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ARC FLASH ILLUSION OF SAFETY

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ARC FLASH ILLUSION OF SAFETY: STOPPING COMPLACENCY FROM BEING A KILLER

Risks are part of everyday life. We cross streets, drive cars, climb ladders and operate all kinds of machinery without a second thought.

Thousands of people die of incidents involving simple activities each day, but as individuals, we choose to believe it won't happen to us because otherwise, we wouldn't leave the house.

The same inbuilt optimism bias that helps us navigate daily life can make employees complacent about Arc Flash events. Deaths relating to Arc Flash injuries and general workplace incidents are rare - according to the Health & Safety Executive (HSE), 135 workers died of workplace injuries in 2022/23 - and so employees think 'it will never happen to them'. But even if Arc Flash events are uncommon in your workplace, they happen multiple times a day across the UK and can be lethal.

2/3 OF ARC FLASH INCIDENTS ARE AS A RESULT OF HUMAN ERROR.

Whatever importance level your employees place on protecting themselves against an Arc Flash incident, it needs to be your top priority. And no one wants to be the person delivering bad news to an employee's family, especially when Arc Flash-related deaths can be avoidable with correct PPE.

This paper explores how to dispel the Arc Flash illusion of safety and stop complacency from being a killer.

ARC FLASH AWARENESS: UNDERSTANDING THE RISKS & SEVERITY

In the UK, the HSE states around 1,000 non-specific workplace electrical incidents are reported each year, with around 25 people dying each year from their injuries.

In the US, according to Industrial Safety and Hygiene News, 30,000 Arc Flash incidents are reported each year, resulting in 7,000 burns, 2,000 hospitalisations and 400 deaths.

These figures are not huge in relation to the general population, leading many to believe the risks are negligible. But equally, anyone working near electricity can become one of these statistics.



UNDERSTANDING THE RISKS & SEVERITY *CONTINUED...*

An Arc Flash is an unpredictable, extreme release of energy and heat (up to 35,000°F, or almost four times hotter than the sun's surface) from an electrical explosion or discharge that travels through the air.

Unlike an electric shock, in which a person becomes part of the circuit, an Arc Flash resembles a bomb detonation, where huge amounts of heat and pressure are blasted directly at the face and torso.

If it happens to your employees, it will be over before they realise what's happening - and not wearing appropriate PPE increases the risks of severe internal and external burns or death. Common or not, a good rule of thumb with Arc Flash events is to hope for the best and prepare for the worst.

COMMON ARC FLASH INJURIES



Internal and external burns



Ruptured eardrums



Clothing burnt onto the skin



Temporary and permanent blindness

IF IT HAPPENS TO YOUR EMPLOYEES, IT WILL BE OVER BEFORE THEY REALISE WHAT'S HAPPENING - AND NOT WEARING APPROPRIATE PPE INCREASES THE RISKS OF SEVERE INTERNAL AND EXTERNAL BURNS OR DEATH.

ARC FLASH PROTECTION: SERIOUS BUT RARE, SO WHY BOTHR WITH ARC FLASH PPE?

The late Queen Elizabeth once said, "I have to be seen to be believed," understanding that without visibility, she'd fade from the public's consciousness.

The same is true of Arc Flash events. Respondents to a recent survey said they could "recall very few instances of Arc Flash explosions over literally thousands of jobs and consider it a rare event."

When employees don't regularly experience things first-hand, they get complacent. If they've gotten away with something repeatedly, they think they always will. Managers, too, said they were "not aware of their organisations being fined for inadequate safety precautions." But just because it hasn't happened yet, it doesn't mean it won't. You don't have to be in the unlucky minority; just use good-quality Arc Flash PPE.

Workers need workwear, so why not make it safe? Over its lifetime, premium PPE is no more expensive than budget PPE - wearing, washing, and performing better and for longer. The critical difference from ordinary workwear?

