



ProGARM[®]
PROTECTING LIVES

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FOREWORD

ARE INDUSTRIES LEFT IN THE DARK?

When it comes to industrial safety all of us understand the importance of wearing a hard hat, protective gloves or steel toe-capped boots. In fact, most employers wouldn't dream of letting their teams on-site without adequate protection, and workers themselves are more than clued up when it comes to the latest safety requirements.

However, the same can't be said when it comes to the potentially fatal risk posed by Arc Flash. Hotter than the sun and creating a shrapnel explosion faster than a bullet, an Arc Flash occurs when an electrical discharge travels through the air and releases an intense burst of energy. This flash can cause serious harm to anyone caught by it, not least as the explosion can create red hot molten metal debris. The risk is very real and can be life changing or even fatal for operatives working, not only in a high, but also in a low voltage environment. Sectors most at risk of an Arc Flash incident include wind energy, rail, utilities, power generation, civil engineering and construction, petrochemical and industrial electrical workers.

As the UK's leading Arc Flash Protection specialist, ProGARM have worked in conjunction with the British Safety Industry Federation (BSIF) to commission a new study into Arc Flash safety and awareness of its risks across the UK.

The objective of this paper is to highlight the worrying lack of knowledge surrounding the dangers of Arc Flash and to build awareness around the need to implement effective Arc Flash protection.

In the first ever report of its kind, the study sought views from 200 UK industry professionals across the rail, power generation, industrial electrical, wind energy, utilities and petrochemical industries. It has been commissioned to help us better support you and to try and understand the current knowledge levels across the UK in relation to Arc Flash health and safety.

I know you'll find this report valuable, and remember, safety doesn't happen by accident.

OVERVIEW

ARC FLASH EXPLAINED

Most of us in industries dealing with electrical safety are familiar with an electrical arc, but its severity and danger is often underestimated.

An electric arc, also known as an arc discharge, occurs when an electrical discharge or short circuit moves through the air. Voltage spikes, worn connections, cable strikes or gaps in insulation are just some of the reasons that an Arc Flash occurs. A flash of intense energy is the result.

The energy expelled by an Arc Flash event can be deadly, with temperatures reaching up to 35,000°F or more than 19,000°C. It goes without saying; this can burn clothing and human skin within fractions of a second, even if the operative is situated five or six metres away from the Arc Flash event.

An Arc Flash can result in an explosive pressure wave that can throw workers across the room and a sound blast that can rupture eardrums. It is also accompanied by a bright flash which can cause temporary or even permanent blindness.

Whilst prevention must always be the first line of defence against an Arc Flash, it is also important that businesses also look at how best to protect their team with the right Arc Flash and flame resistant protective garments. When someone is exposed to an Arc Flash incident, serious burns and other potentially life-threatening injuries can be minimised and even avoided by effectively utilising Arc Flash protective garments.

PPE forms the last line of defence for a system of safe working and the assessment and reduction of risk. We cannot, however, underestimate the risk of electrical faults and chances of human error. Many lives have been saved because of wearing the correct form of Arc Flash garments and PPE.

TONY ARNETT
MANAGING DIRECTOR, PROGARM

*A Hidden Killer – Exposing the risks and awareness of Arc Flash incidents in the UK // March 2018

TREND 1

HIGH AWARENESS AND FIRST-HAND EXPERIENCE

84% claim they understand the risks an Arc Flash poses
57% admit they, or someone they know has suffered from an Arc Flash
78% don't understand the correct government safety guidance

THE ISSUE

Our research revealed both high levels of Arc Flash awareness (84% claimed they understood the risks of this type of electrical explosion), as well as an alarmingly high rate of first-hand experience, with 57% admitting they or someone they work with has suffered an Arc Flash strike.

Perhaps unsurprisingly, it was the utilities, rail and power generation sectors most likely to report Arc Flash incidents, though all other sectors were also well represented.

