

Electrical Safety Month 2014

Electrical Equipment Safety

EFCOG Electrical Safety Subgroup

May 2014



Overview

It's May again – time to look at electrical safety.

The theme this year is “Electrical Equipment Safety”

Boring topic, right? What can we say you don't already know?

Nothing? Maybe, maybe not. Read on for some interesting facts, shocking lessons learned, and other useful information that will keep you, your family, and your coworkers safe around electrical equipment.

Electrical Equipment

This is a pretty broad category

Anything you can think of that uses electricity can probably fall into this category.

Most of the injuries from electrical equipment occur from equipment that was simply plugged into the wall. Not all, certainly, but many...

For example, the CPSC recently recalled over 20 *million* (you read it right – million) dehumidifiers. These items were sold at retail stores around the country, and this little \$69 item's failure has resulted in nearly \$2 million in damages, 80 injuries, several fires...you get the point. It had an electrical fault inside, so when it was operated unattended for long periods of time, it could catch fire and burn up. Lesson learned? Manage your risk – unplug your coffee pots, space heaters, and other heat producing devices when not in use. Maintain equipment as recommended by the manufacturer. Look at it once in a while. The best equipment can fail catastrophically under the right circumstances...

Electrical Equipment Reliability

There are three parts to ensuring that your electrical equipment will function safely throughout it's lifetime:

- 1) Purchase equipment from authorized and/or reputable dealers
- 2) Purchase only equipment from a Nationally Recognized Testing Laboratory
- 3) Maintain the equipment in accordance with the manufacturer's instructions

Authorized Distributors

An Authorized Distributor has a formal arrangement with the manufacturer to sell that manufacturer's products direct from the factory.

Authorized Distributor agreements also generally prevent the retailer from purchasing those products from any other source.

In 2007-2008, a large recall of Square D breakers was issued. Approximately 500,000 counterfeit breakers bearing the Square D name were sold across the US for significantly discounted prices. These breakers caused fires and other damage to several homes and businesses.

The breakers were, in fact, originally Square D breakers, but had been salvaged, modified, and sold as new by some less-than-ethical businesses (NOT Square D) through non-authorized distributors.

NRTL Listings

A listing by a Nationally Recognized Testing Lab means the equipment has been independently certified to meet the relevant product safety standards.

Unlisted equipment may be perfectly safe, or may pose a significant hazard to you, your mission, and possibly even your families.

Listed equipment should be used within the listing – “For Home Use Only” means exactly that – don’t bring it to work – it’s not designed to undergo the abuse that may exist in a commercial/industrial facility.

Likewise, “For Indoor Use Only” means that if you get it wet, it could fail catastrophically, shock the user, or otherwise fail.

For additional information on product listings, check out the OSHA information page at <https://www.osha.gov/dts/otpca/nrtl/index.html>

Unlisted Equipment

Most organizations have an unlisted equipment inspection program. Many call it an “AHJ Inspection” or simply “Unlisted Equipment Inspection” – but the sites generally follow the guidelines in the DOE Electrical Safety Handbook for unlisted equipment inspection. Follow your specific site’s program for ensuring your unlisted equipment doesn’t pose a hazard to you or your coworkers

What is CE? CE is NOT a listing – it’s an import/export requirement for the EU for the manufacturer to certify that the equipment meets certain standards...but not all – and because it’s not generally an independent certification, OSHA does not recognize the CE mark as a suitable substitute for a product safety listing.

Maintenance Programs

The maintenance of electrical equipment forms the third part of safe equipment.

Equipment that is well maintained is much less likely to fail in use, or cause injuries or property damage.

Consider what would happen if you didn't change the oil in your car. It would run...for several thousand miles – but eventually, the oil would get so bad that the engine would seize, resulting in several thousand dollars worth of damage, and potentially stranding you in the middle of a desert in the middle of the night.

Electrical equipment is the same way. Properly maintained, electrical equipment will operate safely for many years. But if you don't operate and maintain the equipment properly, it can and will fail – and usually at the most inopportune times.

What equipment needs routine maintenance?

Excellent question.

Here's another: Do you know where all your Ground Fault Circuit Interrupter (GFCI) receptacles are in your home?

The first question and the second question are related: GFCI receptacles should be tested monthly to ensure they are working properly, and replaced when they fail. Many older GFCI receptacles do not "fail safe" but fail "as is" – meaning that even if there's a ground fault that should trip it, it won't trip.

A recent trip to a local mall brought this to light. The mall was built back in the 1970's, and not significantly improved since then. In the restroom, soap dispensers had been installed directly over the GFCI receptacles. As the soap dripped down over the years, the receptacles filled with soap. When tested, nothing happened – no trip, nothing. Not a situation you ever want to find yourself in. A GFCI that doesn't trip when it's supposed to may be a death warrant for you or your kids.

Three basic reliability concepts

Authorized Distributors

Listed Equipment

Scheduled Preventive Maintenance

These three simple ideas will keep you, your family, and your coworkers safe from the inherent hazards of electrical equipment.

More Info

This year's Electrical Safety Month materials include an in depth look at the various types of receptacles, NRTL programs, counterfeit items, and some significant recent recalls. Please review the materials, post them in your work place, and share them with others – and don't keep this stuff at work – your families and friends also stand to gain from this info.

Additionally, the Electrical Safety Foundation International (ESFi) has an excellent publication for Electrical Safety Month: [*Electrical Safety Illustrated*](#)

Download the magazine – lots of very useful and relevant articles on general electrical safety for work and home – and many of the articles enhance the information you will find here on the Electrical Safety Month pages.

And as always, contact your local site's Electrical AHJ for additional information on electrical safety.

THINK ELECTRICALLY SAFE!