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hazardex LIVE 2024

Harrogate • UK • February 28th & 29th

PROTECTING PLANT, PROCESS & PERSONNEL

EVENT GUIDE

OPENING TIMES

Wednesday 28th February 2024
08:30 - 18:00

Thursday 29th February 2024
08:30 - 15:30

Event Sponsors:

C&P ENGINEERING SERVICES *Hazardous Area E&I Design & Engineering*

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Awards Sponsors:

C&P ENGINEERING SERVICES *Hazardous Area E&I Design & Engineering*

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29 | 02 | 24

hazardex LIVE 2024
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Hazardex Live 2024

The essential business forum for everyone involved in the safe and efficient operation of hazardous area plant and equipment

Editorial Notes

These notes contain details of the papers presented at Hazardex Live 2024, held at the Majestic Hotel, Harrogate, UK on 28th & 29th February 2024.

Each author has supplied the organisers with a biographical profile and a summary of the paper.

The views expressed in these papers are those of the authors and do not necessarily represent the views of either IML Group plc or any of the Event Sponsors. Copyright for each paper is retained by the author and IML Group, and any reproduction is prohibited without their prior written consent.

These notes also contain essential background information on the accompanying exhibition, including a floorplan for the event and exhibitor details.

Opening times

Wednesday 28th February		**Thursday 29th February**	
Registration opens	**08:30**	Registration opens	**08:30**
Exhibition opens	**09:00**	Exhibition opens	**09:00**
Chairman's address	**09:15**	Conference opens	**09:15**
Lunch	**12:45**	Lunch	**12:45**
Conference closes	**16:45**	Conference closes	**15:00**
Exhibition closes	**18:00**	Event closes	**15:30**
Drinks reception & dinner	**18:30 till late**		

Please take time during the event to visit and speak with exhibitors and we hope you enjoy Hazardex Live 2024!

... the Hazardex team

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Welcome to Hazardex Live 2024

To make your participation at Hazardex as easy as possible, we have compiled the following information which covers basic hotel, venue and event details. For any further information, speak to the organisers at the Conference Reception Desk. Please enjoy the exhibition and we wish you a successful and useful conference.

Event Venue: Majestic Hotel, Ripon Road, Harrogate, HG1 2HU, United Kingdom
Hotel reception Tel: +44 (0) 1423 700300

Exhibition and Conference: The Exhibition will be taking place in the hotel's **Carriage Suite**. **Conference Venues:** Stream 1 will be taking place in the **Billiard Room** and Stream 2 will be in the **Reading Room**.

Gala Awards Dinner: The dress code for the Gala Dinner is business suit or relaxed formal (ties optional). The drinks reception will be held in **Fredrick's Piano Bar** from 18:30. Dinner will commence at 19:30 in the **Ballroom**.

Products & Services: Please take time to view the Exhibition during your lunch and refreshment breaks. The companies represented are all leading suppliers of equipment and services for hazardous areas and should be able to assist you with any query you may have. Exhibitor contact details can be found at the back of this Conference Pack.

Check-In: You will be able to check into your room any time from **15:00** on the day of arrival. A swipe of your credit card will be taken upon checking-in, so that any extras can be charged to your room and settled upon departure.

Check-Out: All guests must vacate their hotel rooms during the morning of 29 February (or day of departure) by **11:00**. Any extra costs must be settled with your hotel upon departure. Please leave sufficient time to check out as it may be very busy and could reduce your time the conference.

Taxis: These can be ordered from the Main Reception of the hotel.

Event Sponsor

Hazardex Live 2024 Event Sponsor

TÜVRheinland®

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TÜV Rheinland
Friars Gate (Third Floor), 1011 Stratford Road, Shirley, Solihull, West Midlands, B904BN, United Kingdom
Stand 34
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Email: George.Bradley@tuv.com
Web: www.tuv.com/united-kingdom/en/

We are one of the world's leading independent providers of testing, inspection, certification and consultancy services, with more than 150 years of tradition. More than 20,000 experts around the globe work for TÜV Rheinland Group. We strive for quality and safety in the interaction between people, technology, and the environment. Our greatest asset is our immense expertise, which we apply in a meaningful way.

On the road to sustainable management, companies need clearly defined goals and a concept for how to achieve them - tasks that TÜV Rheinland solves competently and professionally. Our tests, assessments, trainings, and certifications set standards in many industries worldwide, true to the motto: We make the world a safer place. Today for Tomorrow.

We can also advise you on how to set up an efficient and effective occupational health and safety management system and support you in the efficient and safe implementation of occupational health and safety regulations. Our goal is to make your employees' work, organisation and behaviour health-promoting - permanently and sustainably.

By using the latest technology and innovative digital methods and learning formats, we combine TÜV Rheinland's technical expertise with our know-how in occupational health and safety.

Every company has its own culture: How do we treat each other; how do we behave? Part of the corporate culture is the safety culture, which determines how health and safety is actively practiced in the company. This is what Behaviour-Based Safety (BBS) is all about. Behaviour-based safety identifies the causes of unsafe working practices and negligent safety-related behaviour and develops possible solutions together with all levels of the organisation. The focus is on employees and their own actions: Managers and employees are encouraged and empowered to recognise and identify risks and to work as a team to develop and implement improvements for their area of work. The benefit of this active and interactive involvement is that the resulting safety rules are not simply followed but are understood by everyone involved and become an integral part of life.

We look forward to meeting you at our stand and presenting our safety culture solution!

www.tuv.com/safetyculture

C&P CAN SUPPORT YOU WITH YOUR Ex INSPECTION REQUIREMENTS

C&P understands the world of potentially explosive gases, vapours and combustible dust atmospheres is ever changing and becoming even more challenging.

C&P Engineering Services will be Exhibiting and making a Presentation at Hazardex 2023 at the Majestic Hotel Harrogate HG1 2HU From the 28th to 29th February.