However, the research highlights an apparent gap between the awareness of Arc Flash safety and an understanding of the appropriate legislation that protects workers against it. 78% of respondents didn't know the correct government safety guidance (HSG47: Avoiding danger from underground services) that would cover working when an Arc Flash incident is a risk when breaking ground.

THE SOLUTION

As with all on-site health and safety matters, prevention is better than a cure and is the most effective way to stay safe. To ensure the correct measures are taken, education is key at all levels in an organisation. We'd encourage those that could be impacted by an Arc Flash incident to further train on how to implement safe working practices to reduce the chances of an Arc Flash incident.

Training a workforce on appropriate PPE is also essential to ensure optimum safety levels. We can support teams in accessing the correct training to ensure a whole workforce understands the dangers of Arc Flash and in turn how to protect themselves using PPE as a last line of defence. This includes everything from selecting the most appropriate PPE, to ensuring operatives are wearing it correctly to maximise protection. An unzipped jacket won't deliver anywhere near the protection that the same garment properly fastened would.

Working with a specialist such as ProGARM to support with the implementation of Arc Flash PPE will ensure that workers are kept as safe as possible when working in high risk environments.



TREND 2

CALLS FOR REVISED GOVERNMENT GUIDELINES

80% believe guidelines are far too ambiguous
90% also stated a pressing need for the Government to develop more specific guidelines

THE ISSUE

Of those who were familiar with HSG47, four fifths (80%) believed it is far too ambiguous when it comes to recommending the appropriate safety clothing to protect staff.

The vast majority of all respondents (90%) also believed that there is a pressing need for the Government to develop more specific guidelines or legislation to better recommend safety measures addressing Arc Flash, as well as the most appropriate clothing to help protect those working in an Arc Flash risk environment.

THE SOLUTION

With such drastic consequences, you would be forgiven for expecting strict legislation to be in place to protect people from Arc Flash, especially given the life changing and potential fatal consequences of getting it wrong. However, it's not as clear cut as this.

While HSG47 goes some way to address the risks posed by cable strikes, it leaves questions unanswered. If you feel unsure, it's essential that you liaise with a specialist who can share their knowledge.

As such, everybody concerned with Arc Flash safety must work together to further champion work place protection in this area. Here at ProGARM we already work with employers and specialists across a range of industries to share the benefits of our experience, insight and expertise when it comes to supporting with Arc Flash protection and education.

There are a range of specialists (including ProGARM) who will provide free guidance on Arc Flash safety. We'd recommend those who require support in this area to actively seek support to ensure they and their teams are fully protected.



TREND 3

LACK OF GUIDELINES FOR EMPLOYEES

25% of employers believe it is the sole responsibility of the individual employee to protect themselves

50% consider it is the employee's responsibility to self-educate about Arc Flash through a handbook or their own research

THE ISSUE

Perhaps the study's most worrying finding is that 25% of employers believe it is the sole responsibility of the individual employee to protect themselves against Arc Flash. Not only that, but 50% consider it is the employee's responsibility to self-educate about Arc Flash through a handbook or their own research.

From most participants, there is also confusion over who in an organisation is responsible for minimising the risk of an Arc Flash, with answers ranging from the appropriate industry body (35%), the client commissioning a project (40%), the Government through legislation (37%). This stems from the lack of detailed guidance on Arc Flash risks, however this could be placing both your employees and your business at risk.

THE SOLUTION

It is essential for employers to ensure their own health and safety policies address the risks posed by an Arc Flash incident.

If you're an employee and you feel there is a risk, raise this with your employer. Ask them if they are aware of the life changing threat an Arc Flash incident could pose. With a lack of clear guidance, it's not surprising that there's confusion across the board, however help is at hand. If the expertise does not exist within your organisation, there are a number of different options to ensure the safety of your team.

