

# SAFETY CONTROL SYSTEMS AND HAZARDOUS AREAS CONFERENCE

2<sup>nd</sup> and 3<sup>rd</sup>  
May 2012

Novotel, Ellerslie  
AUCKLAND

Featuring **Keynote Speakers:**

**Dr. ERIC SCHARPF**

CFSE and Partner, Exida

**COLIN MURPHY**

Hazardous Areas Consultant and NZ  
Technical Representative for IEC  
Hazardous Areas Committees

Plus **Special Guest:**

**GARRY HOUSE**

Chair of AUS/NZ Hazardous Areas Committee

Plus numerous local and international presenters



## BENEFITS OF ATTENDING:

- Discover how IEC functional safety standards are being successfully applied to manage safety projects
- Learn about the lifecycle approach to safety-instrumented systems through case studies and critical discussion
- Update your knowledge on safety technologies for process and machinery safety
- Learn how to design and install safe working systems in hazardous areas
- See how New Zealand and international standards are being successfully applied
- Learn about the hazardous areas equipment installations
- Discuss critical issues of compliance to standards with experienced professionals
- Find practical solutions to your hazardous safety problems
- Network with experienced safety experts and your peers

## 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

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## FOR MORE INFORMATION:

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# INTRODUCTION TO SAFETY CONTROL SYSTEMS AND HAZARDOUS AREAS

Every year, industry experiences catastrophic fires, explosions or toxic releases. These events can result in injury, loss of life and can have a huge economic impact. This conference has been created to offer you the most up to date information to enable you to analyse, specify, design, install and maintain safety systems and electrical equipment in your plant whilst complying with the latest standard requirements.

Many industrial processes have the potential to harm people or the environment. Day One of the conference will focus on safety control systems including instrumentation and machinery safety. Case studies and practical applications will be presented by specialists experienced in safety life cycle activities such as hazard and risk assessment and the determination of safety integrity levels (SILs). It will discuss the latest technology and application of safety-related control and instrumentation systems and will examine the complex and challenging issues of

using control systems technology to maintain and improve the safety of people and the plant whilst ensuring profitability.

Day Two of the conference has been created to meet and exchange ideas for those concerned with the safe use of electrical equipment and instrumentation in hazardous, flammable or explosive atmospheres. It will serve to highlight technologies, best practices, and accelerate improvements in standards and regulations to reduce explosions and fires caused by ignition of flammable vapours or dust clouds. Throughout these sessions participants have the opportunity to share experiences and know-how with engineers, technicians and other technical professionals who are all eager to eliminate accidents and injuries in the work place.

This conference will be relevant and beneficial to a wide range of industry sectors including machinery and automation plants, chemical processes, energy and power, pulp and paper and petrochemicals.