50 1973 – 2023 YEARS IN BUSINESS

TRAINING SERVICES

C&P's Dewi Evans, Senior Hazardous Area Project Manager, will be giving a presentation on Hazardous Areas and the challenges and tribulations of ensuring equipment is maintained to the required standards, verifying the competencies of employees for designated tasks and preserving a safe working environment.

Please Contact steve.davies@cpengineering.co.uk for a Free Entry Pass into this Event and come and Visit us to discuss your Hazardous Area Requirements.

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Hazardous Area E&I Design & Engineering

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C&P Engineering Services, through its integrated electrical, control and instrumentation disciplines, design, construct and deliver complete projects and provide maintenance services to companies throughout the UK and internationally.

For over 50 years, C&P has been supporting customers and delivering performance-driven solutions to local, national and global industry within the oil & gas, chemical, water, nuclear, pharmaceutical, steel, process manufacturing, renewable energy and industrial markets.

The company's EC&I engineering services deliver complex, high profile and critical solutions. They offer 'cradle to grave' services across project life-cycles, from assisting with conceptual FEED studies and providing detailed design, through to installation, construction, commissioning, testing, documentation and supporting activities.

C&P is looking forward to exhibiting at Hazardex Live 2024 and the team will be on hand to discuss the company's services, which can be combined to provide the total EC&I engineering solution, or divided into the following design, build, operation and maintenance, consultancy, CompEx electrical and industrial training services:

- Hazardous Area ATEX Inspections, Design, Engineering & Consultancy
- Low Voltage Electrical Design & Engineering
- Control & Instrumentation Design & Engineering
- Safety Instrumented System Design & Engineering – IEC 61508, IEC 61511
- Functional Safety Management Consulting
- Project Management – Principal Contractor
- Sectors and Case Studies
- CompEx Electrical & Industrial Training Services

As an official Schneider Electric Partner, C&P Engineering Services offer process instrumentation products and engineering solutions for Pressure, Temperature, Flow, Level, Process Analytical, PH & ORP Measurement, Valve Positioners and Wireless Technology, all of which are supported through the company's design & engineering solutions to complement the Schneider Electric Process Instrumentation product range.

Please contact us if you require any further information or have an enquiry regarding any of our services.

Hazardex Live 2024 Event Sponsor

DNV

Level 2, Building 3, Aberdeen International Business Park, Dyce Drive, Aberdeen, AB21 0BR, United Kingdom
Tabletop 3
Tel: +44 (0) 1224 335000 **Email: energysystemsuk@dnv.com** **Web: www.dnv.com**

DNV is an independent assurance and risk management provider, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry standards, and inspires and invents solutions.

DNV provides assurance to the entire energy value chain through its advisory, monitoring, verification, and certification services. As the world's leading resource of independent energy experts and technical advisors, the assurance provider helps industries and governments to navigate the many complex, interrelated transitions taking place globally and regionally, in the energy industry. DNV is committed to realizing the goals of the Paris Agreement, and supports customers to transition faster to a deeply decarbonized energy system.

DNV's Energy Transition Outlook

If 'energy transition' means clean energy replaces fossil energy in absolute terms, then the transition has not truly started.

The transition has happened in some regions and for many communities and individuals, but globally, record emissions from fossil energy are on course to move even higher next year. Up to the present, renewables have met some, but not all, of the world's additional energy demand. Optically, the transition seems to be in stall mode, with high oil and gas prices fuelling an exploration surge while many renewable projects are experiencing an increase in cost due to inflationary and supply-chain pressures.

DNV has produced a global Energy Transition Outlook each year since 2017, it is now established as an important reference point for industry. DNV's forecast is based on our global, independent model of the world's energy system which DNV has developed over the last decade. The Outlook presents a single 'best estimate' forecast of the energy future, with sensitivities considered in relation to our main conclusions.

Launched recently, our UK specific Energy Transition Outlook (ETO) refines our independent modelling of the world's energy system to provide a deep dive perspective of the UK market, while accounting for the UK energy system's physical, political, technological, and economic links to Europe and the rest of the world. The UK ETO is a truly independent forecast providing detailed information on the demand and supply of energy towards 2050 and delves into the specific opportunities, challenges, policy, and financing relating to various energy vectors in the UK market.

The UK ETO report highlights:

1. The UK will not meet its legally binding 'Net Zero by 2050' target and will also fall short of its Nationally Determined Contribution (NDC) commitment for 2030 under the Paris Agreement.
2. The decarbonization of the UK economy is affordable and will, by 2050, more than halve overall household energy expenditure relative to 2021.
3. Despite growth of GDP and population, UK final energy demand will reduce by 2050 by a quarter compared to today's levels due to efficiency improvements from increased electrification of all sectors of the economy.
4. The UK's primary energy supply will shift significantly from fossil fuels to low-carbon sources, with the latter rising from 20% of primary energy today to 70% by 2050.
5. Electricity demand in the UK will increase by a factor of 2.5 by 2050 compared to today.
6. Electricity generation will shift fundamentally away from fossil fuels to variable renewable energy sources (VRES) which will be supplying three quarters of total electricity in 2050 compared to only a quarter today.
7. We believe that the UK can meet its 2050 net zero target, but this will require clear early policy decisions particularly around the decarbonization of heating in buildings and transport.

The next edition of our UK Energy Transition Outlook will be available from late February 2024.

