

8th Hazardous Areas Conference

7th & 8th July 2021

Sofitel Brisbane Central - Brisbane, Queensland Australia

Your Keynote Speakers



Neil Dennis

- ◆ Technical Director, AECOM Australia
- ◆ 40 years' experience in working in hazardous areas
- ◆ Chair SA committee of EL-014, Hazardous areas
- ◆ Deputy Chair SA committee MS-011, Classification of hazardous areas
- ◆ Chair IEC subcommittee SC 31J, Classification and Electrical Installations for hazardous areas



Dr Jim Munro

- ◆ PhD FIEAust CPEng NER APEC Engineer IntPE(Aus) SMIEEE
- ◆ Managing Director - Jim Munro International Compliance
- ◆ Member of IECEx Executive
- ◆ Past Chairman of IEC Committee TC 31

What You Will Gain From This Event

- ◆ Update your knowledge on hazardous areas equipment and technologies
- ◆ Learn how to design and install safe working systems in hazardous areas
- ◆ Hear about the significant changes to the next edition of AS/NZS 60079.10.1
- ◆ See how Australian and international standards are being successfully applied
- ◆ Discover the applications of hazardous areas and impacts on the renewable energy sector
- ◆ Learn how to prepare your business for a hazardous area audit/inspection
- ◆ Discuss critical issues of compliance to standards with experienced hazardous area professionals
- ◆ Learn about hazardous areas equipment installations through case studies and critical discussion
- ◆ Find practical solutions to your hazardous safety problems
- ◆ Network with experienced safety experts and your peers
- ◆ No sales pitches – non-commercial presentations

Who Should Attend?

- ◆ Instrumentation and Control Engineers
 - ◆ Engineering Managers
 - ◆ Process Plant Engineers and Technicians
 - ◆ Plant Managers and Project Managers
 - ◆ Process Maintenance Technicians
 - ◆ Risk Assessors
 - ◆ Chemical, Process & Mechanical Engineers
 - ◆ Instrumentation Technicians
 - ◆ Design Engineers
 - ◆ Manufacturers of Hazardous Areas Equipment
 - ◆ Safety Facilitators
 - ◆ Electrical Technicians and Managers
 - ◆ Process Control Specialists
 - ◆ Process Safety and Loss Prevention Managers
 - ◆ Government Safety Regulators/inspectors
 - ◆ OHS/Training Managers
 - ◆ Tradespersons working in potentially explosive areas
 - ◆ Electrical and Instrument Tradespersons.
- And all engineering professionals who have an interest in hazardous areas

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Introduction to Hazardous Areas

This conference has been created for those concerned with the safe use of electrical, mechanical and instrumentation equipment in hazardous, flammable or explosive atmospheres, thus preventing accidents and injuries in the workplace. The content of the conference will focus on the latest standards and how best to apply them, ensuring compliance for hazardous area audits. Experienced speakers will examine the critical issues involved in the management of hazardous areas.



Conference Program – Day One

7th July 2021

8:30am – Session 1

KEY NOTE



Hot Buttons in Adopting IEC Standards for Hazardous Areas

Neil Dennis - Technical Director, AECOM Australia

Australia has been adopting IEC standards for hazardous areas for over 20 years. We now have a mix of identical adoptions, modified adoptions, standards in revision and

IEC standards we may not want to consider. This presentation looks at the adoption process covering how, why, people, politics and what we can learn from. Along the way some hot technical issues currently being discussed in the IEC and Australia will be raised. New research and working in a global framework are challenging old practices and previously accepted principles. This is also a look ahead for the next 20 years.

9:30am – Session 2



The Ethernet of Things in Hazardous Areas

Raúl Barrera - Lead Engineer / HA & HV Auditor, Voltex Power Engineers

Automation systems communication is a mature discipline and has moved away from proprietary protocols to well-established and known fieldbuses, and in recent times into Ethernet, the latest bringing cost effective solutions, interoperability and redundancy as well as easy to access expertise that common IT technology provides. All these advantages can be brought into an automation or monitoring system within a Hazardous Area if proper consideration is given to its inherent characteristics. Raúl will discuss the use of Ethernet over copper, optical fibre and even over WiFi in Hazardous Areas via the design of an Intrinsically Safe Ethernet network.

10:15am – Morning Tea

10:45am – Session 3



Overcoming Barriers to RBI With Digitised HA Management

Rhys Davies - General Manager, Ex-Online

Risk based inspection (RBI) methodology has been around for several years. It's been underutilised despite the valuable opportunities it presents in providing an opportunity to increase inspection intervals, from a blanket of 3 years, based on assessment of risk. The hurdle has been confidence in the data collected over time. Without a high degree of confidence in the data forming their risk assessment, companies can't justify a deviation from a prescribed inspection interval. Digital tools are now available that are helping inspectors produce a better quality of inspection output, increasing both consistency and completeness of the data. This facilitates better analytics, creates confidence and provides the foundations for RBI strategy implementation.

