



# ABINGTON TOWNSHIP FIRE DEPARTMENT

OG – 400-114

## Electric Wires and Electrical Equipment Incident Procedures

### 1.0 PURPOSE

To provide a ready source of information and guidelines for emergency scene operations involving electric wires or other electrical equipment and facilities. The purpose of this Recommended Practice is to provide standardized training information and to provide information in order to develop Operational Guidelines.

#### 1.1 Definitions

An electrical emergency is one that involves an incident or fire in any electrical equipment or facility, with an immediate threat to life or property due to a fire, damage, or malfunction.

### 2.0 RESPONSIBILITY

The responsibility to ensure that the above actions are taken in an appropriate manner are defined as indicated below:

- 2.1 Company Members (CM)
- 2.2 Company Officers (CO)
- 2.3 Document Control Administrator (DC)

### 3.0 PROCEDURE

#### 3.1 Familiarization

- 3.1.1** All fire companies should become familiar with power plants, substations and electrical installations in their local districts. Tours of these facilities should be considered and requested through the appropriate electric utility. Among the items which should be considered during the tour are:
  - 3.1.1.1** Available water supply; i.e., standpipes, reservoirs, fire pumps, & hydrants.
  - 3.1.1.2** Location and types of firefighting equipment available.
  - 3.1.1.3** Location and sizes of siamese and other connections to any fixed water spray systems.
  - 3.1.1.4** Type of threads used and whether adapters are necessary.
  - 3.1.1.5** Nature, extent and operating procedures for fixed protection systems.
  - 3.1.1.6** Any prohibition on the use of water or other extinguishing agents.
  - 3.1.1.7** Location and type of each special hazard within the facility's property line.
  - 3.1.1.8** Location and voltage rating of each item of major electrical equipment.

- 3.1.1.9 Nature and extent of ventilation in each building. This information should include the type of ventilation, mechanical or natural, and related emergency operating procedures governing smoke ventilation.
- 3.1.1.10 Location, type and quantities of any hazardous materials present.
- 3.1.1.11 Location and type of any confined spaces within the facility's property line.
- 3.1.1.12 Phone numbers of emergency personnel.

NOTE: NO FIRE DEPARTMENT PERSONNEL SHOULD ENTER ENERGIZED ELECTRICAL EQUIPMENT OR FACILITIES WITHOUT PERMISSION/ASSISTANCE FROM QUALIFIED ELECTRIC COMPANY PERSONNEL OR THE OWNER/OPERATOR.

### 3.2. Communications

- 3.2.1. Communications will be maintained at all times between the Communications Center, the operating forces on the scene and the representative of the agency whose facility is involved.

### 3.3. Precautions

- 3.3.1. All members must use extreme caution during all phases of any emergency operation involving electrical equipment. Minimum safe approach distance from exposed energized wires or equipment for the non-electrically qualified individual is ten feet for voltages less than 50,000vac IAW OSHA. Maintain two spans away from two utility poles on either side of the break in the electrical wires.
- 3.3.2. For maximum safety on the emergency scene, **ALL ELECTRICAL WIRES OR EQUIPMENT MUST BE REGARDED AS ENERGIZED AND DANGEROUS** until they are de-energized by qualified personnel. Victims in contact with these hazards must also be regarded as energized, and they must not be physically contacted by firefighters. The safest and most preferable manner in which electrical emergencies can be handled is to have the flow of electricity shut off to the contacting medium by **qualified personnel** before attempting to rescue the victim.
- 3.3.3. Members should be aware that firefighting streams of water could carry electrical current back to the nozzle and cause injury or death. The amount of current reaching the nozzle depends on the following variables:
  - 3.3.3.1. the voltage present
  - 3.3.3.2. the distance from the nozzle to the energized electrical source
  - 3.3.3.3. whether the stream is a solid stream or a fog pattern
  - 3.3.3.4. type of stream; e.g., ¾" tip, automatic and/or fog nozzles, etc.
  - 3.3.3.5. conductivity of the water
  - 3.3.3.6. nozzle pressure
  - 3.3.3.7. wind
  - 3.3.3.8. humidity
  - 3.3.3.9. standing on wet ground (pooling, puddles, runoff)
  - 3.3.3.10. sweat
  - 3.3.3.11. opening other discharges on the apparatus
  - 3.3.3.12. hose material
- 3.3.4. Carbon dioxide (CO<sub>2</sub>) is usually the preferred extinguishing agent for electrical fires. Portable CO<sub>2</sub> and dry chemical extinguishers may be present at some facilities. **CO<sub>2</sub> has an effective range**