Learn more or be one of the first to receive the new report by pre-registering at: https://www.dnv.com/etouk

Reqeust a FREE 1-2-1 consultation with DNV at Hazardex Live 2024 by ticking the corresponding box on the event registration page: https://data.imlgroup.uk/hazardex-live/

Timetable

hazardex LIVE 2024
Harrogate · UK · February 28th & 29th

Running order subject to change
Check www.hazardex-event.co.uk for the latest updates

HAZARDEX LIVE 2024 CONFERENCE – DAY 1

Stream 1 – Billiard Room (Delegates only)

08:30 – 09:15 **Registration, Refreshments & Exhibition Viewing**

09:15 – 09:20 **Chair's introduction**

09:20 – 09:55 ***An update from IECEx***
Chris Agius, Executive Secretary – IECEx

09:55 – 10:20 ***Learning from international benchmarking exercises***
Caroline Winstanley, Deputy Professional Lead for Internal Hazards – Office for Nuclear Regulation

10:20 – 10:45 ***The challenges of maintaining equipment to the required standards***
Dewi Evans, Senior Hazardous Area Project Manager – C&P Engineering Services

10:45 – 11:30 **Refreshments, Networking & Exhibition Viewing**

11:30 – 11:55 ***Risk appetite, a closer look at the menu***
Paul Heierman-Rix, Head of Compliance – Brenntag

11:55 – 12:20 ***Innovative risk-based inspection approach for explosion-proof equipment***
Rusdee Azeem, Senior Electrical Engineer & Chee Ying-Chan, Business Project Manager – Petronas

12:20 – 12:45 ***Safe plant reinstatement following intrusive work***
Peter Webb, Beyond Risk Ltd on behalf of Energy Institute

12:45 – 13:45 **Lunch, Networking & Exhibition Viewing**

13:45 – 14:10 ***Safety culture - the power of habits***
George Bradley, Senior Safety Consultant – TÜV Rheinland

14:10 – 14:35 ***Building sustainable future generations of talent in the chemical supply chain***
Heather Carroll, People & Skills Lead – Chemical Business Association

14:35 – 15:00 ***Hazardous area non-electrical inspection schedule***
Alan Montgomery, Technical Development Manager – CompEx Certification

15:00 – 15:30 **Refreshments, Networking, & Exhibition Viewing**

15:30 – 15:55 ***Explosion prevention considerations in project lifecycle***
Michael Ossai, Lead Functional Safety Engineer & Michael O'Neill, Technical Safety Engineer – Wood plc.

15:55 – 16:20 ***Guidelines for managing abnormal situations***
James Birch, Senior Consultant – BakerRisk

16:20 – 16:45 ***Mitigating against the risk of electrostatics***
Sean Makin, Applications Specialist – Newson Gale

Stream 2 – Sponsored by DNV
Reading room (access open to all registered attendees)

08:30 – 09:30 **Registration, Refreshments & Exhibition Viewing**

09:30 – 09:55 ***UK Energy Transition Outlook 2024***
Bwalya Kafwembe, Head of Department, Risk Advisory – DNV

09:55 – 10:20 **Application of existing regulations in the onshore energy transition**
Adam Chisholm, COMAH Business Development Manager, Health & Safety Executive

10:20 – 10:45 **Perspective on energy transition**
Oliver Lancaster, CEO, Institution of Gas Engineers & Managers

10:45 – 11:30 **Refreshments, Networking & Exhibition Viewing**

11:30 – 11:55 **Understanding the hazards in new energy**
Dan Allason, Principal Consultant, DNV

11:55 – 12:20 **Industrial Decarbonisation in Scotland - Acorn and the Scottish Cluster**
Mark Hughes, Chief Operating Officer – NECCUS

12:20 – 12:45 **Panel discussion with morning session presenters**

12:45 – 13:45 **Lunch, Networking & Exhibition Viewing**

13:45 – 14:10 **Dron & Dickson**
Bob Banks, Hazardous Area Technical Authority & Jim Cooper, Strategy Deployment Manager

14:10 – 14:35 **Scaling next generation electrolyser technology**
Titilola Oliyide, Senior Process Safety Engineer & James Stephens, Head of Process Engineering - Supercritical

14:35 – 15:00 **Technology qualification - creating confidence in tomorrow's solutions**
James Jenkins, Region Segment Manager - Onshore Oil & Gas, DNV

15:00 – 15:30 **Refreshments, Networking & Exhibition Viewing**

15:30 – 15:55 **Fire risk management in electrification of transport**
Jasjeet Singh, Team Leader, Risk Management Consulting, DNV

15:55 – 16:20 **The HAR 1 Bradford Low Carbon Hydrogen Refuelling Project**
Mark Danter, Technical and Client Delivery Director, N-Gen Energy Solutions

16:20 – 16:45 **Panel discussion with afternoon session presenters**

18:00 Exhibition closes
18:30 Drinks
19:30 Gala Dinner, Hazardex Awards 2024, and Entertainment
22:30 Drinks

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HAZARDEX LIVE 2024 CONFERENCE - DAY 2

Stream 1 – Billiard Room (Delegates only)

08:30 – 09:15 **Registration, Refreshments & Exhibition Viewing**

09:15 – 09:20 **Chair's introduction**

09:20 – 09:55 ***Update from the regulator***
Chris Buttrick, Principal Specialist Inspector – Health & Safety Executive

09:55 – 10:20 ***Lessons on long-term regulatory compliance***
Simon Wood, Environment, Health and Safety Specialist – Fuels Industry UK (formerly UKPIA)

10:20 – 10:45 ***Process safety competence & the COMAH Strategic Forum***
Neil Smith – Cogent Skills

10:45 – 11:30 **Refreshments, Networking & Exhibition Viewing**

11:30 – 11:55 ***Delivering Net Zero: The Challenges and opportunities for storage terminal logistics***
Peter Davidson, Executive Director – Tank Storage Association (TSA)

11:55 – 12:20 ***A new model for safety alarm operator response time requirements***
Harvey T. Dearden – SISSuite Ltd.