## CONFERENCE DAY 1 - Safety Control Systems - 2nd May 2012

8.00am	<b>Registration</b>		1.30pm	<b>Functional Safety. Are You Competent?</b>
8.15am	<b>Opening Address</b>		Session 4	<b>Brian Mulcahy</b> Managing Director, HIMA Australia Pty Ltd There is a growing awareness across many industry sectors of the need to conform to internationally recognised standards in the areas of process safety, especially IEC/AS61508 and 61511. This presentation will discuss what is involved and how to go about evaluating the steps necessary to conform to these standards. In-light of the most recent amendments to the standard (2010), we will also look at what qualifications or competencies are necessary for those involved in the application of 61508 and 61511. This presentation will particularly focus on competencies and highlight how they impact companies who have or are considering application of functional safety within their business.
8.30am	<b>MORNING WORKSHOP</b> <b>Cherry Picking in the Safety Lifecycle</b>	SEE BACK PAGE FOR ERIC'S BIO		
Session 1	<b>Dr. Eric Scharpf</b> CFSE and Partner, Exida Many companies are coming to terms with how to implement the safety lifecycle most effectively. Although at first glance this appears to be an expensive proposition, if it is done well, applying the safety lifecycle can actually lead to overall cost savings. This presentation will show you how to maximise those savings with minimum disruption and cost. It will teach you how to achieve and identify the optimal level of safety. We will work through the various safety lifecycle phases to analyse the initial need for safety instrumented systems, then outline how to specify, design and install them effectively. Finally you will learn how to operate and maintain them properly throughout the life of the plant. This workshop will be useful to most engineers, technicians, and managers with design, safety, or operations responsibility in process or machine automation applications.			
	<b>Morning Tea - 10.30am</b>		2.15pm	<b>Selection and Design of a Safe Control System for Machinery Guarding</b>
11.00am	<b>Machine Guarding Design and Installation Experience</b>		Session 5	<b>Brain Anderson</b> NZ Safety Services Engineer, Pilz Safe Automation In this presentation you will get in introduction to the steps and processes involved to successfully design a machinery safety solution. Whether it is a new installation or an upgrade to an existing machine; this presentation will discuss the various technologies available and examine the pros and cons of each. It will cover safe guarding, not only the operation of the machine but also the maintenance, set-up and cleaning of the machine. This presentation will also include an interactive exercise on choosing a solution for your system. It will look at factors such as the stopping time of the machine and how this can affect your choices. You will have the chance to work through examples which will aid you in future machine guarding projects.
				<b>Afternoon Tea - 3.00pm</b>
11.45am	<b>ICSS: Integrated Control and Safety Systems, Where do They go Wrong?</b>		3.30pm	<b>Functional Safety for Machinery</b>
Session 3	<b>Howard Thomas</b> Performance Improvement Manager, Clough AMEC Beca Regardless of which vendors system is installed there is always one common denominator: people. As an industry we have developed our approaches to ICSS to the point where we are reasonably confident our probability of failure on demand is low. What we tend to overlook is that operators can increase the demand. The greater the number of demands the greater the number of failures. To reduce the number of demands we need to concentrate on the human elements, particularly the attitude towards risk. In this paper you will learn how to align behaviour with the intent of effective ICSS in your operation.		Session 6	<b>Craig Imrie</b> Product Manager of Safety, NHP With the increasing use of complex devices in safety systems and a transition towards functional safety in Europe, a better understanding of how to validate safety systems to a SIL rating is needed. In this presentation you will learn about the evolution of machinery safety standards in Europe and what this means for New Zealand and Australia as well as the technology limitations of the AS4024 category system. The differences and similarities between the safety process of AS4024 and AS62061 and why these standards are used in machinery safety will be discussed. You will walk away with an in depth explanation of the mechanics of designing a SIL rated safety system.
	<b>Lunch - 12.30pm</b>		4.15pm	<b>Discussion Panel</b>
			Session 7	This session will provide delegates with the opportunity to ask our speakers questions and to discuss safety control systems used in their workplaces, covering typical problems and possible solutions.
				<b>NETWORKING SESSION</b> <b>Cocktail Hour - 5.00pm to 6.00pm</b> An hour dedicated for all attendees to meet and socialise with experts and industry peers at the Conference Cocktail Hour.

**REGISTER NOW:**

**Fax:**  
(09) 262 2304

**Mail:** PO Box 76142  
Manukau City 2241

**E-mail:**  
idc@idc-online.com

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



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 safety control systems and hazardous areas.

## CONFERENCE DAY 2 - Hazardous Areas - 3rd May 2012

**8.30am MORNING WORKSHOP**

**New Zealand Hazardous Areas Standards in Relation to EPLs and Risk Management**

**Colin Murphy**  
Director, The Core Safety Group

**KEY NOTE**

In this workshop we will discuss The Electricity (Safety) Regulations 2010 and how they impact work carried out in hazardous areas within New Zealand. It will explain the recent changes in controls for extra low voltage work in hazardous areas. We will then move on to risk management of hazardous areas and outline the difference between zones. It will also explain the function of EPLs (equipment protection levels) and their relationship to zones. This session will be an interactive discussion and an opportunity for us to all learn from each other.

*SEE BACK PAGE FOR COLIN'S BIO*

**Morning Tea - 10.30am**

**11.00am Safety Systems Engineering and Hazardous Areas Practical Examples**

**Cris Kerrison**  
Principal, QGE Pty Ltd (AUS)

**CASE STUDY**

This presentation provides practical examples in the use of IEC61508 and IEC61511 to assist in providing solutions to hazardous areas design issues. Examples presented are based on a number of recent projects across various industries including mining, processing and energy. The discussion will include examples of how to use Safety Systems Engineering as a tool when designing to a number of standards including; AS/NZS60079.10.1 - Hazardous Area Classification, AS1482 - Protection By Ventilation and AS/NZS60079.30 - Electrical Resistance Trace Heating. The principles utilised can be applied across a range of disciplines and industries.

