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About Industry Partners

The Edison Electric Institute extends an invitation to manufacturers, distributors, and service providers to join as Industry Partners, in helping us to prevent serious injuries and fatalities, also known as SIFs. The focus of preventing serious injuries and fatalities is changing the way EEI members measure and communicate the success of their safety programs. As a result, the needs, priorities and purchasing preferences are evolving throughout the industry.

# SIF PREVENTION INDUSTRY PARTNERS NEWSLETTER

## VERY SCARY "CLOSE CALL" IN TENNESSEE // By [Buckingham Manufacturing](#)

Michael Sims and Derek Turpin were working on pole transfers in Tennessee. While working on the transfers they proceeded to ensure all safety measures were followed and they attached to a newly placed anchor that was placed by a sub of our customer. Michael and Derek attached their down guy as instructed and put tension on the anchor with no issues. Shortly after Michael and Derek both climbed the pole to finish the transfer work (straight clamps and bonding). At this time the anchor gave out due to the sub placing a rock anchor in dirt and the load was too much to handle. A Very dangerous situation and a good lesson to not take short cuts. The Buck Squeeze fall arrest that was correctly being used kept the guys from being ejected off the pole when it abruptly stopped when hitting the excavator! The guys definitely wanted to share this scary situation which will be discussed and investigated at a local level as well.

Please contact Ryan Tronovitch at [ryant@buckinghammfg.com](mailto:ryant@buckinghammfg.com) for more information.



# ELEVATING SAFETY:

## The Crucial Role of Flame-Resistant, Arc-Rated Base Layers for Utility Workers

By [Bulwark Protection](#)

In the dynamic world of utility industries, where the threat of arc flash incidents is an ever-present reality, prioritizing the safety of our workforce is paramount. As the Senior Technical Training Manager for Bulwark FR, I've witnessed firsthand the transformative impact of adopting flame-resistant, arc-rated (FR/AR) base layers beneath FR/AR garments for utility workers. In this article, we delve into the benefits of this strategic approach, ensuring not just compliance with safety standards but enhancing the overall well-being of our invaluable workforce.

### Recognizing the Unique Challenges

Utility workers face unique challenges – from high-voltage environments to the unpredictability of arc flash incidents. The conventional approach of relying solely on FR/AR outer layers, while crucial, might fall short in providing comprehensive protection. This is where the significance of incorporating FR/AR base layers comes into play.

### Comprehensive Protection from Thermal Hazards

The first and foremost benefit lies in the comprehensive protection offered against thermal hazards. By adding an additional layer beneath the outer garment, we create a robust defense



mechanism. The base layer serves as a secondary shield, preventing direct contact of the outer layer with the skin in case of an arc flash event. This not only reduces the risk of burn injuries but also enhances the overall safety profile for utility workers.



### Moisture Management for Enhanced Comfort

Comfort is a crucial aspect of ensuring compliance with safety practices. FR/AR base layers are designed not only with protection in mind but also with a focus on moisture management. The innovative fabrics wick away perspiration, keeping workers comfortable even in challenging conditions. Comfortable workers are more likely to adhere to safety protocols, fostering a culture of compliance and productivity.

### Proactive Approach to Safety

Adopting FR/AR base layers represents a proactive approach to safety. By providing workers with these essential garments, we eliminate the ambiguity associated with personal choices in undergarments. This standardized

approach not only enhances overall safety but also streamlines the process, ensuring that every layer adheres to the necessary safety standards.

### Layering Principles and Industry Standards

Adhering to industry standards is non-negotiable. OSHA 1910.269 permits the use of non-melting flammable garments (non-FR) in a layered system, emphasizing that the system's arc rating must prevent break open to ensure protection. The layered approach, including FR/AR base layers, aligns perfectly with these

principles, providing a holistic solution to thermal hazards.

### Addressing Environmental Variability

Utility workers face diverse environmental conditions – from extreme cold to sweltering heat. FR/AR base layers, when combined with appropriate outer garments, create a versatile solution that adapts to these variations. In cold weather, the layered system provides additional insulation, while in warmer conditions, the moisture-wicking properties ensure workers stay cool and comfortable.