11:30am – Session 4



The Risk Based Approach to Hazardous Area Classification

Dr Frank Mendham - Director, Mendham Consultants

The risk-based approach to hazardous area classification has been applied to hundreds of laboratories and similar environments where mechanical ventilation is provided over an almost 20-year period throughout Australia. This approach has been implemented to ensure that hazardous area exclusion zones are appropriate to the actual risk and do not work as an enforced impost on laboratory and hospital usable space.

In some cases, it has been determined that under typical laboratory and hospital ventilation conditions, the Loss of Containment of chemical compounds in typical user packages cannot produce enough evaporative flux to develop significant hazardous areas as indicated by way of industry examples shown in AS/NZS 60079.10.1:2009. In some cases, however, certain volatile chemical compounds spilled in quite small volumes can produce hazardous areas that far exceed the examples provided in the standard, therefore making the facility unsafe if they are applied without a thorough assessment. It can be shown that whilst the likelihood of spillage might be similar, if not the same, for a wide range of chemical compounds used in these types of facilities, the consequence of their spillage varies significantly, therefore the risk varies significantly.

Whilst some hazardous area classification parameters, as described in AS/NZS 60079.10.1, are described by many stakeholders as only a means of defining or qualifying ventilation requirements, a deeper understanding of how they can be used and applied to manage risk can lead to a safer installation.

12:15pm – Lunch

1:15pm – Session 5



Static Electricity – The Shocking Truth

Cem Novella - Managing Director, Static Electricity Control (SEC) & Meech Australia Static Control (MASC)

No matter how well the working environment has been designed, there's one potential source of spark discharge that's ever-present in virtually every workplace and that has enough energy to ignite all common flammable or combustible liquid vapours, gases, airborne dusts and loose solid materials. Static electricity is the prime culprit for at least two serious fires or explosions in industry worldwide every day of the year. In the U.S. alone, static electricity causes on average 280 industrial incidents each year reported to fire and emergency departments, resulting in injuries and fatalities, tens of millions of dollars in property damage, lost production or plant downtime and environmental release issues.

Consequently, Standards Australia committee EL025 is currently reviewing AS/NZS:1020 - "The control of undesirable static electricity" in conjunction with Standards Australia committee EL014 specific to the adoption of IEC/TS 60079-32-1 " Explosive Atmospheres – Electrostatic hazards – guidance ". Learn more about the update of these important Australian standards and some of the impacts that they will have on hazardous area industrial processes.

2:00pm – Session 6



Why critical safety systems might be like VW diesel engine systems

Ian Webster - Group Engineering Manager, Ampcontrol

The European motor vehicle manufacturer VW gained some notoriety for detecting particular performance test scenarios, and altering the operating modes of its engine management systems accordingly. VW, incidentally, was not the only manufacturer to pursue this path. The widespread introduction and use of embedded processors into critical safety transducers offers up the same opportunity: that is, to detect a given test scenario and then output a desired response rather than a 'normal' response. How easy is this? How widespread is the practice? Is this a problem? How can it be detected? These scenarios will be explored through the example of diffusion type gas detectors used in critical safety systems where flammable or toxic atmospheres can be present.



2:45pm – Afternoon Tea

3:15pm – Session 7



Type B Gas Appliances – Certification and what to check for

Kayne Herriman - Principal Engineer, Hazardous Area Specialists (HAZ)

There has been some confusion in industry as to what a Type B gas appliance is and why it is not hazardous area compliant. For Type B gas fitters, it's easy, they see a Type B gas appliance which needs to comply to AS/NZS 5601.1, AS/NZS 3814, AS 1375 and they have the correct approvals in place. For a EEHA inspector who is unaware of what a Type B gas appliance is, they would be asking themselves why does it not need to comply to AS/NZS 60079 series? Getting this wrong could be a costly exercise either way you look at it. This talk will show attendees the process of how a Type B device is certified and provide information on what they need to check for to ensure that the equipment is certified if they are asked to inspect a gas appliance.

4:00pm – Session 8



Application of Hazardous Areas and Impacts on the Renewable Energy Sector

Daniel Lay - Senior Project Engineer, ACOR Consultants

History shows how hazardous areas can become catastrophic without proper understanding of the risks and implementation of practical controls. Even with small quantities of flammable materials, there is a risk of hazardous area formation. There are standards and guidance available to assist in the classification however it is important to know the intent, understand the process and practicality of the application. With emerging technologies in the energy sector such as hydrogen and batteries becoming increasingly prevalent, it is important to note the impact of hazardous area zones. This presentation details how the available guidance can be applied so that it is practical and deals with the emerging renewable energy sector.

