CSA Z462 for Canada only or NEC (NFPA 70) Update Training, CFR MSHA, and NFPA 70E for United States	X	X	X	
Can determine the nominal voltage of exposed energized electrical conductors and circuit parts.	X	X	X	
Has received Electrical All Personnel Program Orientation training and is familiar with the Electrical All Personnel requirements.	X	X	X	X
Has received Electrical Qualified Program Orientation training and is familiar with the Electrical Qualified requirements.	X	X	X	
Has received Electrical Safety Program All Personnel - General Awareness Training.	X	X	X	X
Can complete Electrical Hazard Analysis for an energized electrical work task and establish and use the Shock Approach Boundaries and the Arc Flash Boundary.	X	X	X	



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Training and Qualifications X = Required O = Optional	Supervisor / Engineer	QEW	TQW	NEW
Is experienced in the selection, and application of Electrical Specific PPE, Tools and Equipment.	X	X	X	
Trained on proper use, care, and maintenance of Electrical Specific PPE, Tools and Equipment.	X	X	X	
Trained to select an appropriate voltage detector and demonstrate how to use it to test for the absence of voltage.	X	X	X	
Is trained in and is familiar with Company's safety programs, permitting and lock-out/tag-out procedures.	X	X	X	X
Has an understanding of and is familiar with the work to be done and the associated safety implications but may not have formal training.			X	
Has received training to recognize and avoid or mitigate electrical hazards.	X	X	X	X
Electrical Emergency Response / Contact Release & First Aid/CPR & AED.	X	X	X	X