

## Jason Mechanical Corp

# Tool Box Safety Talk

### ARC FLASH

In our field of work, arc flash is probably the most serious of the safety concerns that we have. Arc Flash is a constant risk and you will have to take precautions at all times to prevent it from happening. Unfortunately, it happens often and it is very costly. Most importantly, it can be deadly.

Recently a field engineer at a different contractor experienced an arc flash when opening the panel door of a 1200 amp GE Spectra Series switchboard. The spring clip of the interlock had broken loose, falling into the energized A-phase line side fuse cap and shorting to ground. This event took less than a second to occur and was caused by a “hidden” hazard – it could’ve happened to anyone. Because the field engineer was well-trained, used safe work practices, and wore the appropriate PPE, he sustained no injuries. The attached pictures show the effects of the arc blast (note the FE’s scorched glove).



An arc flash, essentially an electrical short circuit through air from phase to ground or phase to phase, occurs in an instant. In a worst case scenario, an arc flash can vaporize equipment causing an arc-plasma fire ball. Solid copper conductors can expand to 67,000 times their original volume and temperatures may exceed 35,000°F.

Per NFPA 70E, a Flash Hazard Analysis shall be done before a person approaches any exposed electrical conductor or circuit part that has not been placed in an electrical safe work condition. This Arc Flash Hazard Analysis will be used to determine the level of Personal Protection Equipment PPE required and the Arc Flash Boundary in inches along with the incident energy found at each location.

Each piece of equipment operating at 50 volts or more **and not put into a deenergized state** must be evaluated for arc flash and shock protection. This evaluation will determine the actual boundaries (i.e. prohibited, limited, restricted, etc.) and will inform the employee of what PPE must be worn.

Once the evaluation is complete an Arc Flash Hazard warning label must be affixed to the equipment and readily accessible to employees who may work on the energized equipment.

Safety Concerns:

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