

# 2ND ARC FLASH & ISOLATION SAFETY CONFERENCE

## Featuring Keynote Speakers:

### HUGH HOAGLAND

International arc flash testing and electrical safety expert  
Founder of ArcWear  
Managing Partner at e-Hazard



### IAN BITTERLIN

CEng PhD BSc (Hons) BA  
Consulting Engineer & Visiting Professor, University of Leeds



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## WHAT YOU WILL GAIN FROM THIS CONFERENCE:

- Hear local and international case studies detailing the latest arc flash mitigation strategies and solutions
- Learn about UK and EU standards developments in arc flash
- Learn about electrical safety statistics and the implications for you
- Learn the importance of lockout/tagout systems and their fundamental applications
- Learn about standards including NFPA 70E 2015, EN 61482-1-2, IEC 61482-1-2 and IEE1584
- Understand how to achieve a compliant and electrically safe work place
- Learn how to provide arc flash training for your staff
- Detail the steps to perform an arc flash hazard analysis
- Clearly understand what an arc flash is and the potential injuries that can result
- Understand why people are getting hurt, what is being done and preventative methods
- Learn how to avoid arc flash problems in high availability data-centre facilities
- The importance of safe isolation in electrical power systems
- Hear a local case study on how a £3.12 billion food manufacturing company tackled arc flash

## WHO SHOULD ATTEND:

- Electricians
- Electrical Engineers
- Electrical Technologists
- Electrical Engineering Managers
- Power Line Technicians
- Power System Electricians
- Instrumentation Mechanics
- HVAC Technicians
- Elevator Mechanics
- Cathodic Protection Technicians
- Engineers and Managers
- Training Manager or Coordinators
- Supervisors
- Operations Managers
- Power Plant Operators (coal, natural gas, nuclear, hydro, wind and solar)
- Maintenance Managers
- Government OH&S Managers & Inspectors
- OH&S Managers
- OH&S Professionals
- OH&S Risk Assessment Analysts
- Process Safety & Loss Prevention

**10th & 11th  
May 2017**

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## FOR MORE INFORMATION

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# INTRODUCTION TO THE 2<sup>ND</sup> ARC FLASH & ISOLATION CONFERENCE




Arc flash is a topical issue in the electrical engineering community as many people in the UK receive severe and debilitating burns each year. Technology and safety procedures have significantly reduced most other forms of electrical injuries; however incidents related to arc flash have surfaced as one of the leading causes of injury and even death to workers.




In addition to arc flash incidents, electrical workers in the UK suffer electric shock and burn injuries as a direct consequence of electrical contractors and others not implementing safe isolation procedures. In electrical engineering, isolator/disconnect switches which can be secured in the OFF position, are commonly used to make sure an electrical circuit is completely de-energised for maintenance or service. Other devices such as fuses or mcbs with appropriate locking features may also be used. These switches and devices are commonly installed in electrical distribution and

industrial settings for the purpose of safe isolation. Before working on or near high energy electrical sources they should be isolated, but this is not always possible. In most countries it is now illegal to work 'live' unless prescribed protective measures are taken. That does not stop workers from knowingly and unknowingly taking risks and carrying out live work, sometimes resulting in consequential arc flash. The hope is that the allotted personal protection equipment (PPE) when properly worn will be able to withstand the arc flash energy, but this is not always the case.

In some cases arc flash, PPE is being extensively promoted as the solution to any problem but as the legislation clearly sets out, the way to tackle hazards such as arc flash is firstly to eliminate the hazard and turn off the power. If this is not possible then distancing the worker from the hazard is the next option, and if this is not possible only then providing appropriate PPE as a measure of last resort.