**11.45am Combustible Dusts - The Issues**

**Paul Spresser**  
Manager, EPEE Consulting (AUS)

Most organisations and individuals working within hazardous equipment industries are comfortable with the requirements for flammable gas and vapour hazards in terms of area classification and equipment installation requirements. However, when it comes to combustible dust hazards, familiarity is generally limited to the older DIP concept requirements. This presentation serves to introduce already "hazardous equipment aware" individuals to the recent concepts relating to combustible dust hazards and the latest AS/NZS standards pertaining to combustible dusts. The mechanism for the ignition of combustible dusts is discussed, followed by area classification concepts, installation requirements and protection techniques.

**Lunch - 12.30pm**

**1.30pm Electrical Apparatus in Explosive Atmospheres: An Industry-led, Competency-Based Solution**

**Paul Hollings**  
Industry Manager, Electrotechnology and Telecommunications, ETITO

**CASE STUDY**

When ETITO set out to review a handful of hazardous areas unit standards in 2009, no one could have predicted it would turn into a full qualification designed from scratch. ETITO's investigation into the matter

found that while there was no qualification for this work in New Zealand, almost all other western countries have stringent rules on the training and re-certification for electrical equipment in hazardous areas. ETITO joined industry in its push for a full qualification, with the Pike River mining disaster and the Icepack Coolstore fire near Hamilton tragic reminders of the importance of this work. This presentation will describe the journey from conception to registered qualification, and outline the qualification's benefits to the industry as a whole.

**2.15pm Combustible Dust Hazardous Areas - Only Part of a Plant Wide Protection Philosophy**

**Session 12**

**Andy Gunson**  
Project Engineer, Transfield Worley Ltd

Dust explosion risk is ever present in manufacturing plants that deal with many common dusty products. The leading cause of dust explosions in such plants is mechanical friction, causing 30% of incidents. Hazardous areas and the selection of electrical equipment forms only a part of the overall plant protection scheme. This presentation explores the considerations you need to make when installing equipment that handles combustible dusts. Is it time to also consider the mechanical equipment being installed within hazardous areas?

**Afternoon Tea - 3.00pm**

**3.30pm Improving Safety of Rotating Machines in Hazardous Areas**

**Session 13**

**Csaba Szabó**  
Product Manager, HV Machines, ABB (AUS)

To improve the safety of electrical rotating machines used in classified hazardous atmospheres a risk assessment is required. According to the standards, if risk levels exceed limits, manufacturers must prove their designs by testing or by fitting their products with special accessories. The risk assessment procedure requires input and collaboration from the manufacturer and the end user or consultants. In this presentation you will learn about the issues related to a risk assessment inline with the AUS/NZ60079-7:2006 and -15:2005 standards. You will be left with an in-depth explanation of the different options available to ensure compliance within the standards.

**4.15pm Discussion Panel**

**Session 14**

Hosted by SPECIAL GUEST **Garry House**, Chair of AUS/NZ Hazardous Areas Committee.

Delegates will have the opportunity to ask questions and discuss their hazardous areas issues with Garry or any of the conference presenters.

**Closing - 5.00pm**

### Sponsorship Opportunities

Representing your business at the 2012 Safety Control Systems and Hazardous Areas 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 Arna Holmes via email [conferences@idc-online.com](mailto:conferences@idc-online.com)

# KEYNOTE SPEAKERS

## Dr. Eric Scharpf

CFSE and Partner, Exida

Dr. Scharpf has over twenty years of professional experience and is widely recognised as an expert in chemical process safety, efficiency analysis and optimisation. He has led many safety lifecycle projects in chemical processing, energy, mining and machine automation applications from analysis to operations.

He has published numerous reviewed journal articles as well as the leading textbook on SIL selection. He has also developed several of the cryogenic gas processing, combustion, and separation techniques currently used for hydrogen, synthesis gas, and power generation. His principal work responsibilities now centre on the risk analysis phases of projects with a focus on achieving both cost and safety improvements. With significant experience in research and development as well, he also teaches several process, energy, and safety related courses at the University of Otago in Dunedin, New Zealand.