### Training and Education

Proper training on the correct use and care of FR/AR base layers is imperative. As the Senior Technical Training Manager at Bulwark FR, I emphasize the significance of educating our workforce. Understanding when to wear FR/AR base layers, how to don and doff them, and their limitations ensures that our workers are not just equipped with the right gear but are also knowledgeable about its optimal use.

### Conclusion: Elevating Safety Culture

In conclusion, the adoption of flame-resistant, arc-rated base layers for utility workers is not just a safety measure; it's a commitment to fostering a culture of safety. It's about going beyond the minimum requirements and embracing a proactive stance to protect those who keep our utilities running. By prioritizing the comprehensive protection, and comfort of our workforce, we not only meet industry standards but exceed them, creating a safer, more resilient workforce for the challenges that lie ahead. Together, let's elevate safety standards, one layer at a time.



## WHEN WERE TRAFFIC CONES INVENTED?

By [PSS-Innovations](#)

The use of channelizers to indicate dangerous spots on roadways has a long and evolving history. In the early days of traffic safety, it was customary to use small wooden tripods or more

prominent wooden barriers to mark areas that required attention. However, these early markers had their limitations. The smaller tripods were not easily visible and were prone to breaking, while

the larger barriers posed a real hazard to passing vehicles.

It was in 1940 that a breakthrough in traffic channelizer design occurred. Charles D. Scanlon, while working as a street painter



for the City of Los Angeles, invented a revolutionary marker to keep cars from driving over wet paint. He designed a [hollow, conical device](#) that would be readily visible from every angle: the traffic cone.

Scanlon's innovative design was patented in 1943, giving birth to the traffic cone as we know it today.

### **Evolving the Traffic Cone**

While cones were introduced to the market to provide better visibility for drivers and increase safety in construction zones, reflective sheeting on the sloped, curved surfaces, when used, was challenging to apply and introduced wasted material. The cone's surface, angled upwardly, also provided a less-than-optimal medium for reflecting light back to motorists. PSS set out to revolutionize the market by solving these issues.

In 1998, PSS developed and launched [Navigator](#), a 42-inch slimline channelizer with a tiered design. Not only did this design feature make the channelizer reflect more light back to its source, but it also made applying

the reflective sheeting easier. Within a few years, every significant manufacturer of 42-inch channelizers in the United States incorporated PSS' tiered design into a 42-inch channelizer of their own.

In 2015, a utility company in Illinois asked PSS to consider designing and developing an alternative to the typical collapsible cone. The company wanted to continue using collapsible cones—a space saver relative to fixed cones on their vehicles—but was frustrated by the current design's lack of durability and inability to be repaired. The predominant design of collapsible cones used then consisted of an outer fabric supported internally by concentric plastic rings that were vertically oriented and "collapsed" by nesting within each other when pushed downward. Around this same time, a law enforcement office (LEO) from Florida faced a challenge with cones at traffic incident management locations.

Edgardo Santiago had seen and managed his fair share of vehicular crashes. He started his career at the Fort Walton Police Department in Florida. Frequently,

he observed motorists either ignore or not see traditional cones set up to divert traffic and then drive through the crash scene. Edgardo resolved to design a traffic control device for incident management that motorists would respect—one that would better protect the crash scenes at which his fellow officers and he worked.

In 2019, after having developed numerous prototypes in his garage, Edgardo approached PSS to help refine and produce his concept for a folding traffic control device that would be more visible and more...well, controlling to traffic! His idea included three panels, which rotated around a center hinge. It was not a barricade, not a barrier and not quite a cone, at least not as we understood cones to look.

In considering taking on the problem, PSS recognized that the same reflectivity challenges that plagued 42-inch conical channelizers prior to PSS's Navigator design also hampered the effectiveness of 28-inch cones. To solve this, PSS put its innovative spirit to work again. The company set out to create a more visible cone that is compact when stored and commanding when deployed. Furthermore, we aimed to make a more durable solution than existing collapsible, easily repairable cones.

