

Interpretation of the Electrical Safety Committee – June 2006

When is CPR Training Required For Electrical Work?

Summary

NFPA 70E Article 110.6 Training, requires CPR training for workers working on or near energized parts. Therefore, all BNL workers who work on or near energized parts shall be required to have CPR training as part of their required training. After contacting emergency response personnel (dialing 2222), efforts should be made by CPR trained individual to resuscitate workers until paramedics arrive.

Relevant Codes Sections

NFPA 70E Article 110.6

(C) Emergency Procedures. Employees working on or near exposed energized electrical conductors or circuit parts shall be trained in methods of release of victims from contact with exposed energized conductors or circuit parts. Employees shall be regularly instructed in methods of first aid and emergency procedures, such as approved methods of resuscitation, if their duties warrant such training.

The NFPA70E Handbook further adds:

Employees who are qualified to work on or near exposed energized electrical conductors or circuit parts should be trained to perform CPR and emergency first aid. CPR and emergency first aid training should be up-to-date. In some instances, unqualified employees might be expected to provide emergency first aid or CPR.

Discussion / Analysis

It was suggested that BNL was meeting this requirement by having on on-site emergency response capability through the Fire Rescue EMT's. Discussions with this group indicated that they had an average response time of about four minutes. Further discussion with the head of BNL's Occupational Medical Clinic indicated the following; "the time to resuscitation after a cardiac arrest is critical, with survival chances dropping off rapidly if resuscitation does not come quickly".

The following was taken from the journal *Circulation* (December 13, 2005) published by the American Heart Assoc.

Cardiac Arrest and the Chain of Survival

Most victims of SCA [sudden cardiac arrest] demonstrate ventricular fibrillation (VF) at some point in their arrest.3–5 Several phases of VF have been described,⁷ and resuscitation is most successful if defibrillation is performed in about the first 5 minutes after collapse. Because the interval between call to the emergency medical services (EMS) system and arrival of EMS personnel at the victim's side is typically longer than 5 minutes,⁸ achieving high survival rates depends on a public trained in CPR and on well-organized public access defibrillation programs.^{9,10} The best results of lay rescuer CPR and automated external defibrillation programs have occurred in controlled environments, with trained, motivated personnel, a planned and practiced response,

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and short response times. Examples of such environments are airports,⁹ airlines,¹¹ casinos,¹² and hospitals (see Part 4: "Adult Basic Life Support"). Significant improvement in survival from out-of-hospital VF SCA also has been reported in well-organized police CPR and AED rescuer programs.¹³

CPR is important both before and after shock delivery. When performed immediately after collapse from VF SCA, CPR can double or triple the victim's chance of survival.¹⁴⁻¹⁷ CPR should be provided until an automated external defibrillator (AED) or manual defibrillator is available. After about 5 minutes of VF with no treatment, outcome may be better if shock delivery (attempted defibrillation) is preceded by a period of CPR with effective chest compressions that deliver some blood to the coronary arteries and brain.^{18,19} ...

Therefore, it is our judgment that reliance of emergency response from BNL EMT's alone is not sufficient, and that those who work on or near should be trained in CPR methods to improve survivability.