Expertise can be hired in or specialists can work with your company on a consultancy basis to help implement effective policies for your team. For those working in industries at risk of an Arc Flash incident, then we would urge them to develop specific Arc Flash safety procedures. This would include building on the standards set by HSG47, minimising exposure risks and advising on best practice when it comes to appropriate PPE. Safety clothing considerations should include when Arc Flash garments are required, what those Arc Flash garments should be and how they should be worn correctly.



25%

OF EMPLOYERS BELIEVE IT IS THE RESPONSIBILITY OF INDIVIDUAL EMPLOYEES TO PROTECT THEMSELVES AGAINST ARC FLASH



50%

CONSIDER IT TO BE THE EMPLOYEE'S RESPONSIBILITY TO SELF-EDUCATE ON ARC FLASH

CONCLUSION

COMMENTING ON THIS RESEARCH, ALAN MURRAY, CEO OF BSIF, SAID:

“Here at the BSIF we are aware of Arc Flash, and it’s something we know our members are also concerned by. We do all we can to promote safer working practices for the UK industry, and that’s why we’re fully behind this survey.”

Arc Flash is a very real health and safety issue affecting many industries and sectors. However, to-date there has been inconsistent reporting into the numbers impacted by Arc Flash incidents. Many mis-label Arc Flash incidents as electric shock and there isn’t a broad understanding or easily accessible resource providing knowledge into this potentially deadly electrical explosion. This makes it very difficult for businesses and specialists alike to get a clear picture into the size and scale of the problem.

That’s what makes this research study so fascinating. One thing’s clear; more needs to be done. The introduction of clear Governmental policies is essential. In the meantime, employers have a duty to support their work force by educating their teams about the risks. While first and foremost, education, risk mitigation and prevention should be the focus, appropriate protective clothing is also crucial as a last line of defence to save lives.

As one of the only Arc Flash garment specialists in the UK, we work tirelessly at ProGARM, delivering life-saving, cutting-edge protective garments developed with the specific requirements of the end-user in mind.

*A Hidden Killer – Exposing the risks and awareness of Arc Flash incidents in the UK //
March 2018

ABOUT THE AUTHORS



TONY ARNETT

Tony Arnett is Managing Director of ProGARM – a company that protects lives through the manufacture and supply of quality Arc Flash protective garments. As a family business owner,

Tony has spent years refining and developing ProGARM's offering to ensure the company provides critical Arc Flash PPE to industries across the UK and Europe.

With almost ten years of experience, Tony's pioneering business model sees the most innovative products in Arc Flash being delivered to industries continuously. From comfort to leading edge features, ProGARM is blazing a trail in product development, and in turn helping to ensure the safety and protection of the UK's workforce in wind power, construction, utilities, power generation, petrochemical, rail and engineering.



ALAN MURRAY

Alan started in his role as CEO at the BSIF in January 2014. An experienced senior manager, Mr Murray has worked in a number of organisations including Marigold, MG Safety and Scott Safety.

Alan's experience over the years has brought him into close contact with manufacturers, users, BSIF members and other industry stakeholders, meaning he boasts experience of both the manufacturing and distribution sectors.

ABOUT PROGARM

ProGARM is one of the UK's only Arc Flash garment specialists and is dedicated to protecting lives through the manufacture and supply of exceptional quality Arc Flash and flame-resistant safety clothing.

Based in East Yorkshire, ProGARM innovates its PPE to save lives - what offered the ultimate protection yesterday may not be the protection required today.

The ProGARM brand has continually been first, with ever-evolving fabrics, new garments and more garment features to help you and your team to undertake your work more safely and more effectively. We focus on continual improvement with our Arc Flash and flame-resistant clothing and as a company we are constantly developing the next new concept in order to protect its customers - the wearers. The fabrics have been developed to be the most comfortable in the market place, while offering the levels of protection required from heat & flame, Arc Flash and static.

When lives are at stake ProGARM ensures that those at risk of an Arc Flash need never compromise on:

- **Safety and protection**
- **Quality and durability**
- **Comfort and innovation**

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