### **The FirstGard Folding Cone**

The result of this quest is the [FirstGard folding cone](#), an innovative, three-panel structure that folds to 1.5 inches thick for convenient storage. This solution was engineered to meet the needs of the first responder, utility and vegetation management markets.

When deployed, FirstGard becomes a powerful, commanding presence with a footprint 29-inches wide.

But wait, is FirstGard really a “cone”?

Well, the exterior dimensions of the FirstGard, including the footprint and the space occupied by the design, are indeed conical in shape. FirstGard contains the reflective sheeting prescribed by the Manual on Uniform Traffic Control Devices Chapt 6.F (MUTCD) for cones in width, location and spacing. Most importantly, FirstGard meets the [MUTCD](#) definition of a cone, “a flared tubular shape with a base wider than the tip.”



But whether FirstGard is a cone might be the wrong question. Maybe we should be asking how effective FirstGard is at satisfying the function of a cone.

One of the revolutionary features of FirstGard is the unique design of its vertical panels. Unlike traditional cones, FirstGard’s panels possess a vertical, flat face, which provides a more optimal angle and larger surface area for reflecting light back to the approaching vehicular source.

Expanding the reflective surface and orienting it more perpendicular to approaching traffic leads to a brighter cone. In fact, laboratory tests demonstrated that FirstGard folding cones **can reflect up to twice as much light** back to their source compared to traditional cones with the same grade of reflective material, making your location twice as visible and twice as bright.

### The Importance of Visibility

In traffic control situations, visibility is paramount. It can be the difference between a safe commute and a dangerous collision. By optimally orienting light reflection, FirstGard helps ensure drivers can see and avoid potential hazards, keeping motorists and workers on the road safe.

However, with its unique design and enhanced reflective capabilities, FirstGard challenges the notion that “cones” must conform to a specific shape to fulfill their purpose. This begs the question: Is it time to reconsider the traditional form of traffic control devices?

For up to 80 years, the cone shape has been synonymous with road safety. Its conical design has served as a universal symbol, easily recognized by drivers and pedestrians alike. However, as technology and innovation



continue to transform various industries, it is only natural that traffic control devices evolve as well.

The FirstGard folding cone demonstrates that alternative designs can provide even greater visibility and functionality compared to traditional cones. Its flat-faced, vertical panels not only allow for a larger surface area for light reflection but also contribute to its compact and storage-friendly design. These features challenge the belief that the shape of a cone is essential for its effectiveness in traffic control.

But one thing is for certain: deploying [PSS’s FirstGard Folding Cone](#) at your location will make a first impression people will see. Protect your workers and increase your visibility with less effort. Choose FirstGard for a safer and more effective traffic control solution.

# THE LETHAL POWER OF COMPLACENCY: A Lesson in Safety

By Tyndale

Jason Brozen, a seasoned electrical worker with over 14 years of experience, once believed he was impervious to hazards due to his expertise. However, a routine task turned into a life-altering incident that changed his life forever. An arc flash occurred when Jason was installing a breaker in a 2,500-amp piece of gear at a hotel. In that critical moment, Jason's complacency towards personal protective equipment (PPE) and safety protocols became painfully clear.

Despite ample awareness of the need for PPE, Jason and his employer had grown complacent – especially when working at a lower 120/208 voltage level. Jason found himself without [arc-rated and flame resistant \(AR/FR\) clothing](#), a face shield, eye protection, earplugs, or gloves when the accident struck. His non-FR clothing—a polyester/nylon coat, pants, and a cotton-blend shirt—was akin to [wearing fuel](#).

