

Attachment 1 - Definitions

Arc Blast- an explosive release of molten material from equipment caused by an electrical arc.

Arc Flash Boundary- an approach limit at a distance from a prospective arc source within which a person could receive a second degree burn if an electrical arc flash were to occur.

Arc Flash Hazard- dangerous condition associated with the release of energy caused by an electric arc.

Arc Flash Hazard Analysis- study investigating a worker's potential exposure to arc-flash energy, conducted for the purpose of injury prevention and the determination of safe work practices and the appropriate levels of personal protective equipment (PPE).

Arc Rating- the maximum incident energy resistance demonstrated by a material (or a layered system of materials) prior to break open or at the onset of a second-degree skin burn. Arc rating is normally expressed in calories per centimeter squared (cal/cm²) and is derived from the determined value of the arc thermal performance value (ATPV). Break open is a material response evidenced by the formation of one or more holes in the innermost layer of flame-resistant material that would allow flame to pass through the material.

Authorized Person- a qualified person delegated to perform specific duties under the existing conditions.

Conductive- suitable for carrying electric current.

De-energized- free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth.

Electrical Hazard- dangerous conditions such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast injury.

Electrically Safe Work Condition (see also verified de-energized)- state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to ensure the absence of voltage, and grounded if determined necessary.

Enclosed- surrounded by a case, housing, fence, or wall(s) that prevents persons from accidentally contacting energized parts (see definition of guarded below).

Energized (see also Live Parts) - electrically connected to or having a source of voltage.

Energized Electrical Work - repair, maintenance, troubleshooting, or testing on electrical circuits, components, or systems while energized (i.e., live, "hot"). Any work within the limited approach boundary is considered energized electrical work.

Exposed (as applied to live parts) - capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts that are not suitably guarded, isolated, insulated, or enclosed.

Grounded- connected to earth or to some conducting body that serves in place of the earth.

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.

High Voltage – Circuits with a nominal voltage more than 600 volts.

Incident Energy- amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy is calories per centimeter squared (cal/cm²).

Insulated- separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of electric current.

Isolated Equipment- equipment that has been deenergized and “locked-out” according to the SCU LOTO Program and Procedures.

Limited Approach Boundary- approach limit at a distance from an exposed live part within which a shock hazard exists. Defines the closest approach to an exposed electrical hazard, (conductor, component, etc.), for non-qualified personnel, unless escorted by a qualified worker. Determines the minimum safe distance for the placement of barricades for shock protection. If the qualified electrical workers are unable or unwilling to provide escort for unqualified workers, the unqualified worker may not enter the limited approach boundary.

Live Parts (see also energized) - energized conductive components.

Low Voltage – circuits with a nominal voltage less than or equal to 600 volts.

Nationally Recognized Testing Laboratory (NRTL) - certain private sector organizations recognized by OSHA as an NRTL. The NRTL determines that specific equipment and materials (products) meet consensus-based standards of safety to provide assurance that these products are safe for use in the U.S. workplace.

Overload- operation of equipment in excess of normal, full-load rating or of a conductor in excess of rated ampacity that, when it persists for a sufficient length of time, would

cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload.

Prohibited Approach Boundary- approach limit at a distance from an exposed live part within which work is considered the same as making contact with the live part. All of the requirements for limited and restricted boundaries apply. Any work inside the prohibited boundary is considered the same as being in contact with the exposed uninsulated conductor.

Qualified Person- a person designated by SCU who by reason of experience or instruction has demonstrated familiarity with the operation to be performed and the hazards involved.

Restricted Approach Boundary- approach limit at a distance from an exposed live part within which there is an increased risk of shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the live part. Only qualified and authorized electrical workers may cross the restricted approach boundary. No electrically un-insulated part of the body may cross the restricted approach boundary. A qualified person may cross the restricted boundary only to the extent that is necessary to perform their work.

Safety Watch- is a more stringent hazard control measure than the Two-Person Rule (see definition next page) and is implemented when there are grave consequences from a failure to follow safe-work procedures. This occurs when work is considered high-hazard electrical work, as established by the Hazard Class, or by the work supervisor. When a Safety Watch is required, the Safety Watch is a qualified person who is responsible for monitoring the qualified person(s) doing the work.

Shock Hazard- dangerous condition associated with the possible release of energy caused by contact or approach to live parts.

Shock Hazard Analysis- determination of the voltage to which personnel will be exposed, boundary requirements and the personal protective equipment necessary in order to minimize the possibility of electric shock to personnel.

Two Person Rule - certain work requires two qualified persons. This occurs when work is considered electrically hazardous, as established by the Hazard Class, or by the work supervisor. When the "Two-Person Rule" is required, both workers must be present at the work site, and each worker must be aware of the other worker's tasks.

Verified De-energized (see also electrically safe work condition)- state in which the conductor or circuit part to be worked on or near has been disconnected from energized parts, locked/tagged in accordance with the LOTO Program, tested to ensure the absence of voltage, and grounded if determined necessary.

Voltage (of a circuit) - greatest root-mean-square (rms) (effective) difference of potential between any two conductors of the circuit concerned.

Voltage to Ground- for grounded circuits, the voltage between the given conductor and that point or conductor of the circuit that is grounded; for ungrounded circuits, the greatest voltage between the given conductors and any other conductor of the circuit.

Working Near (live parts) - any activity inside a Limited Approach Boundary.

Working On (live parts) - coming in contact with live parts with the hands, feet, or other body parts, with tools, probes, or with test equipment, regardless of the personal protective equipment a person is wearing.