

TO: ALL COUNTY PERSONNEL

**FROM: VERDENIA C. BAKER
COUNTY ADMINISTRATOR**

PREPARED BY: RISK MANAGEMENT/LOSS CONTROL

**SUBJECT: ELECTRICAL SAFE WORK PRACTICES (QUALIFIED
EMPLOYEE)**

PPM #: CW-O-080

ISSUE DATE:
August 23, 2023

EFFECTIVE DATE:
August 23, 2023

PURPOSE:

To provide guidance on the requirements for safe work practices for employees working on or around electrical equipment in order to avoid injuries and damage related to the accidental release of electrical energy. This procedure is intended to address the qualifications for approved workers, proper safety-related practices, along with the utilization of proper tools and equipment including appropriate PPE – personal protective equipment.

UPDATES:

Future updates to this PPM are the responsibility of the Director of Risk Management.

AUTHORITY:

- The Occupational Safety and Health Administration (OSHA) Occupational Safety and Health Standards, as may be amended at 29 CFR 1910,
- National Fire Protection Association (NFPA) 70, as may be amended.
- PPM# CW-0-070- Lock Out/Tag Out Policy, as may be amended.

DEFINITIONS:

Attachment A

BACKGROUND:

This Policy Procedure Manual is intended to provide additional guidance on the requirements for safe work practices and procedures for “qualified” employees working on or around electrical equipment. To compile all the information and procedures in the applicable codes and standards is beyond the scope of this document; therefore, it is vital that all employees working on, or

around, electrical equipment are trained and familiar with the current codes and industry practices.

Only qualified workers who are familiar with the specific electrical system, and utilizing appropriate PPE (personal protective equipment), shall be permitted to work on or near live electrical circuits. The allowable proximity to live electrical circuits is determined by a formal documented hazard analysis procedure. If the formal documented analysis has not been completed, a minimum of 6 feet shall be established as the prohibited approach boundary.

In general, the procedures outlined here are applicable for energized circuits above 50 volts and less than 1,000 volts per NFPA 70 guidelines. Working on circuits over 600 volts presents increased hazards requiring additional safety procedures, training, and protective equipment.

Employees responsible for working on electrical equipment shall also be responsible for safeguarding the work area. This is in order to protect co-workers and/or the public (including but not limited to – physical separation, segregation, insulation, barricades etc.).

Barricades shall be used in conjunction with safety signs where it is necessary to prevent employee or public access to work areas containing live parts. Nonconductive barricades shall be used where possible. Conductive barricades shall not be used where it might cause an electrical hazard.

POLICY:

Palm Beach County's policy is to ensure that all employees follow proper procedures in order to provide and maintain safe working conditions and to implement practices that will safeguard county individuals and assets, allowing the efficient delivery of services to the residents of Palm Beach County.

All electrical circuits shall be considered live/hot until a qualified worker has tested and evaluated the system (utilizing proper procedures, test equipment, and PPE) to verify that a conductor is de-energized.

Employees shall not work on live electrical equipment, unless necessary, and therefore it is essential that all workers are familiar with and follow the County Lock Out/Tag Out procedures along with procedures for approval to work on energized electrical equipment (Refer to – PPM # CW-O-070 – Lock Out/Tag Out Policy).