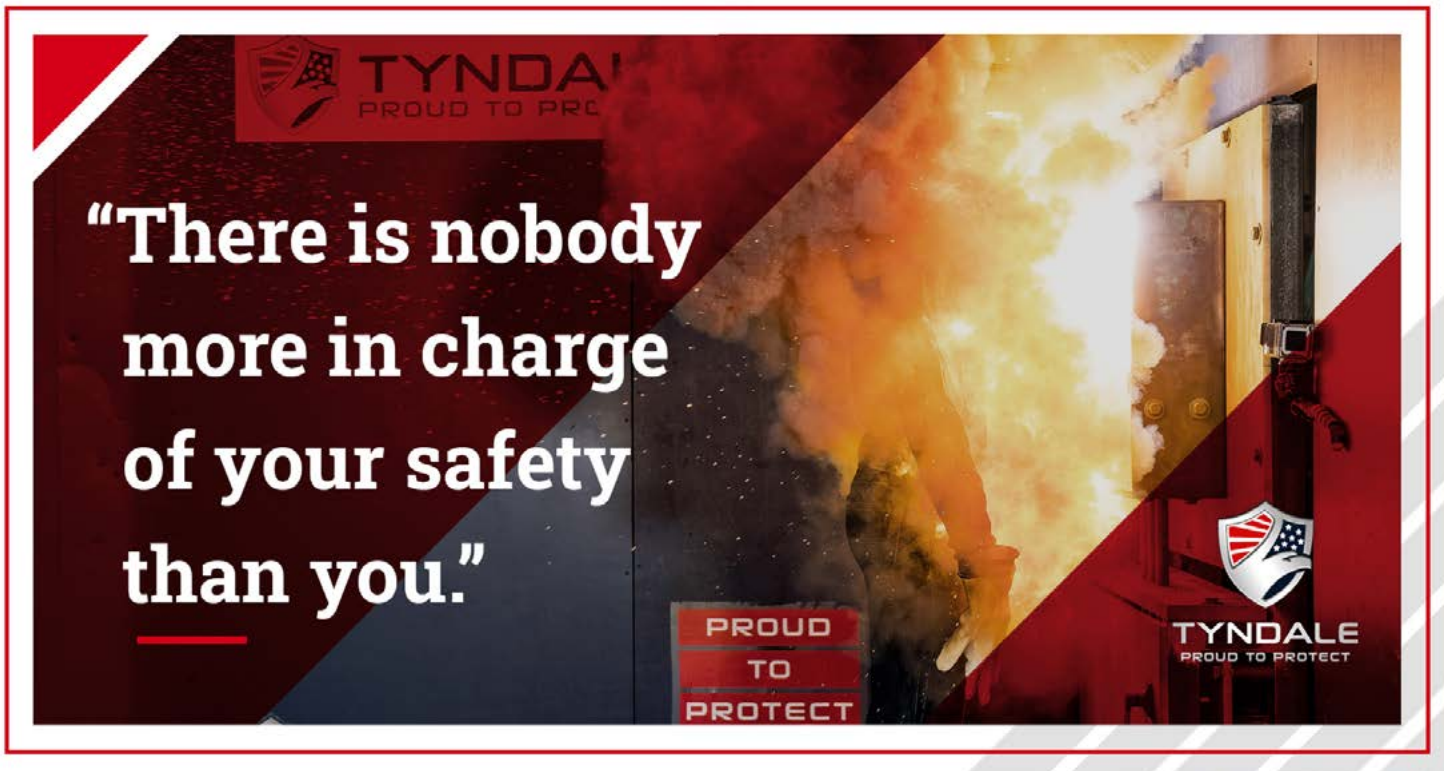
Jason was working on energized equipment to minimize hassle for the customer. However, because he was using a fiberglass fuse puller to maneuver a breaker into position, he felt in control of the situation. He was completely aware that—because the equipment was energized—using a metal tool for this task would be foolish. What he failed to recognize was the tiny metal rivet at the end of the tool.

When the tool hit the energized bus bars, Jason experienced the arc blast. Though it only lasted



an eighth of a second, Jason felt each cycle as if in slow motion. In that eighth of a second, Jason endured a barrage of copper shrapnel and 35,000 °F heat. He emerged from the blast with burns on “only” 14% of his body's surface area. But the costs of his incident were severe:

- Deep third-degree burns on the backs of his hands.
- Second-degree burns on his face and the palms of his hands.
- First-degree burns elsewhere.
- A week in a coma.
- Two weeks in the ICU burn unit.
- Mental, emotional, and physical shock.
- Trauma for his family, who were told it was unclear if he would survive.
- Loss of work for seven months (as the primary financial provider for his family).
- Intense hand therapy for five months.
- Life-long scars, permanent nerve damage, and phantom pain.
- Acute stress disorder (ASD) and post-traumatic stress disorder (PTSD).
- \$1.2M in medical costs.
- A \$65,000 [OSHA violation for his company](#).



