

Engineering

to reduce electrical arc flash hazards



The challenge: Your equipment is rated correctly and your doors are closed—but is this enough to mitigate arc flash hazards?



The solution: Assess. Adjust. Train. And prevent harm.

You may believe that your electrical systems are only dangerous when the cabinet doors are open—and then the only risk is that of electric shock. But in view of research conducted by the IEEE Standard (1584) Arc Flash working

group, we now know that the real danger is the electrical arc flash.

Arc temperatures can reach 19,425 °C (35,000 °F)—approximately 14,980 °C (or 27,000 °F) hotter than the surface of the sun. An arc produced by a 30 kA fault is accompanied by a pressure wave of 2,000 psf, a sound wave of 165 dB, and a shower of mol-

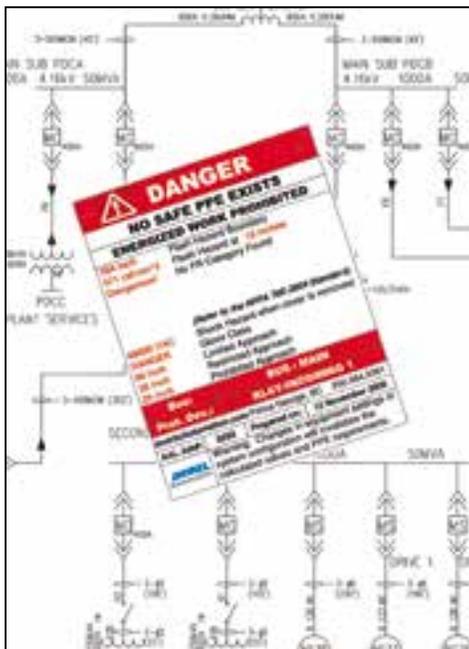
ten copper and metal shrapnel, with a radiated incident energy of 50 cal/cm².

That's why ANDRITZ AUTOMATION provides a full range of services to analyze, mitigate, and train personnel in the dangers of electrical arc flash.

Our services

The team of electrical experts at ANDRITZ AUTOMATION will:

- Assess your power system and update your single-line diagrams.
- Perform the required short-circuit and coordination studies to identify available fault current and protective device issues.
- Carry out an arc flash hazard assessment and analysis, allowing you to put proper procedures in place and make appropriate recommendations for improvements. Typical improvements include:
 - Adjustments of existing protective equipment coordination settings
 - Installation of new protective devices
 - Installation of arc flash rated switchgear
 - Labeling of equipment
- Provide training for management, staff, and trades to raise awareness of arc flash hazards. Knowledge is the first building block to personal and personnel safety.



Our training modules

We provide a full suite of courses to help you protect your personnel.

Understanding arc flash and the employer's role (four hours)

This is an introduction to the applicable standards and their impact on safe electrical work practices in industry.

Electrical safety and arc flash for qualified electrical staff (eight hours)

Designed for qualified electrical employees who perform maintenance and repair of electrical equipment. This session aims to reduce work site accidents and injuries and meet training requirements under the NFPA 70E/CSA Z462 standards.

Electrical safety and arc flash for non-electricians (four hours)

This course is for non-electrical employees who work around electrical equipment, such as operators, supervisors, and other trades.

Safety, standards, and your plant

ANDRITZ AUTOMATION has a number of approaches to reduce the risk of electrical arc flash in your facility. The ideal way to ensure safety of personnel is to work on electrical equipment only when de-energized. In many instances, however, this option is not possible.

So how do you protect your people? The next best solution is to reduce or remove the hazard by other means, such as improving coordination, installing arc-rated equipment, or lowering available fault current values. Some solutions, such as adjusting settings on existing protective devices, can be economically implemented. The last line of defence for arc flash is personal protection equipment

Benefits

- Improved employee safety and increased uptime
- Improved electrical systems, including protective device coordination
- Updated electrical system single-line drawings, with fault current and arc flash values
- A comprehensive model of the plant power system is available—an invaluable tool for future planning of upgrades or troubleshooting electrical problems
- Compliance with applicable codes
- Upgrading of equipment and training of workers

(PPE). The NFPA 70E Standard for Electrical Safety in the Workplace (USA) and CSA Z462 Workplace Electrical Safety (Canada) both mandate analysis of flash hazards requiring, whenever possible, that the emphasis be placed on reducing or eliminating the hazard rather than increasing the level of PPE.

ANDRITZ AUTOMATION can assist in the preparation of procedures and training processes that will allow employers to document training according to the requirements of CSA Z462 and NFPA 70E.

Automation solutions

Release your full potential



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