RESPONSIBILITIES

A. Department/Division Heads shall:

1. Ensure that all supervisors and employees comply with the procedures set forth in this Policy Procedure Memorandum, as well as the specific methods outlined in the written departmental electrical safety program, which must be developed by the department management and supervisors to cover the type of work and equipment in use. All supervisors and employees shall be trained on, and familiar with, current regulations and standards including applicable sections of NFPA 70 (NEC) and NFPA 70E.
2. Ensure that the written departmental electrical safety program is kept current and covers the equipment and procedures used by the workers in the department.
3. Ensure that only qualified employees are allowed to work on or near electrical equipment as outlined in this Policy Procedure Memorandum and NFPA 70E.
4. Ensure that proper Lock Out/Tag Out procedures are established, utilized and enforced. (Refer to PPM # CW-O-070 – Lock Out/Tag Out Policy)
5. In the event that it is not possible to complete Lock Out/Tag Out procedures and it is necessary to complete work on an energized circuit, then it is the Department/Division head's or their designee's responsibility to ensure that the Energized Electrical Work Permit is completed and approved prior to work commencing. (Refer to PBC forms-Energized Electrical Work Permit)
6. Completed permits must be retained for a period of no less than thirty- six (36) months and be made available at the request of Risk Management.
7. Ensure that all applicable employees are provided with, and utilize, appropriate PPE, proper electrical equipment, approved testing equipment and proper Lock Out/Tag Out materials (i.e. locks, key, tags and ties, multiple lock hasps, etc.) before maintenance and/or repairs are performed.
8. Ensure that immediate action shall be taken if inadequacies or deviations in the electrical safety program are reported by the Supervisors.
9. Ensure that all employees attend documented training and re-training approved by ES/LC prior to being approved for specific work tasks and designation as a qualified worker. Training for qualified workers shall include, but is not limited to:
 - a. Electrical hazards in the workplace, the effects of these hazards on body tissues, determining the degree of hazard and how to avoid exposure to each hazard;

- b. Proper procedures for working on or around the actual and specific electrical equipment found in the workplace, including a review of all manufacturer's instructions;
- c. Selection, use and inspection of all PPE (including **Fire Retardant** clothing requirements) along with proper use and operation of meters and test equipment, specialized tools, and insulation equipment and materials;
- d. How to perform and understand a hazard/risk analysis; determine limited, restricted, flash protection and prohibited approach boundaries; and how these boundaries are related to electrical safety and protection from electrical hazards;
- e. Utilization and understanding of equipment specific to Lock Out/Tag Out equipment, procedures, and countywide PPM's;
- f. Emergency procedures and methods for releasing a person in contact with energized electrical conductor along with applicable first aid and CPR training;
- g. Ensure that all bid documents for contracted services to perform maintenance or repair on machines or equipment contain verbiage that requires outside contractors to abide by the laws stated in the "AUTHORITY" section of this policy,
- h. Prior to commencing any work, a pre-job work plan (e.g. Hazard/Risk analysis) must be completed. This analysis will determine the limited, restricted, flash protection, prohibited approach boundaries, and provide an understanding of how these boundaries are related to electrical safety and protection from electrical hazards. This pre-job work plan can be completed either by:
 - Utilizing the recommended boundary as determined by a formal Arc Flash Hazard analysis (see Definition) OR
 - Establish a minimum boundary distance of 6 feet in all directions **and** select the appropriate PPE/Tools /Test equipment as detailed NFPA 70E - Article 130.

B. Supervisors shall:

1. Ensure that all employees comply with the procedures set forth in this PPM, as well as the specific methods outlined in the written departmental electrical safety program, which must be developed by the department management and supervisors to cover the type of work and equipment in use. All supervisors and employees should be trained on, and familiar with, current regulations and standards including applicable sections of NFPA 70 (National Electric Code, NEC) and NFPA 70E.