12:20 – 12:45 ***Inherently safe design for hydrogen applications***
Karina Almeida, Principal Consultant / UK Energy Transition Lead – Gexcon

12:45 – 13:45 **Lunch, Networking & Exhibition Viewing**

13:45 – 14:10 ***Artificial Intelligence insights and opportunities***
Dr. Matt Celnik, Digital Innovation Team Lead – DNV

Stream 2 – Sponsored by DNV
Reading Room (open to all registered attendees)

08:30 – 09:30 **Registration, Refreshments & Exhibition Viewing**

09:30 – 09:55 **Competency for the energy transition**
David Tomkin, Principal Consultant – DNV

09:55 – 10:20 **Transferability of skills following the Energy transition**
Rolf Kinck, Sales Manager, Trainor

10:20 – 10:45 **Role of Technical Standards for Hydrogen and Blends**
Tony Stonehewer, Principal Consultant, Pipeline Integrity Engineers

10:45 – 11:30 **Refreshments, Networking & Exhibition Viewing**

11:30 – 11:55 **Hazard management in a developing hydrogen industry**
Gary Toes, Consultant – DNV

11:55 – 12:20 **FutureGrid – Repurposing the UK's Gas Transmission System**
Lloyd Mitchell, FutureGrid Deblending Manager, National Gas

12:20 – 12:45 **Panel discussion with morning session presenters**

12:45 - 13:45 **Lunch, Networking & Exhibition Viewing**

13:45 – 14:10 **Competency and skills for the energy transition in context**
Huw Bement, Managing Director – CompEx Certification

14:10 – 14:35 **Hydrogen Safety Standards and Regulations**
James Steven, Business Development & Growth Manager – DNV

14:35 – 15:00 **Major Accident Hazards - DNV Virtual Reality Demo**

15:30 **Exhibition closes**

Awards

Hazardex Awards 2024

Awards Sponsors:

A total of 20 nominees have been shortlisted across four categories for the Hazardex Awards 2024, designed to recognise excellence in the hazardous area sector. As always, this year's winners will be announced during a Gala Dinner at the end of the event's first day on 28 February at the Majestic Hotel, Harrogate.

The Hazardex Awards programme has long been a benchmark for those supplying products, services and systems within hazardous areas and are the ideal opportunity to reward those companies and individuals that Hazardex readers believe are most worthy of recognition. The awards offer Hazardex readers the ability to play their part in raising awareness and standards across the sector by nominating a company, product or service, entering their vote, and encouraging colleagues to do likewise.

The Awards are presented following an informal, very well attended Gala Dinner in the evening of the event's first day where delegates, speakers, and exhibitors network over a three-course meal and drinks. Together with the Conference and Exhibition, the Gala Dinner and Awards evening aim to strengthen and expand the community that looks to the Hazardex website and journal for industry intelligence and information.

All the nominees have made a significant contribution in the relevant area within process industry or hazardous area operations over the last two years.

Voting rules:

*** 1.** The competition is open to all Hazardex journal, eNewsletter and website readers and users

*** 2.** Voters register their votes by fully completing all fields and **use an email from a business address only**

*** 3.** Voters are **limited to one vote per category**

*** 4.** Nominees are **not permitted to vote for their own company/organisation**

*** 5.** All votes will remain confidential

Category 1: ***Contribution to Safety – Sponsored by CEF***

A product, system or service which has made a significant contribution to safety in hazardous area environments.

a. Blackline Safety – G6 wearable single-gas detector
b. Kwerk GmbH – ATEX MULTIFLEX BLOCK
c. Moore Industries – SLA Multiloop Multifunction Logic Solver
d. Mutech – Safety critical electronics design
e. Roxtec – Roxtec S Ex transit

Category 2: ***Technical Innovation – Sponsored by C&P Engineering Services***

An innovative product or system for use in hazardous area environments.

a. Fike Europe – Fike Blue
b. i.safe MOBILE – Valve Sense IS-VS1A.1
c. Pratley Electrical – Flameproof Ex d Envirobox®
d. Red Lion – N-Tron® Series NT5000 Gigabit industrial switches
e. Scame – COMPACT-EX[GD] range of local control stations

Category 3: ***Net Zero Innovation – Sponsored by Connectivity***

An innovation for hazardous environments that helps lower emissions and carbon footprints.

a. Dover Fueling Solutions – Clean Energy Dispensers
b. Dräger – Dräger Flame 1750 H_2 (IR3)
c. ESI Technology – HI2000 High precision transducer for hydrogen applications
d. Newson Gale – Earth-Rite® Range
e. THT-EX – Explosion-proof LED light for hydrogen applications

Category 4: ***Best Customer Service – Sponsored by TÜV Rheinland***

A company or corporate division that has provided excellent customer service in the sector over the last two years.

a. Eutex
b. Hingerose Ltd.
c. MacLean International
d. Peli
e. STL International

Delegates Award – Sponsored by DNV

This award is an additional category open only to the companies shortlisted for the categories listed above. It is voted on by delegates and attendees at Hazardex Live 2024 and provides their opinion for the overall best hazardous area sector product, system or service. The award will be presented at the Gala Dinner and celebrated in our May 2024 issue.

Further details about each category and nominee can be found on the Hazardex Live website: **www.hazardex-event.co.uk**