**of four to eight feet and will violate the minimum safe approach distance of ten feet for voltages up to 50,000 volts. Electric equipment must be de-energized prior to entering the ten foot zone.**

- 3.3.5. Until confirmed otherwise, all transformers should be considered potentially contaminated by polychlorinated biphenyls (PCB's). Members should avoid contact with the transformer oil, stay out of the smoke plume and use full personal protective clothing including SCBA's.
- 3.3.6. Firefighting operations in buildings may require large volumes of water with resultant runoff. The Incident Commander should ensure that below-grade electrical areas (e.g., transformer rooms, vaults, etc.) are not threatened by this water runoff. Appropriate measures may include keeping drains clear, diverting water runoff, and using pumps.

### 3.4. GUIDELINES FOR SPECIFIC INCIDENTS

#### 3.4.1. Electrical Emergencies

- 3.4.1.1. Treat all emergencies as if all electrical equipment is energized and carrying high voltages. The "Ten Foot Circle of Safety" is the minimum required distance you must have when working near power lines of fifty-thousand volts or less. **THE SAFETY OF ALL PERSONNEL IS PARAMOUNT.**
- 3.4.1.2. Safeguard the public by keeping them a safe distance from any electrical incident.
- 3.4.1.3. Notify Emergency Dispatch Services to have PECO respond in order for them to de-energize the affected equipment. See Section E.12 PECO Response Requests for guidelines for communicating the priority of the emergency to PECO.
- 3.4.1.4. Establish a crowd/traffic control perimeter, when necessary.
- 3.4.1.5. Evaluate and address exposure and evacuation problems.
- 3.4.1.6. Firefighters should utilize all protective equipment, including SCBA, and locate apparatus upwind, if possible. Large amounts of smoke may be present at electrical incidents.
- 3.4.1.7. Attempt to identify the owner or operating agency and have them send an informed representative. Do not enter high voltage areas without permission or before consulting with a representative.
- 3.4.1.8. If extinguishing agents must be used, give first consideration to non-conducting agents such as dry chemical, CO<sub>2</sub>, etc.

#### 3.4.2. Wires

- 3.4.2.1. Treat fallen wires, regardless of the type, as energized and carrying high voltages.
- 3.4.2.2. Consider securing the area where wires are down until relieved by police, fire police or the responsible agency.
- 3.4.2.3. Special precautions must be taken if downed wires are in contact with metal objects, such as fences, automobiles, etc., as the entire length of the object may be energized. (Normally non-conductive objects such as trees, wooden poles, wooden fences, etc., must be treated as energized when wet.) Ground surfaces can also be energized (ground gradient).
- 3.4.2.4. **NEVER ATTEMPT TO CUT WIRES.** Any situation that warrants the cutting of wires requires the services of PECO or the owner/operator representative.
- 3.4.2.5. Both ends of a broken wire can be energized due to alternate feeds, so precautions must be taken at both ends of any fallen wires.

#### **3.4.2.6. FIREFIGHTERS SHOULD NOT MOVE FALLEN WIRES**

- 3.4.2.6.1.** When downed wires are encountered, a danger zone surrounding the entire incident will be created. This zone will be of such a size and shape that the perimeter can not be reached by any downed wire.
- 3.4.2.6.2.** Never park an apparatus under wires which are suspected of being damaged or could be damaged by direct fire/falling walls.
- 3.4.2.6.3.** When dispatched for wires, always position apparatus a minimum of (2) spans away from the utility poles on either side of the break in the electrical wires. (A span will equal the distance between the two adjacent utility poles.)