2. Ensure that only qualified employees are allowed to work on or near electrical equipment as outlined in this policy and NFPA 70E.
3. Ensure that proper Lock Out / Tag Out procedures are established, utilized and enforced. (Refer to – PPM # CW-0-070 – Lock Out / Tag Out Policy).
4. In the event that it is not possible to complete Lock Out/Tag Out procedures and it is necessary to complete work on an energized circuit, then it is the Supervisor or their designee's responsibility to ensure that the Energized Electrical Work Permit is completed and approved prior to work commencing. (Refer to PBC forms- Energized Electrical Work Permit)
5. Completed permits must be retained for a period no less than 36 months and be made available upon request from Risk Management.
6. It is the Supervisor's responsibility to review on an annual basis the Department Electrical Safety Program. Immediately inform Department or Division heads of any inadequacies or deviations from the written Departmental Electrical Safety directives.
7. Ensure that all applicable employees are provided with, and utilize, appropriate PPE – personal protective equipment, proper electrical equipment, approved testing equipment, and proper Lock Out/Tag Out materials (i.e. locks, key, tags and ties, multiple lock hasps, etc.,) before maintenance and/or repairs are performed.
8. Ensure that immediate action shall be taken if the workers report inadequacies or deviations in the electrical safety program or procedures.
9. Ensure that all employees attend documented training and re-training approved by Palm Beach County-ES/LC, prior to being approved for specific work tasks and designation as a qualified worker. Training for qualified workers shall include (but not necessarily limited to)

Electrical hazards in the workplace, the effects of these hazards on body tissues, determining the degree of hazard and how to avoid exposure to each hazard,

Proper procedures for working on or around the actual and specific electrical equipment found in the workplace including a review of all manufacturer's instructions,

Selection, use and inspection of all PPE (including FR clothing requirements) along with proper use & operation of meters and test equipment, specialized tools, and insulation equipment and materials,

How to perform and understand a hazard/risk analysis, determine limited, restricted, flash protection and prohibited approach boundaries and how these boundaries are related to electrical safety and protection from electrical hazards,

Utilization and understanding of equipment-specific Lock Out / Tag Out equipment and procedures and county PPM, and

Emergency procedures and methods for releasing a person in contact with an energized electrical conductor along with applicable first aid and CPR training.

10. Prior to commencing any work, a pre-job work plan (e.g. Hazard / Risk analysis) must be completed. This analysis will determine the limited, restricted, flash protection, prohibited approach boundaries, and understand how these boundaries are related to electrical safety and protection from electrical hazards. This pre-job work plan can be completed either by:
 - Utilizing the recommended boundary, as determined by a formal Arc Flash Hazard analysis (see Definition) OR

Establish a minimum boundary distance of 6 feet in all directions **and** select the appropriate PPE/Tools /Test equipment as detailed NFPA 70E - Article 130.11. Supervisor or their designee responsibility to complete a monthly inspection for Lock Out/Tag Out materials, testing equipment as well as assigned PPE to ensure that all are in proper working order.

C. Employees shall:

1. Comply with the procedures set forth in this PPM as well as the specific methods outlined in the written departmental electrical safety program, which must be developed by the department management and supervisors to cover the type of work and equipment in use. All employees shall be trained on, and familiar with, current regulations and standards including applicable sections of NFPA 70 NEC and NFPA 70E.
2. Ensure that only qualified employees are allowed to work on or near electrical equipment as outlined in this PPM and NFPA 70E.
3. Notify supervision of any conditions or circumstances that could impair their performance or alertness while working - including but not limited to illness, fatigue, medications used, emotional distress, or other reasons.