Floorplan

hazardex LIVE 2024

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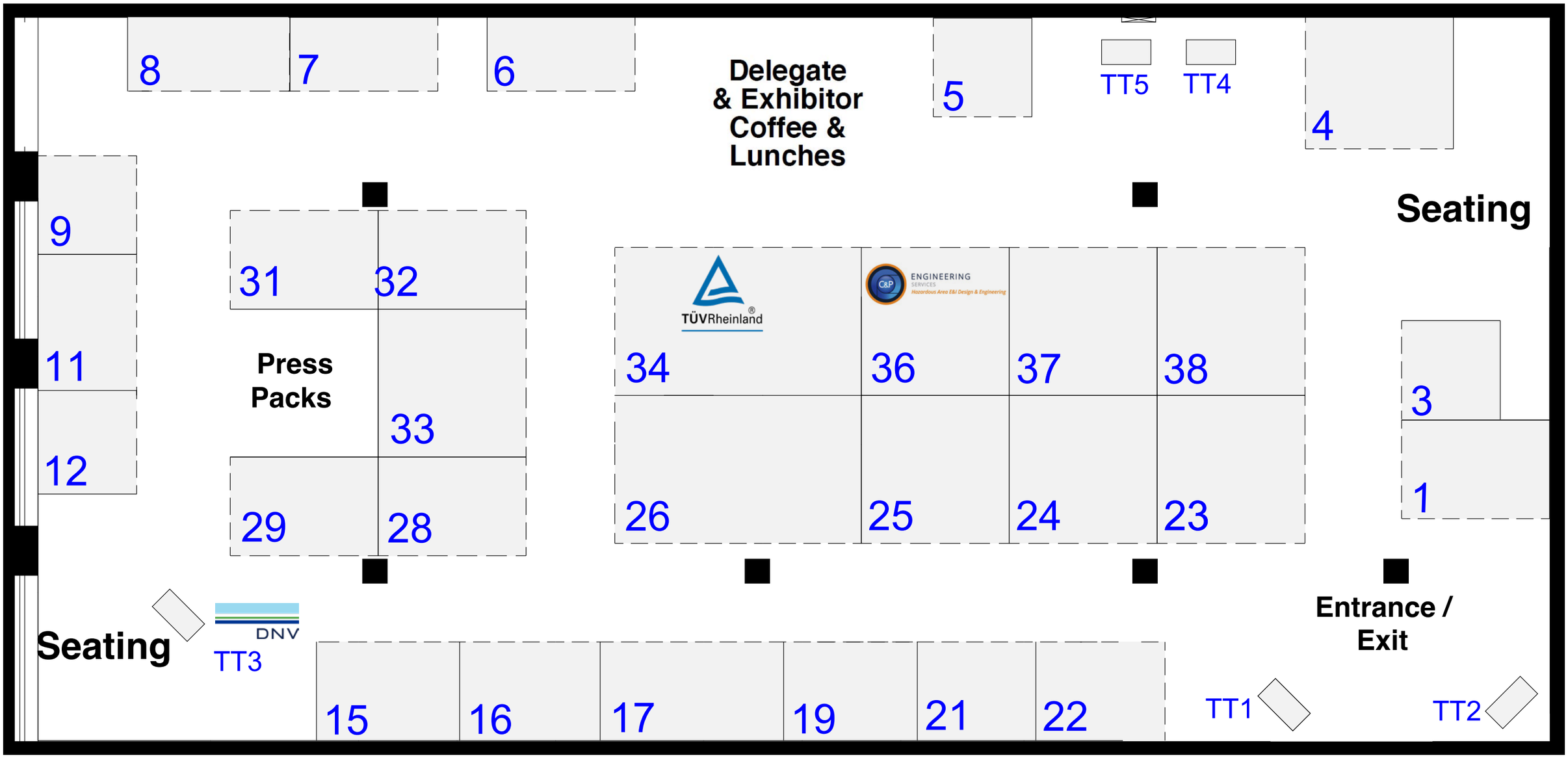
Stand #	Exhibitor	Stand #	Exhibitor	Stand #	Exhibitor	Stand #	Exhibitor
Tabletop 1	Tempa Pano	6	Mutech	19	Kwerk GmbH	31	Lewden
Tabletop 2	RUGGED MOBILE Systems	7	Pratley	21	Newson Gale	32	Trainor
Tabletop 3	DNV	8	Lighthouse UK	22	CompEx Certification	33	MacClancy & Sons
Tabletop 4	i-Ingenuity	9	Exloc Instruments	23	Roxtec	34	TÜV Rheinland
Tabletop 5	Institute of Measurement & Control	11	Mobexx	24	CEF	36	C&P Engineering Services
1	Saft	12	EA Technology	25	Pyroban	37	Blackline Safety
3	STL International	15	Scame UK	26	Maclean International	38	Fike Europe
4	ZIEHL-ABEGG	16	Lias Industrial	28	BEKA associates		
5	CCG UK	17	Pepperl+Fuchs	29	Hingerose Ltd.		



Hazardex Live 2024 Chair Profiles

Conference Chair – Stream 1, Day 1

Ron Bell, OBE, B.Sc. (Hons), CEng, FIET

*From 1992 until 2006, **Ron Bell, OBE,** was Head of the Electrical and Control Systems Group in the Health and Safety Executive. In 1998, he was appointed as one of the five UK members of the binational Channel Tunnel Safety Authority, an appointment he held for 13 years.*

He chaired the IEC Task Group that assessed the viability of developing an international standard for safety critical computer systems and then went on to chair one of the two IEC working groups responsible for Editions 1 and 2 of IEC 61508. He is currently involved in the revision of Edition 2 of IEC 61508. In 2005, he received the IEC 1906 Award for his work on functional safety and IEC 61508.

- *He held a 3-year appointment (2015-2018) as a Royal Academy of Engineering Visiting Professor at Liverpool John Moores University.*
- *In 2014 he was awarded the Institute of Measurement and Control, London Section, Annual Prize Outstanding Contributions to Instrument engineering.*
- *He was awarded the 2020 Mukaidono Safety Award, in recognition of distinguished services in the international standardisation of functional safety.*
- *He received an OBE in the Queen's 2006 New Year Honours.*

Conference Chair – Stream 1, Day 2

Paul Hague, Technical Authority – CompEx Certification

***Paul Hague** is the Technical Authority at CompEx, an international scheme for validating the competency of personnel working in industries with potentially hazardous and explosive atmospheres. With over 25 years' worth of experience in this field, Paul's role is to ensure that the CompEx qualifications continue to meet the needs of industry whilst ensuring adherence to international standards and best practice.*

Hazardex Live 2024 Conference Presentations

1. An update from IECEx

Wednesday – 09:20-09:55 – Billiard Room

Chris Agius, International Executive Secretary – IECEx

***Chris Agius** is the International Executive Secretary with CEO operational responsibilities for IECEx and also IECQ. He has held the IECEx Executive Secretary position since the IECEx System began more than 25 years ago thru to present day where IECEx has achieved formal endorsement by the United Nations via the UNECE. Chris has a longstanding involvement in the development of National and International Standards and Certification systems and has held various key positions in the Standards Australia Group. He is also member of various International ISO CASCO Expert Working Groups dealing with International Standards on Conformity Assessment.*

Abstract:
It has been more than 20 years since the first IECEx report or Certificate was issued.

