Who Should Attend:
• Electrical Engineers
• Instrumentation Engineers
• Chemical Engineers
• Process Control Specialists
• Technologists and Technicians
• Process Safety Managers
• Loss Prevention Managers
• Plant Managers
• Process Supervisors

What You Will Gain from This Event:
• Familiarise yourself with updates made to the IEC functional safety standards and consider the implications to your industry
• Discover how IEC functional safety standards are being successfully applied to manage safety projects
• Assess and understand how to protect your industrial control systems from cyber security threats
• Learn about the lifecycle approach to safety-instrumented systems through case studies and critical discussion
• Update your knowledge on the latest trends and new developments in safety systems technology
• Find out what’s new in technologies for process and machinery safety
• Get practical solutions to your safety problems
• Discover how optimal safety design can improve production and reduce costs
• Network with industry peers

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Presented by:
PAUL GRUHN
ISA Fellow; Global Process Safety Consultant, Rockwell Automation
Developed the first commercial safety system modelling program
SEAN CARRON
Vice President Engineering & Technology, Combustion Solutions Inc.
Over 20 years’ experience in the design, construction, and commissioning of SIL-rated burner management systems

For More Information
Ph: 1800 324 4244
idc@idc-online.com
or www.idc-online.com
This conference will focus on the technology and application of safety-related control and instrumentation systems in the chemicals, energy, mining and manufacturing industries. It will give you the tools to help reduce the risk of cyber security threats on your industrial control systems, and examine the complex and challenging issues of using control systems technology to maintain and improve the safety of people and plant, while ensuring profitability.

The conference will provide practical applications by specialists experienced in safety life cycle activities such as hazard and risk assessment, and the determination of safety integrity levels (SILs).