4. Notify supervision if for any reason the worker does not feel qualified to perform an assigned task – i.e. not trained on, familiar with, and knowledgeable about the construction and operation of the equipment to be worked on.
5. Ensure that proper Lock Out / Tag Out procedures are established, utilized, and enforced. (Refer to – PPM # CW-O-070 – Lock Out / Tag Out Policy)
6. Ensure that proper procedures are followed when working on energized electrical circuits and obtain approval & sign off on the required permit forms (refer to PBC Forms -Energized Electrical Work Permit)
7. Immediately inform Department/Division Heads/Supervisors of any inadequacies or deviations from the written departmental electrical safety program.
8. Safeguard the work area in order to protect co-workers and/or the public (including but not limited to – physical separation/segregation, insulation, barricades, etc.). Electrical equipment areas shall be secured to prevent unauthorized access – (doors, gates, access panels, barricades, etc.). Immediately inform Department/Division Heads/Supervisors of any damaged equipment noted in the work area.
9. Understand the function and importance of all applicable PPE, proper electrical equipment, approved testing equipment, and proper Lock Out/Tag Out materials (e.g. locks, key, tags and ties, multiple lock hasps, etc.) before maintenance and/or repairs are performed.
10. Attend documented training and re-training approved by Palm Beach County-ES/LC, prior to being approved for specific work tasks and designation as a qualified worker. Training for qualified workers should include (but not necessarily limited to):
 - Electrical hazards in the workplace, the effects of these hazards on body tissues, determining the degree of hazard and how to avoid exposure to each hazard,
 - Proper procedures for working on or around the actual and specific electrical equipment found in the workplace including a review of all manufacturer's instructions,
 - Selection, use, and inspection of all PPE (including FR clothing requirements) along with proper use & operation of meters and test equipment, specialized tools, and insulation equipment and materials,
 - How to perform and understand a hazard/risk analysis, determine limited, restricted, flash protection, and prohibited approach boundaries and how these boundaries are related to electrical safety and protection from electrical hazards,

- Utilization and understanding of equipment-specific Lock Out / Tag Out equipment and procedures and county PPM's, and
 - Emergency procedures and methods for releasing a person in contact with an energized electrical conductor along with applicable first aid and CPR training.
11. Understand the importance of, and results of, a hazard/risk analysis in order to determine limited, restricted, flash protection and prohibited approach boundaries and understand how these boundaries are related to electrical safety and protection from electrical hazards. If the formal documented analysis has not been completed, a minimum of six (6) feet shall be established as the prohibited approach boundary. A qualified professional may modify this boundary after an evaluation and analysis of the specific equipment, circuit, system, or installation.
 12. Inform the supervisor if unfamiliar with, or uncertain about, any procedures, equipment, or circuits and systems to ensure they are fully qualified for the nature and type of work to be performed.
 13. Notify supervisor if any safety hazards are detected and/or any contractor violations are noted. Stop work in progress and notify supervisor immediately if any malfunctioning, defective, or damaged equipment is found.

D. Employee Safety / Loss Control shall:

1. Coordinate and provide training and re-training on electrical safe work practices & procedures to include 70E initial training and 70E refresher training every (3) years thereafter
2. Assist and consult with departments on the development and maintenance of their respective written departmental electrical safety & energy control procedures.
3. Assist in the selection and approval of all applicable PPE, proper electrical equipment, approved testing equipment, and proper Lock Out/Tag Out materials.
4. Provide Lock Out /Tag Out training in coordination with Electrical Safety Training on an annual basis.
5. Review written Department's Electrical Safety Programs in coordination with updates to PPM's CW-O-080 and CW-O-070.

PROCEDURE

A. Electrical Safety Program:

1. **General Requirements:** Each department that works on or near electrical equipment shall implement a written electrical safety program that directs activity appropriate for the voltage, energy level, and circuit conditions applicable in their respective work areas. The departmental electrical safety program should (at a minimum) include :
 - a. Electrical safety program principles, controls, and procedures along with safety awareness and self-discipline,
 - b. Hazard/risk evaluation procedures, and
 - c. Pre-job planning and briefing procedures for each job.

2. **Working On or Near Electrical Conductors or Circuit Parts:**
 - a. Only qualified persons shall be permitted to work on, or near, live electrical circuit parts.
 - b. Live parts/circuits shall be put into an electrically safe work condition (following lock out / tag out procedures) prior to work on or near the equipment.
 - c. **Work on live electrical circuits shall only be permitted if de-energizing could result in an increased hazard (risking personal injury or death) or would result in the shutdown of a critical continuous process.** Examples of increased hazards due to deactivation would include shutdown of medical life support systems, electrical controls/locks/alarms at mental health or jail facilities, interruption of aviation communications and /or avionics, disabling traffic control devices, interruption of fire control equipment, etc.). In some cases, the work may need to be performed after hours or on weekends to minimize disruption of routine activities.
 - d. Energized parts that operate at less than 50 volts shall not be required to be de-energized if there is no increased exposure to electrical burns or electric arcs.
 - e. If live parts (operating at 50 volts or more) are not placed in an electrically safe work condition an electrical hazard analysis shall be conducted. The electrical hazard analysis shall cover appropriate safety-related work practices before any person approaches exposed live parts within the limited approach boundary by using both shock hazard analysis and flash hazard analysis.