#### **3.4.3. Apparatus/Equipment and Wires**

- 3.4.3.1.** Prior to and while raising or lowering portable ladders, and/or aerial devices of any kind (Squirt, snorkel ladder tower, etc.), members **MUST ESTABLISH AND MAINTAIN COMPLETE AWARENESS OF THE PRESENCE, LOCATION AND CONDITION OF OVERHEAD WIRES. IT IS STRONGLY RECOMMENDED USING A "SPOTTER"**.
- 3.4.3.2.** All firefighters must be aware that operators of any aerial apparatus must never lower standards or outriggers onto metal surfaces, such as manholes, trolley tracks, etc. These metal surfaces and the apparatus could become energized, if the apparatus contacts any overhead wire.
- 3.4.3.3.** The contact of standards or outriggers on concrete, asphalt, etc., does not form a good path to ground for electricity. Any person standing on the ground that touches an apparatus that has come in contact with an overhead wire will provide a more direct path for the electricity, resulting in severe shock or electrocution.
- 3.4.3.4.** Always operate aerial equipment while standing on the operating platform. If an apparatus comes in contact with an energized wire, the safest course of action is to remain in/on the vehicle until the appropriate electrical utility can shut down the power. If this is not possible the member(s) may:
  - 3.4.3.4.1.** Remain in place and drive the apparatus out from under the wire. Ensure wire is not caught on or dragged by the apparatus as it is moved.
  - 3.4.3.4.2.** Dismount the apparatus by **jumping off**, not merely stepping off. When jumping, it is important that the member keep his/her feet together, hands clear, and jump well away from the apparatus. Either hop away or shuffle with both feet together. **At no time should the member touch the apparatus and the ground simultaneously.**
  - 3.4.3.4.3.** If the energized wire is in contact with an elevated aerial device (e.g., boom, ladders, etc.), move it from contact with the energized wire.

#### **3.4.4. Building/Dwelling Fires**

- 3.4.4.1.** During a fireground operation, when it has been determined that the electrical power to a structure or any part of it is to be shut down, first consideration should be to disengage circuit breakers, master switches or fuses. Companies should be aware that there may be more than one electrical source in a building. In addition, alternative energy sources may service a building (battery back-up systems, back-up generator, etc.) and must be

considered. Many of these systems automatically activate when the electrical power to the structure is interrupted.

**3.4.4.2.** During a fireground operation, the Incident Commander or their designee shall contact EDS to have PECO dispatched to the incident location to secure both electric and gas service. See Section E.12 PECO Response Requests for guidelines for communicating the priority of the emergency to PECO.

**3.4.4.3.** When a thorough attempt to shut down the electrical service at the fuse/circuit breaker panel fails, consideration must be given to the possibility of an illegal service, and the appropriate electrical utility must be notified.

**3.4.4.4. Firefighters SHOULD NOT ATTEMPT to remove electric meters or cut the taps. The removal of an electric meter MAY NOT SHUT DOWN the electric service and may create additional hazards, possibly causing severe personal injury.**

**3.4.4.5.** At the appropriate time, the Incident Commander (or his/her designate) should explain to the building owner/occupant, etc., the actions taken and the status of the electrical system; i.e., circuits shut down, etc., and the reasons for such actions.

**3.4.4.6.** Whenever flammable vapors MAY be present, avoid operating any electric switch within the area, including a light switch. Even a small spark can cause an explosion.

**3.4.4.7.** When advancing through a building or any enclosure where visibility is poor, proceed, if possible, with arm(s) outstretched and the palm(s) of the hands turned toward the face. If contact is made with an energized object and the muscles contract, the member will not grab hold of the energized object.

### **3.4.5. Underground Installation Fires**

**3.4.5.1.** Underground electrical vaults/manholes **SHALL NOT** be entered by fire personnel until an authorized agency representative arrives on the scene, evaluates the particular hazard involved, and shuts down the power.

**3.4.5.2.** All protective clothing including S.C.B.A. must be used because of the possibility of a toxic atmosphere. Before entering any underground installation, the atmosphere is to be checked with a combustible gas monitor, then ventilated. Such installations may have to be treated as a “confined space incident.”

**3.4.5.3. NEVER** park an apparatus over a manhole cover. Leave manhole covers as found. Any introduction of air into an underground facility or the rapid release of gas into the atmosphere, may cause an explosion. Establish a secure area around manhole to include adjacent manholes.

**3.4.5.4.** Never introduce water into a manhole, unless specifically instructed to do so by responsible agency personnel.

**3.4.5.5.** Fire personnel should ensure that water, from hydrant flushing and other sources, is not introduced into a manhole.

**3.4.5.6.** Evacuate adjacent properties as required.

**3.4.5.7.** Check adjacent properties for vapors, smoke, or carbon monoxide entering through duct lines.

**3.4.5.8.** Shut down the electrical and gas supplies in adjacent properties, as required.

**3.4.5.9.** Unless human life is at stake or other property is in jeopardy, there is no great urgency to proceed with extinguishing the fire until a representative from the appropriate utility has

evaluated the situation. The maximum damage to the contents in the manhole/underground installation is frequently caused by the initial explosion or fire.