Since those humble beginnings, IECEx has evolved into the "Global Standard", accepted by industry and Governments when conducting testing and certification of Ex related Equipment, Services and Personal Competence in the many industries where flammable and combustible materials are extracted, processed, stored and used. This presentation will provide an update of the IECEx activities and Certification Tools.

2. Learning from international benchmarking exercises

Wednesday – 09:55-10:20 – Billiard Room

Caroline Winstanley, Deputy Professional Lead for Internal Hazards at the Office for Nuclear Regulation (ONR)

***Caroline Winstanley** is an Internal Hazards Principal Inspector and the Deputy Professional Lead for Internal Hazards in the Nuclear Internal Hazards and Site Safety specialism in the Office for Nuclear Regulation. Caroline spent nearly 30 years working in the nuclear industry within radiological safety for Sellafield Ltd, writing safety cases, leading teams of hazard analysts, chairing HAZOPs and developing the internal hazards topic as the organisation's subject matter expert. Caroline joined the ONR Internal Hazards team over four years ago and is now an internal hazards lead in the New Reactors sub-division and the deputy lead for ONR on the ENSREG Topical Peer Review 2 whose focus was fire protection in nuclear installations.*

Abstract:

Caroline Winstanley, Deputy Professional Lead for Internal Hazards at the Office for Nuclear Regulation (ONR), will be providing an overview of the insights from the recent topical peer review (TPR) and the recommendations that follow.

The European Union's (EU) Nuclear Safety Directive requires the member states to organise a topical peer review (TPR) every six years. The UK participated in the first TPR, which started in 2017 as a member of the European Nuclear Safety Regulators Group (ENSREG). After leaving the EU, the UK is now an observer country at ENSREG and was invited to voluntarily participate in the second TPR, which covers fire protection in nuclear installations. The first stage of the peer review was for each participant country to produce a national assessment report (NAR).

The UK NAR covered fire protection relating to the nuclear power plants at Heysham 2, Hunterston B and Sizewell B and those under construction at Hinkley Point C; Dounreay's Prototype Fast Reactor Complex (including the irradiated Fuel Cave); enrichment facilities at Capenhurst, fuel fabrication plants at Springfields; and Sellafield Ltd.'s Magnox reprocessing plant. Finally, a selection of Sellafield Ltd.'s other facilities were also included.

The report describes each licensee's fire safety assessment methodologies, and implementation of the fire protection concept, including fire prevention measures and active and passive fire protection. ONR assessed the licensees' self-assessments referencing UK regulatory requirements and expectations, which implement international standards for fire protection in nuclear installations, nuclear fire safety and internal hazards. ONR also used intelligence from regulating fire safety from a life protection perspective, and identified useful transferable learning to nuclear safety, namely the importance of proactive management of fire detection and alarm system ageing and obsolescence, and maintainability of fire protection systems such as fire dampers.

Overall, ONR's assessment found that the UK installations have adequate fire safety analysis and fire protection arrangements commensurate with their radiological risks from fire and the potential for fire to impact nuclear safety systems. Nevertheless, improvements have been identified; the implementation of methodologies for proportionate but systematic screening and analysis of hazard combinations, including fire, and the enhancement of linkages between the extant management of fire loading for life protection and the nuclear safety arrangements in decommissioning facilities. This presentation will provide an overview of the insights from TPR and the recommendations that follow.

3. The challenges of maintaining equipment to the required standards

Wednesday – 10:20-10:45 – Billiard Room

Dewi Evans, Senior Hazardous Area Project Manager

***Dewi Evans** is a hazardous area specialist who has over twenty-five years of hands-on experience while working with a variety of different customers in a number of varying industries ranging from the Oil, Gas, Steel, Pharmaceutical, Chemical, Manufacturing and Water Industries to name but a few. As well as advising clients on Hazardous areas, Dewi also teaches several different CompEx courses at our purpose-built training centre in Swansea.*

Dewi provides practical advice to help students and has a real-world insight and understanding of the types of issues that might occur whilst working onsite and operating in potentially hazardous working environments.

Abstract:

Dewi Evans, Senior Hazardous Area Project Manager at C&P Engineering Services, will be giving a presentation on Hazardous Areas and the challenges and tribulations of ensuring equipment is maintained to the required standards, verifying the competencies of employees for designated tasks, and preserving a safe working environment.

C&P Engineering Services, through its integrated electrical, control and instrumentation disciplines, design, construct and deliver complete projects and provide maintenance services to companies throughout the UK and internationally.

For over 50 years, the company has been supporting customers and delivering performance-driven solutions to local, national and global industry within the oil & gas, chemical, water, nuclear, pharmaceutical, steel, process manufacturing, renewable energy and industrial markets.

4. Risk appetite, a closer look at the menu

Wednesday – 11:30-11:55 – Billiard Room

Paul Heierman-Rix, Head of Compliance – Brenntag

Paul Heierman-Rix *is Head of Compliance for Brenntag UK & Ireland and has 15 years' experience in upstream oil & gas drilling and production operations, followed by 20 years process safety management in both oil & gas and water industries.*

Abstract:

Brenntag's Head of Compliance, Paul Heierman-Rix, will be speaking at Hazardex Live 2024 about risk and how a person assesses how much risk a company is willing to take and whether it is managed.

How does one assess how much risk a corporate board is willing to take, and whether it is adequately managed? This talk explores corporate risk acceptance by looking at weak and strong signals in organisations, from shop floor to board room.

Brenntag is a global distributer of chemicals and ingredients. The Germany based international company manages complex supply chains for both chemical manufacturers and consumers by simplifying market access to thousands of products and services. The company operates a global network with about 600 locations in 72 countries.