4:45pm – Day One Closing

5:00pm-6:00pm – Networking Drinks Session

8:30am – Session 9

KEY NOTE



Punching Above our Weight in Ex Standards and Certification

Dr Jim Munro - Managing Director, Jim Munro International Compliance Pty Ltd

Australia has been active in the development of Ex standards in the International Electrotechnical Commission (IEC) for 40 years and in the IECEx System since its beginning. Australians have held key positions in various committees and working groups, with significant impact on the outcomes. This has provided us with high confidence in IEC standards and certification, leading to us being one of only a small number of countries accepting IECEx certificates. This paper will provide historical context to the Ex Equipment certificates that we accept today, both local and international.

9:15am – Session 10



The (not-so) hidden cost of HA classification by (invalidly applied) example

Jason Wigg - Compliance Engineer, E-x Solutions International Pty Ltd

Annex ZA of AS/NZS 60079.10.1:2009—and before it the AS/NZS 2430.3 series—has many examples of hazardous area classifications for “common” industry applications. When applied to a service station forecourt, a fuel tank farm, or a gas pipeline, they make a lot of sense and save a lot of time. But what happens when classifiers apply these examples to situations that the standards writers never intended? The result is usually extremely conservative, but occasionally understates the hazard or leads to ineffective mitigation strategies.

10:00am – Morning Tea

10:30am – Session 11



Governance of Hazardous Area Auditing

Andrew Maunder - Managing Director, Safetylec Management Solutions

The Queensland Electrical Safety Office has been liaising with appointed Hazardous Area Auditors in regards to the governance of auditing. Governance is not necessarily a new term but has been gaining traction within professional institutions. Governance in hazardous area auditing can be defined as structures and processes that are designed to ensure accountability, transparency and stability. Therefore, when auditing a hazardous area auditing governance needs to apply.

This paper will look at the challenges auditors have with regards to governance of auditing hazardous areas, including but not limited to: What are the boundaries of the audit/inspection. Conflict of interests, commercial interests, evidence-based approach, risk-based approach, what evidence do we keep and how do we keep it. The governance of auditing goes hand in hand with the governance of design and installation. The paper will further touch on some of the personal issues that have presented to the author during his auditing career.

11:15am – Session 12



Conformity Assessment Documents and Fitness for Purpose Reports – the nature of each and their application

Paul Spresser - Principal HA Specialist, Hazardous Area Specialists (HAZ)

Conformity Assessment Documents and Fitness for Purpose Reports represent a means to consider explosion protected equipment, based on evidence and logic, that may not initially appear to be compliant. Conformity Assessments demonstrate equivalent testing and dimensional requirements between sometimes similar, and sometimes very different standards. Note that not all candidates for Conformity Assessment will be successful.

Fitness for Purpose Reports allow the consideration of the following: Field installations inside component (“U”)certified enclosures, providing the “further consideration” that is required; Modifications to existing equipment that may be installed within an explosion protected equipment; Determination of Surface Temperature of enclosures by geometry and calculation to obtain or confirm a temperature classification for a given power dissipation and maximum ambient temperature and; Consideration of changes to Unit Verified equipment (limited scope IEC certification) where the changes can be demonstrated to not compromise safety as originally established.

12:00pm – Lunch

1:00pm – Session 13



Explaining the IECEx Certificate of Personal Competency Scheme

Jeff Strath - Principal Electrical Engineer & High Voltage /Hazardous Area Auditor, Compliance Training & Engineering

IECEx have developed a complete package of Units of Competency for Ex industry. Here Jeff will provide specialist technical advice on entering into a hazardous area, expertise in explosion protection techniques, classification, installation, testing, maintenance, inspection, designing and auditing.

1:45pm – Session 14



Engineering in an Emergency

Ian Webster - Group Engineering Manager, Ampcontrol

On the afternoon of Saturday 21 March 2020, Ampcontrol's CEO received a telephone call from the NSW Government asking if the company could build 600 emergency ICU ventilators in four weeks. The Government had projected that NSW hospitals would be short of ICU ventilators before the end of April of that year, and that sourcing of machines from overseas was not possible. Just 18 days later, on Friday 10 April, Ampcontrol delivered its fully functional prototype emergency ICU ventilator to John Hunter Hospital in Newcastle for evaluation. After testing, the clinical experts deemed the Ampcontrol device suitable for use in ventilating critically ill patients in the COVID emergency. Ampcontrol subsequently received a government contract for the design and supply of emergency ventilators, culminating in the attainment of 'Permission to supply' from the medical regulator (the TGA). This presentation tells the story of how Ampcontrol – a mining and industrial electrical engineering and manufacturing company with no prior experience in medical devices – was able to mobilise and deliver not just one, but four separate ventilator designs in the space of three weeks. The techniques used and the lessons learned during this rapid development serve as a useful template for preparing for 'engineering in an emergency'.

