





## Definitions

### EHS - North America Program – Electrical Safety All Personnel, Appendix A

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The following table defines key terms used in the *EHSS North America Electrical Safety All Personnel* program:





Term	Definition
Arc Flash Hazard	A source of possible injury or damage to health associated with the release of energy caused by an electric arc
Arc Flash Suit	A complete arc-rated clothing and equipment system that covers the entire body, except for the hands and feet
Arc Rating	Fabric's arc rating is a measure of the amount of energy that it can absorb before the energy penetrates or moves through it with enough force to carry a 50% probability of causing a second- or third-degree burn. The value of an arc rating is measured in units of calories/cm <sup>2</sup>
Arc Resistant Clothing	Arc resistant protective clothing protects from arc flash and electrical arc hazards   <b>Note:</b> Arc resistant clothing has an arc rating, expressed in cal/cm <sup>2</sup> , that describes their performance to exposure to an electrical arc discharge
Arc-Resistant Equipment	See Switchgear, Arc-Resistant definition
Balaclava (Sock Hood)	An arc-rated hood that protects the neck and head except for the facial area of the eyes and nose
Barricade	A physical obstruction such as tapes, cones, or A-frame-type wood or metal structures intended to provide a warning and to limit access
Barrier	A physical obstruction that is intended to prevent contact with equipment or energized electrical conductors and circuit parts or to prevent unauthorized access to a work area
Boundary, Arc Flash	An approach limit from an arc source, where an arc flash hazard exists, at which incident energy equals 1.2 cal/cm <sup>2</sup> (5 J/cm <sup>2</sup> ) and from which a person could receive a second degree burn   <b>Note:</b> Defines the point at which FR protection is necessary to avoid a second degree burn



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Boundary, Limited Approach	<p>An approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists</p> <p> <b>Note:</b> Non-qualified persons and non-insulated equipment must be kept away from exposed energized parts</p> <p> <b>Note:</b> Non-qualified person may only cross the boundary if their job task requires it and then only under the continuous supervision of qualified person</p>
Boundary, Restricted Approach	<p>An approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc-over combined with inadvertent movement</p> <p> <b>Note:</b> A non-qualified person can never cross Restricted Approach Boundary</p> <p> <b>Note:</b> Qualified persons must be wearing the appropriate voltage rated PPE, use only insulated tools, and have an approved Safe Work Permit</p>
Circuit Protective Device	<p>A device used to protect an electrical circuit or equipment from being overloaded or short circuited</p>
Classified Area	<p>A location that is classified based on the properties of the flammable vapors, liquids, or gases, or combustible dusts or fibers that might be present and the likelihood that a flammable or combustible concentration or quantity is present</p>
De-energized	<p>The electrical energy source is turned off</p>
Electrical Hazard	<p>A dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast</p>
Electrically Safe Work Condition (ESWC)	<p>A state in which an electrical conductor or circuit part has been disconnected from energized parts, locked/tagged in accordance with the Mosaic Lockout/Tagout Program, tested to verify the absence of voltage, and, if necessary, temporarily grounded for personnel protection</p>



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Enclosed	Surrounded by a case, housing, fence, or wall(s) that prevents persons from unintentionally contacting energized parts
Exposed (energized electrical conductors or circuit parts)	Capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to electrical conductors or circuit parts that are not suitably guarded, isolated, or insulated
Fault Current, Available	The largest amount of current capable of being delivered at a point on the system during a short circuit condition
Guarded	Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach or contact by persons or objects to a point of danger
Incident Energy	The amount of thermal energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. Incident energy is typically expressed in calories per square centimeter (cal/cm <sup>2</sup> )
Insulated	Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current
Lineman Gloves	Special protective rubber gloves with protective leather covers used by personnel to provide protection while working on electrical equipment
Motor Control Center (MCC)	A room of motor control equipment or a collection of motor control equipment
Non-Qualified Person	Mosaic employees or contractors who have little or no training in avoiding hazards of electrical equipment and parts



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Normal Operating Condition	<p>Normal operating condition exists when <b>ALL</b> of the following conditions are satisfied:</p> <ul style="list-style-type: none"><li>• The equipment is properly installed</li><li>• The equipment is properly maintained</li><li>• The equipment is used in accordance with instructions included in the listing and labeling and in accordance with manufacturer's instructions</li><li>• The equipment doors are closed and secured</li><li>• All equipment covers are in place and secured</li><li>• There is no evidence of impending failure</li></ul>
Normal Operation of Equipment	<p>Using the equipment for its intended function without opening covers and doors. For example:</p> <ul style="list-style-type: none"><li>• opening and closing switches and circuit breakers</li><li>• reading permanently installed meters</li><li>• pushing control buttons for operation or data viewing</li></ul> <p> <b>Note:</b> Normal operation does not include racking circuit breakers on and off bus or removing and installing fuses</p>
Field Level Hazard Assessment (FLHA)	<p>A written assessment of a certain job-related task, which identifies hazards and lists specific safety precautions and procedures for that task</p>
Qualified Person	<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> <b>Note:</b> A person can be considered qualified with respect to certain equipment and tasks but still be unqualified for others</p>



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Risk Assessment	An overall process that identifies hazards, estimates the likelihood of occurrence of injury or damage to health, estimates the potential severity of injury or damage to health, and determines if protective measures are required
Shock Hazard	A source of possible injury or damage to health associated with current through the body caused by contact or approach to energized electrical conductors or circuit parts
Step Potential	The voltage difference between the feet of a person near an energized, grounded object such as an energized high voltage line on the ground or touching a vehicle.
Touch Potential	Touch potential is the voltage between any two points on a person's body – hand to hand, shoulder to back, elbow to hip, hand to foot and so on. For example, if an overhead conductor falls on a car, and a person touches that car, current could pass from the energized car through the person to the ground.
Switchgear, Arc-Resistant	Equipment designed to withstand the effects of an internal arcing fault and that directs the internally released energy away from the individual
Voltage, nominal	A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class
Voltage ranges	AC voltage ranges (phase to phase) are defined as: <ul style="list-style-type: none"><li>• Low Voltage - Up to 600 volts;</li><li>• Medium Voltage – Between 600 to 5,000 volts;</li><li>• High Voltage - Above 5,000 volts</li></ul>
Working Distance	The distance between a person's face and chest area and a prospective arc source



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Working On (energized electrical conductors or circuit parts)	<p>Intentionally coming in contact with energized electrical conductors or circuit parts with the hands, feet, or other body parts, with tools, probes, or with test equipment, regardless of the personal protective equipment (PPE) a person is wearing. There are two categories of “working on”:</p> <ul style="list-style-type: none"><li>• <b>Diagnostic (testing)</b> is taking readings or measurements of electrical equipment with approved test equipment that does not require making any physical change to the equipment</li><li>• <b>Repair</b> is any physical alteration of electrical equipment (such as making or tightening connections, removing or replacing components, etc.)</li></ul>