**WHEN WORN
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IN AN UNCOMMON BUT
UNPREDICTABLE ARC
FLASH EVENT.**

EDDIE'S STORY: ARC FLASH PPE IN ACTION

In the case study below, Eddie explains how Arc Flash PPE helped to save his life:

Eddie Smith, an experienced Clancy Docwra team leader working close to a railway line, used a jackhammer to break up tarmac. Eddie's hammer hit a 120 CNE 3-phase low voltage cable laid incorrectly, causing an Arc Flash event.

“WHEN THE ARC FLASH HIT ME, IT HAPPENED SO FAST, AND THEN EVERYTHING WENT INTO SLOW MOTION. ALL I COULD THINK OF WAS MY FAMILY AND LITTLE BOY.”

I had burns all over my hands, down my neck, inside my mouth, and around my face, but the PPE I wore prevented damage to my chest, legs and under my arms. My body was completely fine.

One of the things you think is: 'It's never going to happen to me; I know what I'm doing in this game; I've been in it for years.' Obviously, it's a massive shock to you and your family when the worst happens - and it doesn't just affect you but everyone around you.”

Eddie was one of the lucky ones; his supervisor understood the importance of Arc Flash PPE, potentially saving his life and lessening the severity of his injuries. It prevented him from becoming just another statistic.

“I saw the clothing he had on that day,” adds Operations Manager Jim Eldred. “And we need to get this out there: It's not about money. It's not about how many jobs you do in a day. It's how you do those jobs safely.

You must wear PPE. If not, you could be dead. Just one cable strike is all it takes.

Every day, I send my guys out to work in a high-risk job. It's not just their safety, health, and well-being at stake; it's mine, too. It's everyone's. So, we've started thinking about it not as a job but as protecting one another as a way of life. I can't tell you how important it is to make sure you're wearing your full PPE. It's comfortable and lightweight, and I can't see why people wouldn't wear it.”

“IF I HADN'T BEEN WEARING MY PPE, IT WOULD PROBABLY BE A DIFFERENT STORY.”

EDDIE SMITH



ELIMINATING PPE COMPLACENCY: WHAT TO DO IN THE WORKPLACE

There are others with similar stories to Eddie's. Mitchell also experienced a cable strike at work.

After a huge flash and a bang in his face, he was relieved to find there were no marks under his PPE, which had protected his torso. The minor injuries to his throat area could have been much worse without it.

Like Eddie, Mitchell described how "getting home to his family at the end of the day" motivated him to wear PPE to stay safe.

Despite understanding the risks, many workers and employers use inadequate or no PPE at all for basic reasons, including:

It's more expensive than non-protective clothing

It's uncomfortable, so it gets quickly discarded or adjusted (sleeves rolled up, buttons undone, etc.)

It's combined (incorrectly) with low-quality base layers, reducing its overall effectiveness

It's not a requirement of other employers

They've always 'got away without it' and think they always will

Any upfront savings on Arc Flash PPE are a false economy when it comes down to a gamble with people's health and safety.

The higher initial outlay for premium PPE is worth the cost because it retains its performance, wearability, and comfort over long periods. If your workforce is comfortable in their PPE, they're more likely to wear it correctly for longer - and if it's so comfy they don't want to replace it without a fight, even better. Comfort = safety, but if your team is happy in their PPE without you having to hammer the safety message home, it creates a win-win scenario.

THE HIGHER INITIAL OUTLAY FOR PREMIUM PPE IS WORTH THE COST BECAUSE IT RETAINS ITS PERFORMANCE, WEARABILITY, AND COMFORT OVER LONG PERIODS.

MITCHELL'S STORY



BUILDING ARC FLASH AWARENESS INTO OVERALL HSE POLICIES

In line with the Personal Protective Equipment at Work Regulations 2022, all employers should provide appropriate PPE (and training in its usage) wherever there is a health and safety risk other means cannot adequately control.

Even with the best preventative measures, Arc Flash incidents are not avoidable. If you're in power generation, utilities, petrochemicals, rail or industrial electrical, your workforce is at a high risk of Arc Flash exposure.

For example, road digging is a high risk, says one contractor in a recent survey: "You can carry out all the research and know which pipes and cables should go where, but when you come to dig, something else often appears."