## CONFERENCE DAY ONE – 10<sup>th</sup> May 2017

8.00am	<b>Registration</b>	
8.15am	<b>Opening Address</b>	
8.30am	<b>Michael's Story – An Isolation Safety Tragedy That Could Have Been Prevented</b>	
Session 1	<b>Louise Taggart</b> – Workplace Safety Speaker	
<b>FEATURE SPEAKER</b>	Michael Adamson was an experienced spark, who died on 4 August 2005 as the result of an electrical incident at work. He was only 26 years old and was engaged to be married. Like so many work-related deaths, it was an incident which could and should have been prevented. Motivated by the need to stop this from happening to others, Michael's story is told by his sister Louise. She talks through the catalogue of errors in health and safety management – any one of which would have been serious enough on its own – which accumulated to prove fatal.	
9.15am	<b>Avoiding Arc-Flash Problems in High Availability Data-Centre Facilities</b>	
Session 2	<b>Professor Ian Bitterlin</b> – Consulting Engineer, Critical Facilities Consulting Ltd.	
<b>KEYNOTE ADDRESS</b>	A review of the concurrent maintainability that high availability data-centre require to avoid maintenance shut-downs and how that impacts on safe working practices. Topics include power architecture, critical load requirements, static transfer switches and the options for live-working in the UK.	
	<b>Morning Tea – 10.15pm</b>	
10.45am	<b>Lockout/Tagout: An Integral Part of Electrical Safety</b>	
Session 3	<b>Lee Emmett</b> – Lockout Tagout Consultant, Reece Safety	
	A fundamental but often overlooked area of health and safety is implementing a lockout/tagout system within a facility. Thousands of accidents and fatalities each year are avoided through proper preparation and planning for shut downs but unfortunately they do still occur. Our presentation will discuss the following: <ul style="list-style-type: none"> <li>• Why does lockout/tagout matter?</li> <li>• When do I need to lock out? What do I need to lock out?</li> <li>• Educating staff and overcoming objections.</li> <li>• Lessons and actions; what can I do to improve?</li> </ul> <p>Our presentation will involve interactive elements such as participation from attendees, videos and demonstrations as we have found in the past that it's the best way for audiences to engage and understand the subject matter.</p>	

11.30am	<b>Arc Flash Safety</b>	
Session 4	<b>Patrick Mynett</b> – Electrical Consultant, HV Training	
	Arc flash is little understood by people who operate and work on or with electrical equipment. This presentation will discuss the basic causes of an arc flash, the energy levels present, and the energy that is released during an arc flash. The recoding of arc flash incident and the suspected number that occur in the United Kingdom each year.	
	The definition of incident energy will also be explored, while explaining how incident energy levels can be reduced. Furthermore, this presentation will discuss the importance of arc rated PPE, why understanding and quantifying risk of arc flash is important, and why maintenance is important in reducing arc flash events.	
	<b>Lunch – 12.15pm</b>	
1.15pm	<b>AFTERNOON WORKSHOP</b>	
Session 5	<b>International Standards for Electrical Safety, NFPA 70E 2015 and Arc Flash PPE Standards from US and EU</b>	
<b>WORKSHOP SESSION</b>	<b>Hugh Hoagland</b> – Founder of ArcWear & Managing Partner at e-Hazard	
	This workshop will provide an overview of international standards on electrical safety including shock and arc flash. It will cover the basics of IEC, IEEE, ASTM, NFPA and CSA, standards and their inter-reliabilities. Section two covers Arc Flash PPE and research in PPE in arc flash from clothing to flash hoods, shoes, gloves, fall protection devices and many other items worn by workers in arc flash incidents. The information comes from accident investigations performed by Mr Hoagland and his arc flash testing research. There will be a special focus on arc blast pressure wave calculation research.	
	<b>Includes Afternoon Tea</b>	
	<b>Closing – 4.45pm</b>	
	<b>Networking Session – 5.00pm to 6.00pm</b>	
	An hour dedicated for all attendees to meet and socialise with experts and industry peers at the 2nd Arc Flash and Isolation Safety Conference Cocktail Hour.	

**REGISTER NOW:**

**Email:** conferences@idc-online.com

**Web Site:** www.idc-online.com

**Mail:** IDC Technologies, Suite 18, Fitzroy House Lynwood Drive, Worcester Park, Surrey, KT4 7AT, UK





All conference papers are reviewed and selected for their high quality and technical value by our panel of specialists experienced in the theory and practice of arc flash and isolation safety.