### **3.4.6. Electric Power Plants and Substations**

- 3.4.6.1.** Electric substations may, or may not, be staffed. In the event of a fire at an unattended station, the company will prepare for service with the appropriate equipment, standby, and await the arrival of a representative from the appropriate utility. Do not enter substation without permission.
- 3.4.6.2.** Companies should be prepared to fight a Class "B" fire since oil is frequently used to cool transformers, circuit breakers and capacitors. Most oil in substations has a flash point of approximately 300 degrees F.
- 3.4.6.3.** After a representative from the appropriate responsible agency de-energizes the equipment and allows entry, the facility may be entered to extinguish the fire. Companies should use the minimum number of personnel and only the equipment necessary in order to reduce the danger.
- 3.4.6.4.** Due to the possibility of porcelain insulators exploding and sending fragments flying and the presence of toxic gases all protective clothing, including S.C.B.A., is mandatory at outdoor facility operations.
- 3.4.6.5.** Hydrogen gas, a lighter-than-air and highly flammable gas found and used in power plants and is commonly used in large quantities for equipment cooling. It is important to realize that a hydrogen gas fire should not be extinguished until the supply is shut off or exhausted.
- 3.4.6.6.** Protect the exposures outside of the substation by either evacuation or sheltering in place. Unless serious operational difficulties are present, do not shut down an activated deluge sprinkler system before conferring with a representative from the appropriate utility.
- 3.4.6.7.** If water is used, apply only a fog pattern to an oil or electrical fire in the power plant or substation area. A fog pattern may cool the oil until it can no longer reignite.
- 3.4.6.8.** Never use a solid stream of water because of its possible conductivity and its limited effectiveness on oil fires.
- 3.4.6.9.** Never use water (fog or solid stream) on metal cabinets or adjoining ones that may contain electrical equipment unless it is confirmed that the equipment is de-energized.
- 3.4.6.10.** Use caution; explosions are possible from the combustible oil vapors or from overheated oil-filled equipment.
- 3.4.6.11.** Let natural ventilation cool the equipment, unless water is requested by a representative from the appropriate utility.
- 3.4.6.12.** Steel or aluminum structures may collapse from the intense heat of the fire.

### **3.4.7. Transformer Rooms and Vaults**

- 3.4.7.1.** Transformer rooms are usually found in vaults inside buildings; however, they may be outdoors under grills and sidewalks. Their purpose is to raise or lower electrical voltages in buildings.
- 3.4.7.2.** Transformer rooms may contain energized water (from activated sprinkler/frozen pipes), when units arrive.

- 3.4.7.3. Transformers may be cooled by insulating fluids. Some of these may contain PCB's. PCBs pose a health risk. They are known carcinogens and can enter the body through ingestion, inhalation or absorption.
- 3.4.7.4. Vaults containing PCBs are required to be identified with markings reflecting their presence. However, members should be aware that vaults and transformers containing PCBs may exist that have not been properly marked.
- 3.4.7.5. Companies should familiarize themselves with PCB locations during routine inspections and preplanning personnel should be aware that additional transformers containing PCBs, that have not been reported, may exist.
- 3.4.7.6. No attempt should be made to extinguish a fire in a transformer room until the responsible agency de-energizes the equipment and permits access and extinguishment.
- 3.4.7.7. Once the representative de-energizes the equipment, fire companies should follow standard operating procedures.
- 3.4.7.8. Large volumes of smoke and toxic gases may be generated in this type of fire; therefore, ventilation must be done in such a way as to minimize the exposure to civilians and firefighters in the area.
- 3.4.7.9. Diking of run-off water should be considered to prevent contaminated run-off entering the sewer system. If PCB oil or run-off enters the sewer system, request the Hazmat Team.
- 3.4.7.10. All equipment that is damaged, or suspected of being damaged, by fire/heat will be replaced by the appropriate utility. This type of equipment is considered non-salvageable.