- f. Upon completing the electrical hazard analysis, the justification and necessary procedures and equipment to perform the job safely must be put in writing, utilizing the PBC Energized Electrical Work Permit with written approval (signature authorization) by the applicable supervisor(s) / manager(s).

3. Use of Test Instruments and Equipment:

- a. Testing equipment, meters, and accessories shall be rated for circuits and equipment to which they will be connected and designed for the work environment to which they will be exposed.
- b. Only meters and test equipment approved and issued by the County shall be used. Testing equipment and meters shall be rated CAT III or higher.
- c. All workers utilizing meters or test equipment shall be trained in their use and maintenance prior to authorization to use the equipment.
- d. All testing equipment, meters, and accessories shall be visually inspected for external defects and damage prior to each use. If there is a defect or damage that might expose an employee to injury, the defective item shall be removed from service.

4. Work On or Near Uninsulated Overhead Lines:

- a. Where work is performed in locations containing uninsulated energized overhead lines, precautions shall be taken to prevent persons from contacting such lines directly with any unguarded parts of their body.
- b. Where work to be performed is such that contact with uninsulated energized overhead lines is possible, the lines shall be de-energized and visibly grounded at the point of work or suitably guarded.
- c. When working outdoors with overhead lines special consideration shall be given to environmental factors such as wind gusts, rain, and assorted weather conditions that may affect the safety of employees while working near energized overhead lines.
- d. When working near live overhead cables or electrical lines contact must be made with the owner of the lines prior to work commencing to determine the status of the lines and/or cables. If lines/cables are active, a request for de-energization of the lines or cables on a temporary basis should be required and documented on the work order.

5. Additional Precautions for Personnel Activities:

- a. Employees shall be instructed to be alert at all times and not to work on energized electrical circuits if impaired due to illness, medications, fatigue, or other reasons.
- b. Employees shall be instructed not to reach blindly into areas that might contain exposed live parts or circuits.
- c. Employees shall be instructed not to enter into areas that might contain exposed live parts or circuits unless adequate illumination and an unobstructed view of the work area is provided.
- d. Conductive articles of clothing, jewelry, or miscellaneous items (such as rings, watches, belt buckles, key chains, metal headgear or metal frame glasses, etc.) shall not be worn.
- e. Conductive materials, tools, and equipment shall be handled, stored, and used in a manner that prevents accidental contact with live parts/circuits.
- f. When working in a confined or enclosed space, employees shall use protective shields, barriers, or approved insulating materials as necessary to avoid inadvertent contact with live parts. Doors, hatches, access panels, and similar items shall be secured to prevent their swinging into an employee and /or causing contact with live electrical conductors.

6. PPE – Personal Protective Equipment:

- a. Employees working in areas where electrical hazards are present shall be provided with and shall use, appropriate PPE approved by the county which is designed and constructed for the specific hazards anticipated. This shall include, but not be limited to :
 - Head - nonconductive hardhat with class – E rating,
 - A fire retardant Balaclava for protection against Arc Flash
 - Face - arc rated face protection shield,
 - Eyes - nonconductive Safety Glasses or Goggles,
 - Hearing Protection – ear canal inserts,
 - Body - FR fire resistive clothing - long sleeve shirt and long pants (ATPV rating of eight or higher – meeting the requirements of Hazard Risk Category – 2) along with nonconductive / non-melting underwear fabrics.