## CONFERENCE DAY TWO – 11<sup>th</sup> May 2017

8.30am **MORNING WORKSHOP**

Session  
6

WORKSHOP SESSION

### Safe Isolation in Electrical Power Systems

**Professor Ian Bitterlin** – Consulting Engineer, Critical Facilities Consulting Ltd.



The workshop covers the theory of short-circuit faults and potential arc-flash events, safe working practices and legal requirements in the UK, the need for arc-flash PPE and the limitations for practical tasks that arc-flash PPE create and a how to limit, if not avoid, the need for arc-flash PPE.

**Includes Morning Tea**

**Lunch – 12.00pm**

1.00pm **Arc Flash: Managing the Risks Associated with Electrical Arc Flash**

Session  
7

**Andrew Hogan** – Operations Director, Premium Power



Health and safety legislation in the UK imposes numerous duties on employers and the self-employed (contractors) in relation to Arc Flash and electrical safety in general. Employers must ensure, so far as reasonably practicable, the safety, health and welfare at work of employees and any other persons who may be affected by their undertakings (The Health and Safety at Work Etc. Act 1974/N.I Order 1978 in UK).

Employers must make a suitable and adequate assessment of the risks to health and safety, and those include Arc Flash and other risks involving electricity, and to put in place the necessary preventive and protective measures (Safety at Work Regulations 1999/N.I. 2000 in UK). In order to manage the risks associated with electrical arc flash and associated arc blast, a measure of the actual risk is required. For this, an arc flash hazard study which models an electrical network and calculates the prospective arc incident energy at working distance is required. Risk management measures should match the risk.

1.45pm

Session  
8

### Arc Flash Awareness – Are You Taking Electrical Safety Seriously?

**Angus Long** – Global Technical Manager - Arc & Flame PPE, Skanwear



This presentation has been developed to educate and raise awareness around the potentially fatal dangers of electrical arc flash. Questions around arc flash awareness are raised including the typical; what is it? Where and when does it occur, and why does it occur? These are followed on with a look in to the secondary hazards from an arc flash event and then a key discussions around ‘how it affects us?’

Powerful and engaging video including an extremely powerful testimonial from an arc flash survivor are used to underline the message. The attendees will hear about why people are actually getting hurt, what is being done and what we need to do together to prevent this. We will explore current legislation, directives and physical safety practises that can and should be implemented in our bid to save lives. Last but not least will be a focus on ‘your last line of defence’? Do you have one? These questions are combined with some stark imagery around what the potential consequences are of not taking electrical safety seriously.

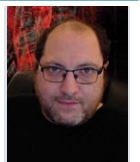
**Afternoon Tea – 2.30pm**

3.00pm

Session  
9

### Arc Flash in Industry – A case study on how a £3.12 billion food manufacturing company, covering 36 manufacturing sites across Europe, tackled arc flash

**David Watts** – Electrical Safety Consultant, D Watts Training



This session details how the UK’s largest food company took control of the potential risk of an arc flash or arc blast event. David will discuss:

- Deciphering the differences between HV and LV arc flash with consideration of likelihood and risk
- What awareness training was needed and to whom it was required
- What particular ‘roles and responsibilities’ were defined by the duty holder for both those carrying out the arc flash risk assessment and the actual work.
- How the levels of incident energy were determined.
- What engineering solutions were placed within the factories and bakeries to minimise the risk of arc flash hazards
- What signage was created to support this
- What requirements for PPE were determined
- What requirements for tools and test equipment were determined
- Deciding on which live work activities can and cannot be carried out and the sanction to work live procedure that controls this work
- How a ‘Rules Standard’ was created to document the recognised safe system of work and standardise it across Europe
- The training out of the new system of work and monitoring procedures to control it

3.45pm

Session  
10

### Discussion Panel

This session will provide delegates with the opportunity to ask our speakers questions and discuss arc flash and isolation safety related issues in their workplace, covering typical problems and possible solutions.

**Closing – 4.30pm**

### Sponsorship Opportunities

Representing your business at the 2nd Arc Flash and Isolation Safety Conference will provide you the opportunity to reach key decision makers from a multitude of industries.

For more information on sponsorship and exhibition opportunities please contact IDC Technologies via email [conferences@idc-online.com](mailto:conferences@idc-online.com).

