Capital Safety
3833 SALA Way
Red Wing, Minnesota
55066-5005

Tel: 651.388.8282
Fax: 651.388.5065

Best Practices for Protecting Against Arc Flash and Fall Hazards
By John Fuke, Canadian Technical Manager with Capital Safety

Industrial, commercial and institutional electrical power systems present potentially dangerous work environments for electrical work performed at height. Aside from the hazards of working at height, electrical power systems expose electrical technicians to an average of five to ten explosions of electrical energy each day. It is the responsibility of the safety managers, contractors and individual workers to employ effective safety programs, including the use of personal protective equipment, to help protect themselves and their co-workers from electrical and fall hazards.

One of the most common hazards that face electrical professionals is arc flash – a fiery explosion that emits a dangerous amount of concentrated energy. An arc flash is able to produce a blast wave equivalent to several sticks of dynamite and can cause damage to hearing or eyesight, severe burns and even death.

The following are some best practices to employ as an electrical professional to prevent and protect against arc flash and fall hazards and comply with safety regulations:

Be knowledgeable
Arc flash can be caused by a simple workplace incident such as dropping a tool or failing to lock out the source. Even the build up of dust, impurities or sparks produced during routine maintenance, including fused switch operations, can cause arc flash.

It is the responsibility of the worksite manager and overseeing company to ensure its employees are knowledgeable about the causes of arc flash, the dangers of working with electrical systems, preventative measures that should be taken to avoid hazards, and the correct personal protective equipment that should be worn. Having this knowledge will help safeguard workers, and lower risks of non-compliance with provincial statutes and other regulatory organizations.

Provide training programs
Offer compliance and safety training programs to help workers understand arc flash and fall hazards. Fall protection and personal protection equipment manufacturers offer a variety of programs such as on-site training services, consulting experts who can determine what training and safety equipment is necessary, and training centers.

Training programs should deliver information on safety standards, compliance techniques and test the skills of those taking the class. They should also teach safety managers and electricians how to gauge the dangers of each task and correctly read the labels on electrical equipment to determine what personal protective equipment to use in specific situations.

Managers should also require periodic assessments and refresher training courses. Regulations and standards require training every two years at minimum, and sooner if the workplace changes, new systems or equipment are installed, or if workers do not demonstrate adequate knowledge.

Utilize the right safety equipment
Finally, electrical systems managers should select the most compliant and best personal protective equipment for the job. The NFPA 70E guidelines identify how to assess the potential hazard of arc flash, and necessary clothing and safety measures to be taken when completing routine operations. Be sure to match the equipment's arc flash rating on the label to the amount of protection workers need based on the assessment.

For electrical work performed at height, a full body harness designed to protect against arc flash is the best choice. The harness should meet all criteria outlined in the ASTM F887-11 Arc Flash Standard and should be drop-tested to check integrity against CAN/CSA Z259.10 after exposure to an electric arc.

By correctly identifying arc flash hazards, implementing an effective training program and wearing the correct level of arc flash protective gear and most appropriate personal protective equipment for the job, injuries and fines can be avoided. Follow these best practices to ensure the safety of electricians and utility workers when working with electrical equipment and at height.

About the Author
John Fuke is the Canadian Technical Manager with Capital Safety, a leading designer and manufacturer of fall protection and rescue products, including the DBI-SALA® and PROTECTA® brands. For more information, visit www.capitalsafety.com.