#### 3.4.8. Utility Poles

- 3.4.8.1. Members should avoid all physical contact with utility poles on which electrical equipment, such as wires and transformers, has been adversely affected. There is a possibility that the pole could become a conductor of electrical current. Poles with cracks filled with moisture and dirt can readily conduct electricity. Any physical contact with these poles can result in serious injury or death.
- 3.4.8.2. Transformers have the potential to explode violently. Safe distances from transformers must be maintained for personnel and apparatus.
- 3.4.8.3. The dry wood of a utility pole is a poor conductor, but when a fire burns the surface of the wood, the resultant charring creates a carbonized path that becomes a relatively good conductor.
  - 3.4.8.3.1. If the pole is burning near the bottom, such as from a grass fire, extinguish the fire using standard firefighting techniques and notify the appropriate utility. Ensure that no wires are down before water application.
  - 3.4.8.3.2. If the pole is burning near the top and it appears that it will cause no further damage, let it burn, notify the appropriate utility, and keep everyone clear of the area and from under adjacent wires that might drop to the ground.
  - 3.4.8.3.3. When a wooden pole is wet, it should be regarded as a conductor.
- 3.4.8.4. Secure the area until relieved by Police or utility representative.
- 3.4.8.5. The **PRIMARY** method to identify a pole is by the specific street address. Providing the pole identification number from the metal oval tag is a secondary method that will only be used if a specific street address cannot be obtained.

- 3.4.8.6.** Transformers located on poles should be treated as though they contain PCBs, and all necessary precautions must be taken. When requested, PECO Energy will perform a laboratory test on the oil for PCB content.
- 3.4.8.7.** Transformers above ground should be permitted to burn until a qualified utility representative can extinguish the fire with a dry chemical extinguisher from a power-operated elevating device. Do not place a ground ladder against the pole, as this places personnel at risk from both the power source and the liquid. Applying hose streams to these fires can result in spreading the liquid material onto the ground.
- 3.4.8.8.** Firefighters should not touch or attempt to move a capacitor. Capacitors will hold an electric charge even when disconnected from an electric service line and may also contain PCBs. Capacitors may be round or square and vary in size. Only utility personnel will handle capacitors.
- 3.4.8.9.** Old Utility Poles – There are still some old poles that were treated with #3600 Creosote oil. Creosote is an aromatic hydrocarbon. This chemical is a brown to black liquid with a tarry odor. Creosote is a known carcinogen; if vapors/smoke are encountered, members must wear full protective clothing, with SCBA.
- 3.4.8.10.** New Utility Poles – Newer poles are treated with pentachlorophenol, a carcinogen. This chemical is light brown in color with a fuel-oil odor. Hazardous decomposition products include hydrogen chloride, chlorine and chlorinated hydrocarbons. Wear full protective clothing and SCBA, and avoid skin contact when the pole is involved in fire. The products of combustion produced by a burning new pole may be the same as those produced by burning PCBs. Fire and explosion hazard: dust (powder) may form an explosive mixture in air.
- 3.4.8.10.1.** When heated (fire conditions), vapors/decomposition products may be released forming flammable and/or explosive mixtures in air. Combustion of this product may produce/release chlorinated dibenzodioxins and dibenzofurans.
- 3.4.8.11.** Utility poles may be pressure treated with chromated copper arsenate. This chemical is light to dark green in color with no apparent odor. Hazardous decomposition products include oxides of carbon, arsenic, copper and chromium. Wear full protective clothing and SCBA, and avoid skin contact when the pole is involved in fire. Chromated copper arsenate is a known carcinogen. Toxic vapors may be given off from burning wood. Ashes may contain toxic compounds.

### **3.4.9. Distribution Lines**

- 3.4.9.1.** Distribution lines (primary and secondary voltage) are the lines that carry power to a building and are normally carried overhead on poles or underground in cables to and from transformer locations near the premises.
- 3.4.9.2.** Primary voltage distribution lines are located at the top of the pole and carry the highest voltage. They are usually located above a transformer.
- 3.4.9.3.** Secondary voltage distribution lines are located below the primary lines. Their voltage output is less than the primary lines. They are usually located below a transformer.
- 3.4.9.4.** Telephone service cables and cable TV lines are usually located below the secondary voltage distribution lines.



**3.4.9.4.1. DANGER:** Circuit cable from electric substations can be located near the same level as telephone and CATV. Circuit Cable carries high voltage and looks very similar to telephone cable and can be run overhead for long distances.