Some of the biggest impacts couldn't be seen with the eye.

"You're completely dependent on your family to take care of you," he said. Jason couldn't drive for two months. He couldn't dress or use the bathroom by himself. "It really affects your pride, your emotional and mental health, not to mention your physical health and the pain that lasts for months and months," he said.

### Jason's Message to You

In hindsight, Jason warns, "Don't be me. Don't make bad decisions like that."

Since his experience, Jason has made it his mission, vision, and passion to prevent others from suffering similar fates. As an NFPA Certified Electrical Safety Compliance Professional (CESCP), Jason now serves as a [corporate safety trainer for Tyndale](#), a leading provider of [arc-rated clothing](#).

"What brought me to Tyndale was their shared mission, vision, and

passion to save workers' lives every day."

His message to fellow electrical workers is clear: take ownership of your safety.

It's natural to think most arc flash incidents stem from equipment failure. However, in reality, they are most often caused by human error. For this reason, Jason's message is simple: "There is nobody more in charge of your safety than you." He urges electrical workers to recognize their role in ensuring their safety and to prioritize the [proper use of PPE, including AR/FR clothing](#). While bypassing safety measures may seem expedient, the long-term consequences far outweigh any perceived benefits.

Complacency, Jason warns, is a dangerous mindset that can lead to catastrophic outcomes. He encourages electrical workers to listen to their inner voice and conduct a thorough risk assessment before proceeding with any task. He believes that this simple step could

spare others from the kind of agony he and his family endured.

In conclusion, [Jason's story](#) serves as a poignant reminder of the deadly consequences of complacency in the workplace. By prioritizing safety—[wearing proper PPE, wearing it properly](#), and remaining vigilant against the allure of shortcuts—we can prevent tragedies and ensure the well-being of ourselves and our colleagues. Let us heed Jason's advice and never underestimate the power of complacency.

Additionally, it's crucial for employers to prioritize [safety training](#) and enforcement of safety protocols to create a culture of awareness and accountability. By investing in comprehensive safety programs and providing regular refresher courses, companies can empower their employees to prioritize safety in every aspect of their work. Together, we can mitigate risks, prevent accidents, and ensure that every electrical worker returns home safely.

# DURABILITY IS SUSTAINABILITY – EVEN WITH PPE

By [Youngstown Gloves](#)

In a world increasingly concerned with sustainability, one often overlooks the significant role that durability plays in minimizing environmental impact. This article explores the profound connection between the durability of work gloves and sustainability. Focusing on a product that outlasts competitors by 2 to 3 times, we delve into the various ways this enhanced durability leads to a substantial reduction in waste across different stages of production and usage.

patterns, high quality grain leather and a reinforcement layer of leather in critical wear areas, like the fingertips, palm and thumb. When Youngstown Glove first entered the Electric Utility space 15 years ago the most common work gloves found were low bid driver gloves. These gloves were designed to be inexpensive through a simple pattern and a single layer of thin leather, typically cow, goat or deer. It was not uncommon to learn that field workers would replace their

Youngstown Glove's commitment to durability is reflected in the business model. All our customers at IOUs have come through wear trials, where they experienced firsthand how much longer our gloves last compared to competitors. To instill confidence in the durability of our products, we offer a 2-month use guarantee with our work gloves and leather protectors. This guarantee not only assures customers of the quality but also aligns with sustainability by promoting long-term usage over frequent replacements.

When replacing a low bid driver glove our durability can be as much as 5X greater. When compared to higher quality competitors, our durability is typically 2X to 3X greater. In both cases the environmental impact of reduced usage is very significant when looking at the entire production chain.