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

### CONFERENCE DAY ONE – 26th November 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8.00am</td>
<td>Registration</td>
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<tr>
<td>8.15am</td>
<td>Opening Address</td>
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<tr>
<td>8.30am</td>
<td><strong>Process industry accidents – lessons learned the hard way and how to avoid them</strong>&lt;br&gt;Paul Gruhn - ISA Fellow; Global Process Safety Consultant, Rockwell Automation&lt;br&gt;Using a collection of videos, photographs and stories, this keynote presentation will highlight the lessons learned from a variety of process accidents. Topics will include: Everyone needs training; People must follow procedures; Even trained people make mistakes; Some people don't know what they don't know; We're not as immune or indestructible as we may think; We can't foresee every possible hazardous scenario; Reuse of software has not always been successful; Near misses are often not followed up; The past is often ignored (and history definitely repeats itself); The various personnel functional safety certification/certificate programs available (e.g. CFSE, TUV &amp; ISA) and the differences between them.</td>
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<td>9.30am</td>
<td><strong>LOPA: beyond the basics</strong>&lt;br&gt;Blair Rebichaud - Functional Safety Lead, Meg Energy&lt;br&gt;The use of LOPA has become commonplace in the process industry as a Safety Integrity Level (SIL) evaluation technique and as a more semi-quantitative review tool. However, the implementation and effectiveness of the results vary widely. Misuse can lead to excessive additional protection layers that result in reduced facility availability, and a waste of project resources for little benefit. This presentation expands on some of the concepts of LOPA to provide guidance in its effective and appropriate use. Some of the topics covered include: How to decide what scenarios to use LOPA; How to group scenarios; What numbers to use for usable results; Effects of the HazOp detail – too much or not enough? Residual risk from LOPA (SIL A) – to mitigate or not to mitigate; How to use modifiers.</td>
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<td>10.15am</td>
<td><strong>Proposed methodology for tank farm SIL</strong>&lt;br&gt;Luis Garcia - Process Safety Business Developer, Siemens&lt;br&gt;For protection of tanks holding volatile fluids, the industry best practice has traditionally been documented in various application specific prescriptive standards and guidelines, such as the API 2350 guide from USA. But recent events have caused the industry to rethink overall protection requirements and to also embrace a more performance oriented functional safety approach, alongside a review of existing prescriptive standards. This presentation will look at methodology that could be used to simplify the development of a tank protection system to guard against typical hazards (overfill, implosion etc.) and satisfy the requirements of prescriptive standards and guidelines, as well as the performance based functional safety standard IEC 61511.</td>
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<td>11.30am</td>
<td><strong>Proof test coverage factors – setting the record straight</strong>&lt;br&gt;Shaun Williamson - Senior Safety Management Specialist, Dynamosyk&lt;br&gt;Proof test coverage factors is still largely done by estimation rather than detailed analysis. Some are claiming that 100% is a reasonable estimate for most applications but there are several factors to consider. 100% indicates perfection – each and every time over the life of the function. It implies that the device is the same as it was new. Many factors have to be considered such as human error and environmental conditions even if PTC factors are estimated.</td>
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<td>1.15pm</td>
<td><strong>Practical burner management solutions for multiple burner furnaces</strong>&lt;br&gt;Sean Carron - Vice President Engineering &amp; Technology, Combustion Solutions Inc.&lt;br&gt;The use of safety programmable logic controllers (PLCs) for burner management systems has increased significantly over the past ten years. This paper describes the use of innovative methods to meet the stringent Canadian codes for a new burner ethylene cracking furnace. Cracking furnaces have significant challenges in that they incorporate a large number of premixed radiant wall burners, which makes instrumentation expensive. Some of the difficult issues encountered are natural draft purging of the furnace, burner management controls during decoking operation, burner management during start up and full operation, flame detection, natural draft air/fuel ratio control, and economizer boiler safety functions.</td>
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<td>2.00pm</td>
<td><strong>Migrating legacy trip systems</strong>&lt;br&gt;Mike Palamarek - Director, Cybertech Automation Inc.&lt;br&gt;Evolving safety system standards, industry regulations and obsolescence issues are driving the need for new safety instrumented systems (SIS). Migrating from legacy trip systems based on hard wired relays, pneumatic devices, non-certified programmable logic controllers (PLCs) or obsolete SISs is a complicated activity. This presentation will outline strategies and methods used on successfully completed projects that migrated legacy systems while the plant was running and during turnaround situations. Along with upgrading legacy trip systems, projects usually require new instrumented protective functions (IPFs) and existing IPFs to be modified. The operational, maintenance and engineering issues associated with changing existing plant functionality will be also highlighted.</td>
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<td>3.15pm</td>
<td><strong>Performance standard based burner management system</strong>&lt;br&gt;Dave Goerzen - Senior Technical Specialist, Autopro Automation Consultants Ltd&lt;br&gt;Performance based standards for safety instrumented systems (SIS) are gaining acceptance in the process industry worldwide. These standards are increasingly being applied to burner management systems (BMS). Prescriptive standards are useful in identifying specific interlocks which help increase safety, based on lessons learned from previous fatal incidents and near misses. This paper will discuss how to use quantitative methods to select the appropriate safety integrity levels (SILs) associated safety instrumented functions (SIFs) interlocks and application of safety lifecycle as defined by ANSI/ISA 84.00.01-2004 (IEC 61511 mod) to multiple burners furnace.</td>
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<td>4.00pm</td>
<td><strong>Expected and unintended effects of instrumented safety protections</strong>&lt;br&gt;Edgar Ramirez - Safety Instrumented Systems Specialist, ABB Inc.&lt;br&gt;As industry seeks to reduce risks in processes through operation of safety instrumented systems (SISs), different levels of compliance with lifecycle requirements have been observed: Compliance with safety standards performance enables effective risk reduction; SIS equipment rated for safety integrity levels (SILs) but not engineered to meet the risk reduction requirements; Standard technology used to implement safety protections according to practices that have been in use for some time. Unfortunately incidents leading to harm for personnel and affecting companies still occur in spite of existing and new safety systems. Results and effects from SIS projects and operations will be discussed to point out the importance and benefits of systematic functional safety measures, assessments and management as per standards IEC 61508/IEC 61511.</td>
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<td>4.45pm</td>
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**NETWORKING SESSION: Cocktail Hour - 4.45pm to 5.45pm**

For all attendees to meet and socialise with experts and industry peers at the Safety Control Systems Conference Cocktail Hour.
Implementing full burner management and combustion control to meet Canadian codes
Sean Carron - Vice President Engineering & Technology, Combustion Solutions Inc.
One of the most prevalent applications of programmable logic controller (PLC) based burner management systems is power boilers. Traditionally boilers are designed to meet NFPA 85; however, Canadian codes require CSA B149.3 to be followed. This paper describes the implementation of a PLC based CSA B149.3 compliant BMS for a tangentially fired quad burner power boiler. Numerous challenges were encountered in meeting the code requirements while ensuring a highly reliable system. Included in the discussed are valve proving systems, multi-burner flame discrimination, fuel air ratio tracking, accurate fuel and airflow measurement, drum level measurement, reliable pilot operation.

9.30am
Session 10
How to know if your operators are «in control»
Marc Tardif - Optimization & Advanced Control Expert, BBA Inc.
Using a systematic approach, it is possible to improve alarm management in your operation. This will reduce the number of alarms, improve the quality of those alarms and, provide better information to operators. This will in turn reduce the operator workload and number of incidents. When implemented properly, your plant will respect ISA 18.2 standard.
A real case will be presented, addressing the following questions:
• Where to begin?
• What is the investment?
• Which tools are needed?
• Is your plant different?