2:30pm – Afternoon Tea

3:00pm – Session 15



Hazardous Area Classification – the next generation

Neil Dennis - Technical Director, AECOM Australia

AS/NZS 60079.10.1 was last published in 2009 and two editions of IEC 60079.10.1 have published since then. In the last 5 years an all new framework for the next edition of AS/NZS 60079.10.1 has been worked on to pick up the IEC developments and take us forward with all the lessons learnt and issues on the horizon. This next edition of AS/NZS 60079.10.1 is about to be published. This presentation will explain the structure and application of the new edition as well provide insights behind some of the key technical details that have been updated. For a number of industries, the changes are significant.

3:45pm – Session 16



Identifying and Mitigating Ignition Risk using Standards ISO/IEC 80079-36, 37 and 38

David Price - Testing and Certification Engineer, Ex Testing and Certification

Non-electrical equipment presents ignition hazards in hazardous gas and dust environments in similar ways to electrical equipment and therefore they can be protected in similar ways. However, non-electrical equipment encourage a different approach to assessing the potential ignition hazards that are present in the equipment such as frictional heat and adiabatic compression. The ignition hazards present can be very limited, or there may be more sources of ignition that are not normally found in electrical equipment. The suite of standards ISO/IEC 80079-36, 37 and 38 provide a means to identify the sources of ignition and a means to help address these hazards and mitigate the risk of ignition. These standards and some test methods will be discussed.

4:30pm – Conference Closing



About the Keynote Presenters



Neil Dennis

Neil Dennis is a technical director and principal electrical/mechanical engineer with AECOM Australia. Neil has over 40 years' experience in working in hazardous areas as a consultant with a variety of companies in petroleum, petrochemical, wastewater and food industries as well as specialist manufacturing

and processing plants. His experience includes design for complex plants of all types and compliance assessments as well as incident investigations, training, and specialist advice related to safety, risk analysis and regulatory issues.

Neil is a licensed electrical inspector in Victoria for hazardous area installations and is a registered specialist in this field with Energy Safety Victoria. Neil has been an active member of Australian Standards committees for hazardous areas since 1992 and IEC standards committees since 1999. He holds a number of current positions on Australian and New Zealand joint standards committees including:

- Chair SA committee of EL-014, Hazardous areas
- Deputy Chair SA committee MS-011, Classification of hazardous areas
- Chair IEC subcommittee SC 31J, Classification and Electrical Installations for hazardous areas
- Member of other sub committees and working groups including protection by ventilation, mechanical equipment and dust hazards.

Neil also represents Australia on relevant International Electrotechnical Committee, (IEC), working groups and maintenance teams for these aspects of standards related to hazardous areas.



Dr Jim Munro

Dr Jim Munro is Managing Director of Jim Munro International Compliance. He has travelled and worked extensively overseas, working in over 30 countries. He provides consultancy and auditing services to a range of customers, including manufacturers, users and testing and certification bodies.

He has been involved in the field of explosion-protected equipment (Ex equipment) since 1979 at the national and international level.

Current roles include:

- Convenor of IECEx Assessment Group
- Convenor of IECEx ExMC Working Group 15, Integration of non-electrical Standards
- Member of numerous other IECEx working groups
- Member of numerous national and international standards committees and working groups
- Lead assessor with the IECEx Scheme

His qualifications and recognitions include:

- PhD degree from Sydney University (2018)
- Fellow of the Institution of Engineers Australia
- Senior Member of IEEE
- Chartered professional engineer (CPEng)
- On the Australian National Professional Engineers Register (NPER)
- Registered Asia-Pacific Economic Cooperation (APEC) Engineer
- International Electrotechnical Commission (IEC) Thomas A Edison Award
- Standards Australia Meritorious Contribution Award – International

Other roles have included:

- Chairman of International Electrotechnical Commission (IEC) Committee TC 31, Electrical Apparatus for Explosive Atmospheres, for 15 years
- Director of TestSafe Australia for 7 years up to early 2004
- Chairman of Standards Australia Committee EL/14, Electrical Equipment in Hazardous Areas, for 12 years
- Manager Engineering Services at WorkCover NSW for 8 years





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Sarah Montgomery at:
conferences@idc-online.com
or call 1300 138 522

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

Cancellation Policy

A 20% cancellation fee 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

Sofitel Brisbane Central
249 Turbot St, Brisbane City QLD 4000 AUSTRALIA
Phone: (07) 3835 3535

Accommodation

The conference venue has accommodation available. Please book through their reservations team on (07) 3835 3535 or email h5992@sofitel.com.

Food and Beverages

All lunches, morning and afternoon refreshments are included in your delegate registration.

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Searched online (Google, Yahoo etc) Recommended by a friend/colleague Magazine advertisement/insert

Other (please specify): _____

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\$1,615.50 x _____ delegates = \$ _____ \$ _____

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