## 1. Reducing Leather Consumption

The durability of our work gloves translates into a longer lifespan, which means less frequent replacements. This directly contributes to a reduction in the consumption of leather, a primary material in the manufacturing of work gloves. By extending the life of each pair, we are actively promoting responsible resource management and minimizing the environmental footprint associated with leather production.

Youngstown Glove designs and builds work gloves with a focus on safety, comfort, dexterity and durability. For this article we will focus on durability. This is achieved through unique glove

gloves about once a week. This style remains very common in procurement systems across the US. However, with Youngstown's durability we were able to flip the script.





## 2. Minimizing Machine Operation

The manufacturing process of work gloves involves intricate machinery, consuming energy and resources. However, when gloves last 2 to 3 times longer, the need for frequent production cycles decreases. This leads to a notable reduction in machine operation, contributing to lower energy consumption and a more sustainable manufacturing process. The positive environmental impact extends beyond the product itself, influencing the entire production chain.



## 3. Cutting Down on Shipping, Invoicing, and Packaging

The extended lifespan of our work gloves also has a ripple effect on the logistical aspects of the supply chain. Fewer replacements mean less frequent shipping, reducing the carbon footprint associated with transportation. Additionally, less invoicing and packaging are required for replacements, contributing to a streamlined and eco-friendly distribution process. This holistic approach to sustainability considers not just the product but the entire lifecycle and associated operations.

## 4. Promoting a Circular Economy

Durability aligns with the principles of a circular economy by emphasizing the importance of product longevity and reduced waste generation. Instead of perpetuating a linear “take, make, dispose” model, our durable work gloves encourage reuse and

extended product life. This shift towards a circular economy is fundamental to achieving long-term environmental sustainability goals.

## 5. Changing Perspectives on PPE and Sustainability

The connection between durability in personal protective equipment (PPE) and sustainability is often underestimated. By highlighting the environmental benefits of long-lasting work gloves, we aim to reshape perceptions within the industry. Sustainable choices in PPE not only protect workers but also contribute to broader ecological conservation efforts.

In conclusion, the correlation between durability and sustainability in work gloves goes beyond the surface. Our gloves, with a lifespan 2 to 3 times longer than competitors,

lead to a substantial reduction in waste at various stages of production and usage. From cutting down leather consumption to minimizing machine operation and streamlining logistics, the impact is far-reaching. Embracing durability in PPE is not just a choice for product quality but a conscientious decision towards building a more sustainable and environmentally responsible future.



**#1 IN DURABILITY**

# PREVENTING SIFS USING SOFTWARE TO MEASURE AND MANAGE SAFETY

By Utilsoft

Through collaborative efforts, the electric power industry has exhibited a strong commitment to serious injury and fatality (SIF) reduction. Utilizing an evidence-based approach to improve safety management is essential to the success of this pursuit. Safety activities and associated metrics need to capture information that reflects the true performance of a company. What's more companies need to use tools that allow the capture of information easily, accurately and consistent with current industry protocol. Software usually provides the answer.

To ensure a company is on track and using the proper tools for managing safety performance it's important to review the data areas that will be collected and compare it with the software to be used. This may not be easy. Consider the progress EEl is making with its SIF initiative and development of new industry metrics. A software provider selected must be familiar with advancements in the industry and its software must be flexible enough to adapt to collection of that information. It is critical that EEl members discuss the SIF Precursors, Leading Indicators (Job Briefings, Job Hazard Analysis and Observations), High Energy Control Assessments (HECA) monitoring and Lagging Measures (SBLI) with their software provider and plans to implement them. That provider should be knowledgeable of the same and be prepared to meet the need.

Company practices and culture

must also be considered. How is field information currently gathered and by whom? How will new measures be integrated or exchanged with previous ones used? What systems (web or mobile based, iOS or Android) and hardware are employees accustomed to using?

Finally, the software needs to solve problems faced at various levels on a daily basis. Safety Managers, HR staff, Journeyman Linemen and C-Level executives look for specific information to help them target areas for safety improvement. The software used should replace manual processes around job briefings, safety observations, and monitoring and provide customized reports that can be scheduled and delivered to any member of management on the day they need them.