### **3.4.10. Illegal Electrical Hookups**

**3.4.10.1.** A concern within the emergency response community is the theft of electricity from adjoining properties or directly from service wires, usually running along the front or rear of the property. This is commonly referred to as an “illegal electrical hookup.”

**3.4.10.2.** Some of the various methods used to accomplish an illegal electrical hookup consist of the following:

**3.4.10.2.1.** Extension cords connected to the service in an adjoining property.

**3.4.10.2.2.** An extra copper or metal line from the electric service wires, generally located at the rear of a property, is fed through a window or wall into the property. This extra line could be tapped into the electric circuit panel located in the basement or back-fed into an electric outlet inside the property.

**3.4.10.2.3.** Vehicle battery jumper cables are also used as a method of stealing electricity utilizing the same procedure as outlined above.

**3.4.10.2.4.** The electric meter (glass box unit) is removed from the face of the meter socket, exposing the interior metal clamps. A metal line or jumper cables are connected to the electrical service wires and attached to the interior clamps inside the meter socket, thereby by-passing the meter.

### **3.4.11. Electrical Injuries**

**3.4.11.1.** The most common injuries caused by electricity are electrical shocks and burns. There are three classes of burns:

**3.4.11.1.1.** Electric burns – caused by current flowing through tissue or bone and generating heat. Electrical burns may appear minor on the skin surface, but can be very serious and require immediate attention.

**3.4.11.1.2.** Arc burns – an electric arc can produce temperatures in excess of 3,000 degrees F. Direct contact with an arc can cause serious burns even if the electricity does not pass through the body. A welder’s arc is a good example of an electric arc; it is hot enough to melt steel.

**3.4.11.1.3.** Thermal burns – these burns are caused by contact with hot equipment.

**3.4.11.1.4.** Consequences of electrical shock include:

- a. Cardiac arrest
- b. Ventricular fibrillation
- c. Respiratory arrest
- d. Involuntary muscle contractions
- e. Paralysis
- f. Surface or internal burns
- g. Damage to bone joints
- h. Ultra-violet arc burns to eyes

**3.4.11.1.5.** As with all injuries sustained on the fireground or at training, any injury caused by contact with electricity should immediately be treated by EMS and reported to the fireifghter’s officer.

**NOTE: FIREFIGHTERS SHOULD NEVER LOOK DIRECTLY AT ARCING ELECTRICAL WIRES.**

### **3.4.12. PECO Response Requests**

**3.4.12.1.** PECO Energy Specific: Communications with PECO Energy should be prioritized with three levels of notification: **Emergency Requests, Priority Requests, and Routine Requests.**

**3.4.12.1.1.** **EMERGENCY** requests are for immediate life-threatening situations, such as wires down and arcing and preventing a rescue; PECO Energy is needed on the scene immediately. Emergency requests must come from the unit on the scene. **NOTE: The PECO response goal for a EMERGENCY request is 1/2 hour.**

**3.4.12.1.2.** **PRIORITY** requests are for potentially dangerous conditions, with no immediate risk of personal injury, that are adversely affecting firefighting or other emergency operations. PECO Energy is needed on the scene as soon as possible. Priority requests for PECO Energy must come from the unit on the scene. **NOTE: the PECO response goal for a PRIORITY request is 1 hour.**

**3.4.12.1.3.** **ROUTINE** requests are for situations with no apparent risk of personal injury or property damage (arcing wires in a tree, a power outage in a neighborhood, etc.). Follow-up action is needed by PECO Energy to restore or discontinue power. Normal 2<sup>nd</sup> alarm notifications are considered routine. **NOTE: The PECO response goal for a ROUTINE request is 4 hours.**

**3.4.12.2.** **NOTE: During major storms, PECO response time may be affected by adverse weather conditions, deteriorated road conditions, and/or the large number of PECO service requests.**

**3.4.12.3.** Prioritization notification protocol for other electric companies that serve Montgomery County shall be determined by the fire companies located within the electric company’s service territory.

**3.4.12.4.** **NOTE: Sound judgment must be used when deciding to leave any electrical malfunction unattended. If possible, have a unit remain on scene until relieved either by a police unit or a representative of PECO.**

## **4.0 RECORDS**

EMERGENCY RESPONDERS GUIDE FOR EMERGENCIES INVOLVING ELECTRICITY & NATURAL GAS, PECO FIRE ACADEMY

Essentials of Fire Fighting, 5<sup>th</sup> Edition

### **4.1 Master Document Listing**