## OUR CONFERENCE PRESENTERS

### HUGH HOAGLAND

Founder of ArcWear & Managing Partner at e-Hazard

Hugh Hoagland is among the world's foremost experts on electrical arc testing and safety. He has helped develop most of the arc-resistant rainwear used in the world today as well as creating the first face shield to protect against electric arcs. Hugh has helped with the development of legislation and standards in both the United States and Europe and sits on several industry committees. Before moving to full-time training and consulting, Hugh also worked for Cintas developing their strategy for meeting the needs of OSHA 1910.269 and NFPA 70E standards.



### IAN BITTERLIN

Consulting Engineer & Visiting Professor, University of Leeds

Professor Ian Bitterlin is a UK Chartered Engineer, with more than 25 years' experience in data-centre critical power and cooling, a Visiting Professor at University of Leeds, Fellow of the IET and owner/consultant at Critical Facilities Consulting Ltd. Ian commenced his engineering career with a focus on electrical drives (Schindler & Mannesmann Demag) in design and applications engineering. He co-authored two sections of the CIBSE Electrical Guide on UPS and HV Switchgear and is an active member of The Green Grid. He has presented numerous papers and courses throughout the world on drives, UPS's and critical power applications. Ian is an entertaining and knowledgeable instructor and you are sure to find his hard hitting presentation relevant and useful.



## REGISTRATION FORM:

### 2<sup>ND</sup> ARC FLASH AND ISOLATION SAFETY CONFERENCE

10<sup>th</sup> & 11<sup>th</sup> May 2017

Radisson Blu Hotel, Manchester Airport

Simply complete this form online or return by email to [conferences@idc-online.com](mailto:conferences@idc-online.com)

### EARLY BIRD OFFER:

10% off the conference fee for registrations received on or before 12<sup>th</sup> April 2017  
– SAVE £75.00

AND/OR

### 3 FOR 2 OFFER:

Register 3 delegates and only pay for 2  
– SAVE UP TO £750.00

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## 2. HOW DID YOU HEAR ABOUT THIS EVENT?

Received an email from IDC
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  Recommended by a friend/colleague
  Magazine advertisement/insert (please specify which magazine below)
  Other (please specify) \_\_\_\_\_

## 3. REGISTRATION & PAYMENT DETAILS

Prices shown are inclusive of VAT

**PLEASE NOTE: Full payment is required prior to the commencement of the conference.**

### 2<sup>ND</sup> ARC FLASH AND ISOLATION SAFETY CONFERENCE – 10<sup>TH</sup> & 11<sup>TH</sup> MAY 2017

**OPTION 1: Early Bird Discount – 10% OFF**  
 – Book on or before 12<sup>th</sup> April (SAVE £75.00) £675.00 x \_\_\_\_\_ delegates = £ \_\_\_\_\_

**OPTION 2: Standard Rate (NO Early Bird Discount)**  
 – Book after 12<sup>th</sup> April £750.00 x \_\_\_\_\_ delegates = £ \_\_\_\_\_

**OPTION 3: 3 for 2 Offer AND Early Bird Discount**  
 – Book on or before 12<sup>th</sup> April (SAVE £675.00) 3 delegates: 2 x £675.00 = £1350.00 = £ \_\_\_\_\_

**OPTION 4: 3 for 2 Offer Standard Rate (NO Early Bird)**  
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## GENERAL INFORMATION

### Confirmation Details

A confirmation email and invoice will be sent to delegates within 3 days of receiving the registration.

### Cancellation Policy

A fee of 20% cancellation will apply for cancellations received 7 – 14 days prior to the start date of the conference. Cancellations received less than 7 days prior to the start date of the conference are not refundable, however substitutes are welcome.

### Venue

Radisson Blu Hotel Manchester Airport, Chicago Ave, Manchester M90 3RA, UK +44 161 490 5000

### Accommodation

The conference venue has accommodation available. Contact directly on +44 161 490 5000 or email [reservations.manchester@radissonblu.com](mailto:reservations.manchester@radissonblu.com) to secure your accommodation.

### Food and Beverages

All lunches, morning and afternoon refreshments are included in the registration fee.

### Unable to Attend

If you are unable to attend the full conference program, contact us for details to attend individual sessions, or to purchase the Conference Resource Kit.

### Enquiries

Phone +44 (020) 8335 4014

## REGISTRATIONS

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