UtilSoft developed a safety and operations software platform called Field Operations & Safety Management System (FOSMS) for the utility industry. FOSMS allows the utility to conduct customized Job Briefings, Observations and manage their Job Safety Analysis information while storing pictures and signatures electronically. It replaces manual processes and delivers customized reports. As an EEl Industry Partner, UtilSoft is part of the Power to Prevent SIF initiative and monitoring the progress of the Future of Metrics. It's software can meet the growing need and offers a wide variety of modules for utility use.



**UtilSoft**  
Safety & Operations

The following are a few of the modules in the FOSMS suite.

## Products & Modules

- Job Safety Analysis/How to
- Job Briefing (Custom to Business Units)
- Observations (Employees)
- Observations (Contractors)

Other modules help record Personal Tool, Facility, Truck Tool, Vehicle First Aid, DOT, Forklift, Vehicle Safety, Trailer and Assorted Equipment Safety checks. And software is available for tracking Field Hazards, Certification/License Management, Training and Incident/Accident Reporting.

Please do not hesitate to let us know about any ideas or metrics that will promote a safer workforce to reduce SIFs. For more information, or to schedule a demo, please contact Chris Sciabica at (678) 689-0943 or (678) 777-4160.

# SAVING LIVES TOGETHER ONE AED AT A TIME

By [SafetyMed](#)

Every year in the United States, more than 350,000 people have a cardiac arrest outside of a hospital according to the American Heart Association. Over 10,000 of those people are at work when they suffer a sudden cardiac arrest according to the U.S. Department of Labor Occupational Safety and Health Administration (OSHA).

When someone is in cardiac arrest, they need CPR immediately. Many people also need an electric shock (called defibrillation) to restart their heart and improve their chance of survival. Automated External Defibrillators (AEDs) provide those shocks.

- Studies show that early CPR and AED use can double or even triple a person's chance of survival.

- [SafetyMed](#) has partnered with an EEI member for over 13 years and we have saved a total of 44 lives together with the use of AEDs as of February 2024!

Experiencing a workplace Heart Attack called a Sudden Cardiac Arrest can be a traumatic experience, and often there's no clear answer as to what the next steps are after using an AED defibrillator in the workplace. Whether you deployed your AED defibrillator inside an office or retrieved your AED outside from a bucket truck, SafetyMed is here to help you. No matter what or where your situation is, SafetyMed will guide you through the AED post-event data retrieval and redeployment of your AED back into service at your workplace.

## What to do after you use your AED?

SafetyMed, an approved EEI Industry Partner, is excited to announce to all EEI members our **FREE AED Post-Event data download service.**

1. Contact [SafetyMed](#) by phone at: (800) 398-8911 or by email at [dereck@safetymed.com](mailto:dereck@safetymed.com) to obtain an AED event number.
2. Ship your AED to [SafetyMed](#) so a trained technician can perform the data retrieval on your device. SafetyMed supports all AED models, so it does not matter what AED you have to perform the data retrieval.
3. [SafetyMed](#) will perform a 10-point inspection of the AED to make sure your device is working properly so you can place the AED back into the workplace.
4. [SafetyMed](#) will ship the AED back to you free of charge ready for re-deployment, along with a detailed digital event report in PDF format to document the event for your company.
5. Need to replace AED pads and batteries contact us at [SafetyMed](#).

## Heart Safe Workplace

Over the past 13 years, [SafetyMed](#) has successfully implemented sudden cardiac arrest programs with EEI members and have placed thousands of AEDs



throughout the USA. The chances of surviving a cardiac arrest fall fast for every minute that defibrillation is delayed and the average EMS response time in the United States is over 10 minutes. So, to ensure that someone in cardiac arrest receives help ASAP, rescuers need to be able to reach an AED within a 3- to 5-minute round-trip from anywhere at the worksite. This means that it should take no more than 1½ to 2½ minutes to reach an AED and 1½ to 2½ minutes to return to the emergency site.