Morning Break - 10.15am

10.45am
Session 11
Safety by design
Peter Scantlebury - Manager, Technical Safety, AMEC Americas - Oil & Gas Canada
Safety by design is AMEC’s systematic approach to managing plant risk during engineering design. Delegates will gain insight into the safety by design process, and how Safety Instrumented Systems (SISs) fit within this process. The role of SISs within the safety by design process leads to a different approach to Safety Instrumented Function (SIF) identification and Safety Integrity Levels (SIL) assignment.

11.30am
Session 12
Looking beyond certification
Sam Kozma - Senior Functional Safety Specialist, SIL Solutions Inc.
The functional safety certificates that are earned through various programs are just the starting point towards proving competency within our industry. Understanding why competency is critical and continual improvement in our own personal knowledge and understanding are vital to the success of today’s projects with tight schedules and budgets. It is not enough to simply take a course or pass an exam, we have to use that to continuously improve and develop our industry. A course is a good start and an exam proves a minimum level of competency but functional safety is so much more.

Lunch - 12.15pm

Sponsorship Opportunities
Representing your business at the Safety Control Systems 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.
**Workshop with an Industry Safety System Expert**

This workshop will be an open question and answer format and will cover the topics that really matter! Paul will have materials on hand (slides, videos, photos, standards, modelling program, cartoons and more) to cover whatever topics you request, such as but not limited to: What are the differences between the various personal certification/certificate programs? How do I determine Safety Integrity Levels (SILs)? What does the 'grandfather clause' really mean and what do I have to do to meet it? Control and safety: interfacd, integrated or combined? How can single, dual and triplicated systems all be certified for SIL 3, and what are the differences between them? What is the benefit of transmitters over switches? What is the benefit of partial stroking of valves? What do I need to do with field devices to reach SIL 2 & 3? What is safe failure fraction, hardware fault tolerance and other terms used in the standards? How do I choose between certified or proven-in-use field devices? How do I verify that systems meet the SIL targets?

**Your presenter:** **Paul Gruhn**

ISA Fellow; Global Process Safety Consultant, Rockwell Automation

Paul is an ISA Fellow, a member of the ISA 84 standard committee (on safety instrumented systems), the developer and instructor of ISA courses on safety systems, and the primary author of the ISA textbook on the subject. Paul developed the first comprehensive safety modelling program over 20 years ago. He has a B.S. degree in Mechanical Engineering from Illinois Institute of Technology, is a licensed Professional Engineer (P.E.) in Texas and an ISA 84 expert.

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**REGISTRATION FORM:**

**SAFETY CONTROL SYSTEMS CONFERENCE**

25th, 26th & 27th November 2014 - Executive Royal Hotel, North Calgary, Canada

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

1. **DELEGATE DETAILS**

Contact: 
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Phone: Fax: Email: 

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

- [ ] Received an email from IDC
- [ ] Received a brochure in the mail
- [ ] Recommended by a friend/colleague
- [ ] Searched online (Google, Yahoo etc)
- [ ] Magazine advertisement/insert (please specify which magazine below)
- [ ] Other (please specify)

3. **REGISTRATION & PAYMENT DETAILS**

Pre-Conference Workshops - 25th November 2014 (NO discounts available for pre-conference workshops)
- Workshop 1: Workshop with a Industry Safety System Expert: $300 x ______ delegates = $
- Workshop 2: New developments in the 2015 version of the CSA B149.3 code for burner management systems: $300 x ______ delegates = $

SAFETY CONTROL SYSTEMS CONFERENCE - 26th & 27th November 2014

**OPTION 1:** Early Bird 10% OFF - Book on or before 29th Oct (SAVE $150)

- Book on or before 29th Oct (SAVE $150): $1350 x ______ delegates = $

**OPTION 2:** STANDARD RATE (NO Early Bird)

- Book after 29th Oct: $1500 x ______ delegates = $

**OPTION 3:** 3 for 2 Offer AND Early Bird 10% OFF

- Book on or before 29th Oct (SAVE $1350)
  - 3 delegates: 2 x $1350 = $2700 = $

- Book after 29th Oct (SAVE $1500)
  - 3 delegates: 2 x $1500 = $3000 = $

**OPTION 4:** 3 for 2 Offer STANDARD RATE (NO Early Bird)

- Book after 29th Oct (SAVE $1500)
  - 3 delegates: 2 x $1500 = $3000 = $

Corporate Packages available upon request

+ 5% GST or 13% HST = $

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

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**BOOKING CODE:**

**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.

**GENERAL INFORMATION**

**Confirmation Details**

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

**Accommodation**

The conference venue has accommodation available. Please contact them directly on +1 403 291 2003 and mention IDC Technologies to receive the best available room rate.

**Food and Beverages**

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

**Enquiries**

1800 324 4244
idc@idc-online.com

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