5. Innovative risk-based inspection approach for explosion-proof equipment

Wednesday – 11:55-12:20 – Billiard Room

Rusdee Azeem, Senior Electrical Engineer & Chee Ying-Chan, Business Project Manager – Petronas

Rusdee Azeem *is an accomplished engineer with a strong educational background and diverse career in electrical engineering and project management. He embarked on his professional journey in 2009 at DPI Consult, where he served as an electrical design engineer. Rusdee joined AECOM in 2010 where he held the position of Senior Electrical Engineer. In 2013, joined Petronas, specifically within the Upstream Development Division. Here, his focus shifted to the oil and gas upstream sector, where he contributed as a vital member of the project management team.*

Chee Ying-Chan *is currently pursuing a Ph.D. in electrical & electronics engineering at University Teknologi PETRONAS. From 2005 to 2010, she was an Electrical Engineer in OGP Technical Services (a subsidiary of Petronas) before becoming a Senior Electrical Engineer in Petronas, based in Kuala Lumpur, Malaysia. She is currently the business project manager, driving digital solutions for transformer and explosion proof equipment in Petronas.*

Abstract:

Rusdee Azeem, Senior Electrical Engineer & Chee Ying-Chan, Business Project Manager from Petronas will be presenting at Hazardex Live 2024 on the company's Risk-Based Inspection (RBI) approach for explosion-proof equipment.

The oil and gas industry is inherently exposed to fire and explosion hazards due to the presence of flammable substances. To mitigate these risks, a significant portion of equipment utilized in this sector is designated as explosion-proof (Ex) type. Regular inspections of Ex equipment are vital to ensure safety and compliance, following the guidelines of IEC 60079-17. However, the conventional approach of uniform inspections for all equipment has led to resource-intensive processes, time consumption, and potential errors affecting production. Addressing these challenges, in 2020, PETRONAS has embarked on a journey to integrate risk-based inspection (RBI) methodology for Ex equipment, aiming to enhance efficiency and safety.

Inspired by the principle of "as low as reasonably practicable" (ALARP), PETRONAS has strategically adopted a risk-based inspection (RBI) methodology for Ex equipment. This entails categorizing Ex equipment within a facility into distinct lots based on both their physical location and associated risk levels. Utilizing the Guidelines for Managing Inspection of Ex Equipment Ignition Risk, aligned with IEC 60079-17, sample sizes and evaluation criteria are then determined.

The Ex-RBI program significantly optimizes inspection processes by reducing the number of Ex equipment subject to thorough inspection within a lot. The inspection findings from a representative sample serve as indicators of the overall quality of the lot, thereby allowing more targeted inspection efforts. Equipment deemed high risk undergo more rigorous inspection measures, including larger sample sizes and increased inspection frequencies, compared to lower risk equipment.

Notably, PETRONAS has also developed an in-house program to automate the sampling methodology and evaluation process.

6. Safe plant reinstatement following intrusive work

Wednesday – 12:20-12:45 – Billiard Room

Peter Webb, Director – Beyond Risk Ltd on behalf of The Energy Institute

***Peter Webb** is a fellow of the Institution on Chemical Engineers and is a chartered member of IOSH with experience of HSE leadership, manufacturing management and process technology in chemicals, petrochemicals and oil refining. Until recently he was Regional HSE Director for LyondellBasell, responsible for HSE performance in 25 sites in Europe, Asia and Australia. Since leaving LyondellBasell, he has worked independently on activities where he hopes he can make a difference. Having witnessed first hand serious incidents during reinstatement, he strongly believes that this new EI guidance ticks that box. This is his first time presenting at Hazardex, but he has previously presented at IChemE Hazards conferences and was the recipient of the Hazards 20 Burgoyne Memorial Lecture award, when his paper was selected as the keynote address.*

Abstract:
Peter Webb from Beyond Risk Ltd. and on behalf of the Energy Institute will be speaking at Hazardex Live 2024 about safe plant reinstatement following intrusive work.

Companies operating major hazard process facilities must plan for the non-routine modes under which the plant will operate during its life. Reinstatement following intrusive work, or breaking of containment, is one such mode. The Health & Safety Executive (HSE) previously expressed concern over the number of hydrocarbon releases which have been reported by UK offshore oil and gas operators, associated with poor control of reinstatement. Similar issues have been reported for onshore major hazard facilities in other industry sectors. The HSE identified the need for industry consensus and a document which describes what constitutes good practice. The Energy Institute (EI) has published guidance which seeks to meet this need. The document sets safe reinstatement within the context of a process for intrusive work.

Safe reinstatement can be achieved by systematically ensuring that risks are sufficiently managed, including managing disturbed joints throughout the work activity, leak testing and line walking to check readiness for start-up. The document provides principles and good practice for carrying out these activities. Since the activities are performed by people, it provides human factors guidance on how to identify and manage relevant risks arising from human vulnerabilities. The importance of leadership in managing major accident hazards has garnered increasing attention in recent years and the document provides guidance and a framework for effective leadership of reinstatement activities.

The intended scope of application of the document is major hazard facilities, onshore and offshore. The project to produce the EI guidance was carried out by a working group of industry and regulator participants under the supervision of the EI's Process Safety Committee. Drafting was carried out by a technical author who is the author of this presentation.

The presentation will provide an overview of the risks which exist in reinstatement and the good practices which can be applied to manage them. It will illustrate what can go wrong with examples of incidents.

7. Safety culture – the power of habits

Wednesday – 13:45-14:10 – Billiard Room

George Bradley, Senior Safety Consultant – TÜV Rheinland

***George Bradley** is a Senior Safety Consultant TÜV Rheinland. With 25 years of experience, George is an expert in creating and developing sustainable safety cultures for multinational companies in all industries. He supports TÜV Rheinland as the UK Country Manager for its Occupational Health and Safety business and has direct responsibility for the training of all consultants.*

Abstract:
At Hazardex Live 2024, Senior Safety Consultant George Bradley from TÜV Rheinland will discuss safety culture and present some case study examples of how employees can identify unsafe working practices.

All employees have the power to protect themselves and others. Did you know that 85% of accidents are caused by unsafe working habits and negligent safety behaviour? This presentation discusses case study examples of how employees identify unsafe working practices and risks, and how to develop safety rules they understand and implement.

TÜV Rheinland is an independent provider of testing, inspection, certification and consultancy services.
More than 20,000 experts around the globe work for TÜV Rheinland Group.