### Success Story

Lineman climbed 20 feet up a pole and got hung up in a secondary when one of his elbows came into contact with an energized wire. The crew had to climb the pole to rescue the Lineman as he was unconscious and blue in the face. When he was brought down, CPR was administered, and an AED was utilized to deliver a defibrillation shock and the

Lineman restored consciousness and his life was saved!

### Train Employees in CPR

To help employees become familiar with AEDs, consider having an [AED Trainer](#) device and enrolling in a [CPR class](#). The AED trainer gives hands-on experience that boosts confidence for using a real AED in an emergency. There are over 30 different AED models on the market. The great news is [SafetyMed](#) supports all AED models so it does not matter what AED you have at your workplace; we can support you!

AEDs are simple enough for anyone to use, but having the proper training in CPR and AED use can make the difference between saving an electrical worker's life or not during a cardiac arrest emergency. [SafetyMed](#) can train your employees nationwide in all 50 states with both onsite and online CPR and AED training.



### For More Information

Learn more about training your workforce with [CPR, AED and First Aid Training](#) by visiting us at [safetymed.com](http://safetymed.com). For more information, please contact Dereck Dietrich at (713) 412-0911 or email at [dereck@safetymed.com](mailto:dereck@safetymed.com).

## DUPONT HELPS PROTECT AGAINST ELECTRIC ARC DANGERS WITH ARC-MAN® TESTING

By [DuPont](#)

While Nomex® fiber is widely recognized as a leader in FR protection, the DuPont™ Arc-Man® testing facility in Switzerland is advancing the science of protection for workers exposed and at risk to arc flash. Located near the DuPont European Technical Center, this remarkable testing facility has been operating for over 20 years, and is only one of four open-arc technical laboratories in the world that

follows current international testing guidelines.

Arc-Man® uses test equipment developed by DuPont to evaluate the thermal effect of an electric arc on fabrics and garments by measuring the arc thermal performance value (ATPV) and energy break-open threshold (EBT) in simulated open electric arc incidents according to IEC/EN 61482-1-1. Arc-Man® can also

perform the box test according to IEC/EN 61482-1-2.

### What Is an Electric Arc?

An electric arc is a potentially deadly risk that workers in utility, chemical, refinery and other hazardous industrial jobs face every day. Generating very bright light and an intensive heat up to 30,000°C, an electric arc is a continuous electric discharge of high current between conductors.



Without proper Personal Protective Equipment (PPE) for protection against the thermal effect of an electric arc, workers are at risk of suffering severe burn injuries or even death. An electric arc also generates other potentially severe hazards such as a high-pressure wave, noise and toxic fumes.

### How Does Arc-Man® Work?

Arc-Man® is a collection of rotating machines, alternators and generators that create a very high level of current that enables the facility to be totally

disconnected from the electrical grid. A 20-ton rotor allows for the accumulation of kinetic energy that is transformed into electrical energy.

The sample—either a protective fabric on a panel or a protective garment on a mannequin torso—is placed in the center of the cage and exposed to energy levels of up to 70 cal/cm<sup>2</sup>, simulating what could be created during an actual electric arc flash. It is important to note that continuous exposure to 1.2 cal/cm<sup>2</sup> generated by an open arc is enough to cause a second-degree burn on human skin.

This open arc test determines the limit of the incident energy to which a fabric or garment provides protection against the thermal effects of an electric arc.

### Arc-Man® Provides Vital Data

Arc-Man® helps PPE manufacturers assess and compare the protection that various garments provide against the thermal effects of an electric arc. It also shows the impact that different materials, such as sewing threads, logos and reflective tape, can have

during an arc flash. The testing unit provides vital data on several key parameters that help manufacturers to optimize their fabrics and garments to protect against the heat of an electric arc, helping to provide enhanced protection for industrial workers.

With its real-world simulation demonstrations, which can be viewed from a specially equipped conference room on site during testing or watched later online, Arc-Man® also helps raise awareness on the devastating effects that an electric arc can have on workers if they are not properly protected.

See Arc-Man® in action [HERE](#) and learn more DuPont solutions for Arc Protection [HERE](#).



• Spring 2024 •

**SIF PREVENTION  
INDUSTRY PARTNERS  
NEWSLETTER**

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