A construction worker says: "The biggest risk situation in all work environments is where the nature of a planned, risk-assessed task changes when the job starts. The contractor tries, with the best intentions, to rectify the situation, but they don't stop to re-evaluate and reassess the risk. Their failure to identify the need for additional PPE can result in a major incident and even fatalities."

A utilities customer adds: "You should never get complacent about electrics. You can't smell it; you can't see it. You must work very carefully and stick to the process and plan."

Upfront planning of this nature is only consistent if it's policy driven. Building Arc Flash awareness into your HSE policies puts protective equipment at the forefront of strategy and budgetary conversations. Rather than being an afterthought, it drives workplace safety culture and positive change. Company-wide PPE buy-in is a powerful health and safety tool in the workplace.

BUILDING ARC FLASH AWARENESS INTO YOUR HSE POLICIES, PUTS PROTECTIVE EQUIPMENT AT THE FOREFRONT OF STRATEGY AND BUDGETARY CONVERSATIONS.



COMPANY PPE SAFETY CULTURE: EVERYONE'S RESPONSIBILITY

Most Arc Flash incidents result from human error. So, with the right policies, knowledge, and training, employees know the risks and are less likely to put themselves in harm's way.

Adopting a solid safety culture, where everyone's responsible, encourages PPE adoption as a matter of course.

This contractor states: "With the right PPE, we tend to find the risk to the individual is very low nowadays. Site fatalities are very few and far between." Arguably, Arc Flash PPE is a victim of its success in the best possible way.

If the prolific adoption of Arc Flash PPE cancels out Arc Flash fatalities almost entirely, will this create an even greater illusion of safety? Possibly. Integrating it into your HSE policies and company safety culture is the best way to maintain a heightened awareness and continually educate employees on the risk of something potentially fatal yet intangible.

As Eddie's supervisor, Jim Eldred, said, when you instill the need to protect each other as a way of life, there's a shift in thinking workplace-wide. Safety should be second nature to your workforce, not left to chance.

PROCURING THE RIGHT PPE FIT FOR YOUR BUSINESS

As a wider variety of PPE enters the market, lower-quality garments can ultimately compromise safety.

At ProGARM, the protection in our garments is built in, not sprayed on, ensuring they can be washed repeatedly (tested up to 50 washes) without losing their effectiveness.

Of course, other risks are more prevalent in industries like construction than Arc Flash incidents. If you're in one of these industries, your team must feel confident their PPE is comfortable, lightweight, and durable enough to ensure safety in your specific environments and protect against Arc Flash events. For example, layering systems provide additional all-day protection against weather and site conditions.

Your procurement team must know the differences in quality that make premium Arc Flash PPE worth investing in to make an informed choice about your workforce's safety. For example, teams working with water and waste may need more frequent equipment replacement, regardless of the garment's lifespan on paper. An experienced PPE provider can assess and find the best solution for your needs. Selecting the right fit PPE provider is not just about ergonomics.

**ADOPTING A SOLID SAFETY CULTURE,
WHERE EVERYONE'S RESPONSIBLE,
ENCOURAGES PPE ADOPTION AS A
MATTER OF COURSE.**

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IN SUMMARY

When something dangerous like an Arc Flash event happens rarely, it creates an illusion of safety.

However, an "it will never happen to me" attitude will not save your employees if they're unlucky enough to be involved in an incident. What will save them is high-quality Arc Flash PPE worn correctly. And that's down to you.

If the cost is coming between you and your team's safety, why not speak with one of our advisors? We find the right fit for teams with varying requirements.

**IF YOU'D LIKE MORE INFORMATION
AND WANT TO STAY UP-TO-DATE WITH
WHAT'S CURRENT IN ARC FLASH
SAFETY, YOU CAN FOLLOW US ON
SOCIAL MEDIA OR CHECK OUT OUR BLOG.**

**SEE OUR CATALOGUE FOR
THE COMPLETE RANGE
OF ARC FLASH & FLAME
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