- Hand / Arm – approved insulated gloves and arm protection rated for applicable voltage exposure, and
- Foot–approved safety boots/shoes rated – EH-(Electrical Hazard)

NOTE: The above-listed PPE items are considered minimum protection for routine electrical tasks on circuits less than 1,000 volts. Refer to NFPA 70E Article 130 – Working On or Near Live Parts for additional information and for specific PPE requirements.

7. Other Protective Equipment:

- a. Employees shall be provided with and use insulated tools and/or handling equipment approved by the county and rated for the appropriate voltage levels.
- b. Alerting Techniques - Safety signs, symbols, or tags shall be used to warn employees about electrical hazards.
- c. Nonconductive Barricades shall be used in conjunction with safety signs to limit access to work areas containing live parts.
- d. Approved rubber insulating and plastic guard equipment, rated for the appropriate voltage levels shall be used to protect from accidental contact with live parts.
- e. The following schedule for re-certification or replacement of insulated equipment must be followed: Gloves - every 6 months, Blankets, Boots, Line Hose, Hoods, Sleeves, Hot Sticks, and Mats – Annually. Each Department is responsible for the re-certification/or replacement of all insulated equipment in accordance with the above schedule.

8. Maintenance Requirements:

- a. A single line diagram, where provided, for the electrical system shall be available and maintained in an up-to-date condition to provide reliable information on the circuits / system.
- b. All qualified workers must have the ability to read and understand single line diagrams of all systems they work on.
- c. All working spaces and clearances required in the NFPA- NEC shall be maintained. Access to working space and escape passages shall be kept clear and unobstructed.
- d. Adequate and appropriate illumination shall be provided for electrical work areas.

- e. Circuit or voltage identification, warning signs, identification of components, and safety related instructions shall be securely affixed and maintained in updated and legible condition.
- f. Electrical service rooms, substations, panel boards and similar locations shall be physically protected from unauthorized access (with doors, fences /gates, enclosures, and/or locked panels or similar protection) to control exposure to live circuits. These enclosures shall be maintained in good condition and kept secured when not in use.
- g. Approved warning signs shall be conspicuously posted at the entrances to rooms and other secured locations that contain live electrical circuits over 50 volts. The signs shall indicate – WARNING – ELECTRICAL HAZARD – DO NOT ENTER – ONLY QUALIFIED WORKERS ALLOWED TO ENTER THIS AREA.
- h. Ground fault circuit protection shall be provided to protect workers using temporary wiring/flexible cords and equipment powered by these devices.
- i. Flexible cords and cables and their associated fittings (such as extension cords and temporary wiring) shall be suitable for the conditions of use and location. Flexible cords and cables should only be used in temporary and/or portable applications. Flexible cords and cables shall not be used as a substitute for fixed wiring, shall not be run through holes in walls, doorways, windows, above ceilings, below floors, or in other concealed areas.

9. Outside Personnel (i.e. Contractors, etc.) :

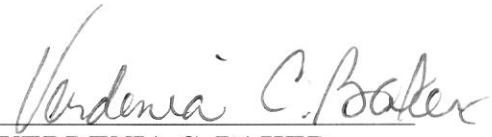
- a. Whenever outside servicing personnel are to be engaged in servicing or maintenance activities on machines or equipment located in County owned facilities, the law under **Authority** must be complied with.
- b. The on-site employer (Palm Beach County) and the outside employer(s) – (Contractors or Service Companies) shall inform each other of existing hazards, PPE/ clothing requirements, safe work practice procedures, and emergency/evacuation procedures applicable to the work to be performed. This coordination shall include a meeting and documentation.

10. Installation Safety Requirements:

- a. The workplace design and layout shall conform to the NEC – National Electric Code standards. Only listed, labeled, and approved equipment shall be installed and used in accordance with manufacturer's instructions.

