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## **Why are arc flash studies and warning labels so important? - by John Sloane**

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Last month, we discussed what an arc flash is, and the purpose of arc flash warning labels. But here's a quick recap: An arc flash is essentially an explosion caused by a short circuit. When dealing with high-energy electrical equipment, an unexpected short circuit causes the release of electrical energy in the form of heat and pressure, and are generally caused by equipment failure, a fault or surge somewhere else in the system, or human error.

An arc flash warning label gives key information about a particular piece of electrical equipment, usually including voltage, various safety boundaries, and guidance on safety gear required. With this information, an electrician or a qualified worker is able to determine the appropriate level of protection and precaution necessary to begin working on that piece of equipment.

To determine the information on that label, at Interstate, we have our own in-house electrical engineering team that works hand-in-hand with our electricians and our safety personnel. While not every electrical contract team can have an in-house engineering staff, it is absolutely imperative that they work in tandem with electricians and safety teams to ensure the utmost attention to detail.

In this industry, that attention to detail goes both ways. Engineers have to make sure they're assessing the arc flash risk appropriately, meaning they can't underestimate the potential hazard, but they also can't be too cautious and overestimate. You might ask, why? What would be the harm in ensuring anyone working on volatile electrical equipment is over prepared for the potential risk?

Well, when working with commercial electrical equipment, being over prepared could mean anything from wearing a slightly more cumbersome piece of personal protective equipment to requiring power to be shut down to an entire building unnecessarily. Both of those situations would add cost, time, and additional hazards to a project, and those decisions can involve multiple stakeholders.

Arc flash studies, warning labels, and proper precautions are increasingly required by property owners and their insurance companies. Any and all electrical equipment in a facility adds liability for the owners, and it is always in the best interest of everyone involved to make sure the appropriate knowledge is shared to prevent any harm or hazards from happening. Performing an arc flash study before and during construction of a facility can also help mitigate unnecessary costs down the line by making sure each piece of equipment can handle the potential load or will function properly in the case of equipment fault somewhere in the system.

Now you know what those little warning labels are that you see on various types of electrical equipment, and why they are so important. Bottom line, these labels are there for worker safety, public safety, and facility safety.

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