

# ARC FLASH

## What Employers Need to Know



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An electrician was removing wiring from a fan motor in an overhead crane at a steel manufacturer, a fairly routine procedure. But when an ungrounded electrical conductor touched a grounded surface, it sparked an arc flash. The technician suffered third-degree burns on her hand and first-degree burns on her face.

That incident, detailed in an OSHA release last year, highlighted the dangers of arc flash and the importance of having safety protocols in place.

According to the Workplace Safety Awareness Council, an arc flash happens when a flashover of electrical current leaves its intended path and travels ("arcs") through the air to the ground or to another conductor. When that happens, the results can be devastating, even deadly. Even the most experienced worker or

workers and business owners do not fully understand the event and its potential consequences. Arc flash is often preventable, or, at the very least, its impact can be minimized. At A.I.M. Mutual Insurance Companies, we encourage employers to conduct a hazard analysis and implement safe work practices at each job site. While quality safety gear is always recommended, it is no guarantee of worker safety. And for some employers, it isn't always practical, either from an economics standpoint (due to the high cost of protective equipment) or an efficiency standpoint (due to the difficulty of working with equipment while wearing layers of thick protective gear.)

For maximum protection, a combination of safety measures works best. They include de-energizing the circuit whenever

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electrician is at risk. The US Bureau of Labor Statistics reported that nearly six thousand US workers died due to an arc flash incident between 1992 and 2013.

So what causes an arc flash? There are a number of triggers, ranging from dust and particulates in the air to dropped tools, material failure, and condensation or humidity. Accidental touching of conductors, faulty installations, and corrosion can also lead to an arc flash. The consequences can be violent as flying molten metal, blast pressure, sound blasts, extreme heat, burns, and fire may result.

Though arc flash is a pervasive topic in the industry, many

possible and ensuring proper training and protective equipment for all personnel. At a minimum, employees need the skills to distinguish exposed live parts, determine nominal voltage of live parts, and understand clearance distances. Finally, equipment protections should be in place, including insulation, barricades, guarding, secondary protection through grounding, and ground fault circuit interrupters.

Annual training, while not required, should be considered a "best practice" for a safer workplace. A comprehensive arc flash program can reduce the likelihood and severity of an arc flash incident at your workplace. ▀