11. Records:

- a. Records of periodic work place inspections shall be maintained in the department and each inspector's own file.
- b. Documentation of employee training, classes attended, any on-the-job training received and work practices evaluation reports shall be maintained in the TED (Training and Employee Development) or LMS (Learning Management System).
- c. Copies of Energized Electrical Work Permits must be maintained by the Department.
- d. Records of departmental energy control procedures for each machine that requires energy control and a copy of the written departmental electrical safety program will be maintained, and updated as needed, by each department and reviewed by ES/LC during the annual Safety Inspections.
- e. Each department shall maintain equipment history and records of all equipment testing, certification, and calibration.


VERDENIA C. BAKER
COUNTY ADMINISTRATOR

Supersession History

PPM#CW-O-080, effective 9/7/2011

PPM#CW-O-080, effective 7/15/2016

Attachment A: Definitions:

Affected Employee - An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under Lock Out or Tag Out, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Arc Flash Hazard Analysis- A 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 level of PPE required.

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 cal/cm².

Authorized Employee - Any County employee who locks or implements a tagout system or procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment utilizing the specified procedure document. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or servicing on a machine or equipment which must be locked, or when the use of a tagout system is being implemented.

Balaclava (Sock Hood) – An arc-rated hood that protects the neck and head and is worn in conjunction with Fire Resistant – FR Clothing.

Barricade - A physical obstruction (such as tape, cones, sawhorses, etc.) intended to provide a warning about and to limit access to a hazardous area.

Barrier - A physical obstruction that is intended to prevent contact with equipment or live parts or to prevent unauthorized access to a work area.

Dead Front - Electrical equipment without live parts exposed to a person on the operating side of the equipment.

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.

Device - A unit of an electrical system that is intended to carry but not utilize electric energy.

Disconnecting Means - A device or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply

Electrically Safe Work Condition - A 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.

Energized Electrical Work Permit – Is a written permit to work on energized equipment used by an electrical worker when he/she is doing tasks that normally could be done on de-energized equipment. PBC Energized Electrical Work Permit is located on the County-wide forms – Risk Management - Energized Electrical Work Permit.

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, or insulated.

Flame-Resistant (FR) - Term for approved clothing characteristics (also known as flame retardant) whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source.

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

Flash Protection Boundary - An approach limit at a distance from exposed live parts within which a person could receive a second-degree burn if an electrical arc flash were to occur.

Flash Suit - A complete FR clothing and equipment system (in addition to regular FR shirts & pants) that covers the entire body, except for the hands and feet. This includes upper and lower body protection and a beekeeper-type hood fitted with a face shield.

Lock Out/Tag Out - the placement of a lock and/or tag on an energy isolating device(s) in such a manner as to render the equipment inoperable and the energy source intangible.

Lock Out Device - a device(s) that utilizes a positive means such as a lock (key type) to hold an energy-isolating device in the safe position and to prevent the energizing of a machine or equipment.

Motor Control Center - An assembly of one or more enclosed sections having a common power bus and principally containing motor control units.

Prohibited Approach Boundary - An approach limit at a distance from an exposed live part within which work is considered the same as making contact with the live part.

Qualified Person - One who has been trained in, possesses the skills, is familiar with, and knowledgeable in the construction and operation of the specific electrical equipment and installations in the workplace and has received approved and documented safety training on the hazards involved. For a person to be considered qualified they must be physically and mentally capable of completing the work task and be able to understand all associated electrical hazards including selection and use of test equipment, completion of a hazard/risk analysis, reading and understanding wiring diagrams, drawings or line diagrams pertinent to the specific job task. An experienced person can be considered qualified with respect to certain equipment, procedures, and methods but still be unqualified for other tasks pending training, familiarization, and demonstration of applicable knowledge.

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

Tag Out Device - A prominent warning device(s), such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device where the equipment being controlled may not be operated until the tagout device is removed.

Working on Live Parts - Coming in contact with live parts with the hands, feet, or other body parts, with tools, equipment, materials, probes, test equipment, regardless of the PPE (personal protection equipment) a person is wearing.