## Colin Murphy

NZ Technical Representative for IEC Hazardous Areas Committees

Colin has been involved in the electrical safety standards process since 1992 when he joined the office of the Chief Electrical Inspector, now Energy Safety. His first experience of the standards process was at an IEC SC31 meeting in Brisbane where he quickly learnt how grounded and practical thinking can make a positive impact. Over the years Colin has played an integral role, working alongside local and international experts in the development of practical electrical safety solutions for hazardous areas, installations and animal stunning. He believes the standards process is a valuable means to achieve technical safety outcomes without being influenced by industry or politics. At present Colin is involved in the IEC committees dealing with hazardous areas and alternative energy. He also runs his own business The Core Safety Group which provides an independent service, working alongside the clients existing service providers to look at the wider safety issues.



### REGISTRATION FORM: SAFETY CONTROL SYSTEMS AND HAZARDOUS AREAS CONFERENCE 2012

2nd & 3rd May - Auckland, New Zealand

Simply complete this registration form online or return by fax or email

#### 1. CONTACT DETAILS

CONTACT: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

COMPANY ADDRESS: \_\_\_\_\_

SUBURB: \_\_\_\_\_ CITY: \_\_\_\_\_ POST CODE: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

**DELEGATE 1**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

**DELEGATE 2**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

**DELEGATE 3**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

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#### EARLY BIRD OFFER:

20% off the conference fee for registrations received before 3rd April 2012 - SAVE \$300

OR

#### 3 FOR 2 OFFER:

Register 3 delegates and only pay for 2 - Save \$1500

Please Note: The "3 for 2" offer cannot be used in conjunction with the "Early Bird" offer.

#### 2. REGISTRATION & PAYMENT DETAILS

Prices shown are exclusive of GST

- OPTION 1: FULL CONFERENCE - Early Bird Discount 20% - Book before 3rd April \$1200 x \_\_\_\_\_ delegates = \$ \_\_\_\_\_
- OPTION 2: FULL CONFERENCE - NO Early Bird Offer - Booked after 3rd April \$1500 x \_\_\_\_\_ delegates = \$ \_\_\_\_\_
- OPTION 3: FULL CONFERENCE - 3 for 2 Offer (SAVE \$1880) \$3000 for 3 delegates = \$ \_\_\_\_\_
- OPTION 4: Conference DAY 1 ONLY (2nd May - Safety Control Systems) \$950 x \_\_\_\_\_ delegates = \$ \_\_\_\_\_
- OPTION 5: Conference DAY 2 ONLY (3rd May - Hazardous Areas) \$950 x \_\_\_\_\_ delegates = \$ \_\_\_\_\_

Additional delegates: Corporate packages available upon request + GST = \$ \_\_\_\_\_

PLEASE NOTE: Full payment is required prior to the commencement of the conference. TOTAL DUE = \$ \_\_\_\_\_

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#### GENERAL INFORMATION

##### Confirmation Details

An acknowledgement email will be sent to delegates within 2 days of receiving the registration. A further confirmation and invoice will be emailed prior to the conference.

##### Cancellation Policy

Full reimbursement will be accepted if written notification of cancellation is received by IDC Technologies on or before Friday 20th April 2012. A fee of 20% will apply to any cancellations received between 20th April and 27th April. No cancellation requests can be accepted after 27th April 2012 however substitute delegates are welcome.

##### Venue

Novotel  
72-112 Greenlane East  
Ellerslie, Auckland 1546  
Ph: (09) 529 9090

##### Accommodation

An option of 4 or 3.5 star accommodation is available at the conference facility. A special rate and booking details will be provided upon receipt of your registration.

##### Food and Beverages

All lunches, morning and afternoon refreshments are included.

##### Unable to Attend

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

##### Enquiries

Contact conference coordinator  
Arna Holmes by phone: (09) 263 4959  
or email: [conferences@idc-online.com](mailto:conferences@idc-online.com)

#### REGISTRATIONS

We encourage you to register early, as spaces are limited. Your payment must accompany the registration form in order for it to be processed and confirmed.

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