8. Building sustainable future generations of talent in the chemical supply chain

Wednesday – 14:10-14:35 – Billiard Room

Heather Carroll, People & Skills Lead – Chemical Business Association

Heather Carroll, *People & Skills Hub Lead, has worked in the chemical supply chain for 25 years and has a wealth of experience in people and skills, supporting clients to grow and prosper. She has a diverse background having had roles in HR, business planning, learning & development, bid writing and consultancy, and is a strategic, multidisciplinary business manager who has worked with an extensive range of organisations, from small startups to established industry giants. Heather's background includes working for both the private and educational sectors, and she has also spent time working for local Government and a scientific venture capital firm. Her areas of interest are early careers, intergenerational knowledge transfer and sustainability competences.*

Abstract:
At Hazardex Live 2024, Heather Carroll from the Chemical Business Association (CBA) will be discussing the issues relating to uilding sustainable future generations of talent in the chemical supply chain.

The chemical industry stands as one of the world's most vital and diverse sectors. At its core, this industry relies on the effectiveness and efficiency of its chemical supply chain, with its most invaluable asset being its people. A highly skilled, motivated, and globally distributed workforce equipped with a 'can do' attitude, coupled with relevant expertise and experience, drives the industry's success. It is imperative that we act decisively to attract and nurture emerging talent, ensuring a sustainable pipeline for future generations. The Chemical Business Association, as a leader in the chemical supply chain, recognises the urgency to secure sustainable talent pipelines and during 2023 we launched the People & Skills Hub to drive this essential transformation.

9. Hazardous area non-electrical inspection schedule

Wednesday – 14:35-15:00 – Billiard Room

Alan Montgomery, Technical Development Manager – CompEx Certification

CompEx Technical Development Manager, ***Alan Montgomery*** *is an experienced Electrical Practitioner who has gone on to support and develop Competency Management within Manufacturing and Petrochemical plants. Before joining CompEx, Alan was an instructor and assessor delivering Electrical Safety and CompEx qualifications at Forth Valley College.*

Abstract:
CompEx Certification's Technical Development Manager Alan Montgomery will be speaking at Hazardex Live 2024 about a newly established non-electrical inspection schedule for inspector that is in its final stages of development.

Currently the CompEx technical team is undertaking a review of the Mechanical (Ex11) qualification which covers the installation, maintenance, and inspection of Non-Electrical (Mechanical) equipment in hazardous areas. During the research and development, it became clear that there is a lack of clarity over how hazardous area inspections on non-electrical equipment is expected to be carried out. There is no industry 'best practice' guidance or a standardised approach defined in a standard, as there is in IEC 60079-17 for Electrical equipment installed in hazardous areas.

CompEx has established an industry working group of stakeholders and approved training providers to create a non-electrical inspection schedule for inspectors. This is in the final stages of development and will be included in the new Mechanical (Ex11) qualification and associated inspection assessment. The schedule will also be included the CompEx Toolbox Guide.

The hope is that through this continuous collaborative approach with industry, the CompEx Non-Electrical inspection schedule will be adopted as a 'Best Practice' document to support inspectors of equipment, operators, and the regulator to ensure that this equipment is installed and maintained safely and efficiently.

This paper will explore the review and development process involved in the creation of the schedule from initial concept, working group collaboration and industry trails of the document and process.

10. Explosion prevention considerations in project lifecycle

Wednesday – 15:30-15:55 – Billiard Room

Michael Ossai, Lead Functional Safety Engineer & Michael O'Neill, Technical Safety Engineer – Wood plc.

Michael Ossai, *Lead Functional Safety Engineer at Wood Digital Consulting - Systems Integration, is a control systems and instrumentation engineer with an MSc in Control Engineering. He has 23 years of experience in the design, installation, and inspection of equipment used in explosive atmospheres. In his current role as a Lead Functional Safety Engineer for Wood PLC, he is responsible for the delivery of various formal process safety assessments for multiple projects.*

Michael O'Neill *is a Technical Safety Engineer with a BEng in Chemical Engineering and an MSc in Process Safety and Loss Prevention. He is a TÜV Certified Functional Safety Engineer for Safety Instrumented Systems with extensive experience in Process Engineering, Process Safety, and Control Systems on global oil and gas projects.*

Abstract:

Prevention of explosion is a key consideration in brownfield and greenfield projects. This presentation will look at explosion prevention considerations that ensure the facility does not endanger lives or assets.

The use of consequence modelling techniques to determine worst case scenarios for flammable releases is frequently used to optimise building locations. At Wood SI, we are standardising our approach to ensure clients requirements, regulatory requirements and international standards are met through our fast PHAST approach for a multi-facility project.

11. Guidelines for managing abnormal situations

Wednesday – 15:55-16:20 – Billiard Room

James Birch, Senior Consultant – BakerRisk

James Birch, *Senior Consultant, works in the BakerRisk Europe Ltd. office, based in the United Kingdom, as part of the Process Safety Group. He has over 35+ years' operational and process safety experience across 25 countries, covering the high-hazard, fine chemical, pharmaceutical, and SBR polymer sectors. He has extensive experience managing process safety, technology, capital and operational improvement projects, and in customer-facing consultancy, training, and incident-resolution roles in the pyrophoric metal alkyls sector. He was previously EHS Director for an international pharmaceutical company.*

Abstract:

James Birch, Senior Consultant at BakerRisk, will present at Hazardex Live 2024 on managing abnormal situations in process industries which occur when conditions deviate from their normal state or operating range, such that basic process control systems are unable to restore normal conditions.

A team from BakerRisk, led by CCPS and in association with Abnormal Situation Management Consortium (ASMC), prepared a new book entitled Guidelines for Managing Abnormal Situations, published in January 2023.

Abnormal situations in the process industries occur when conditions deviate from their normal state or operating range, such that basic process control systems are unable to restore normal conditions. The consequences of a failure to provide the right intervention during an abnormal situation could ultimately lead to a major disaster such as a fire, explosion, toxic release, environmental damage and/or loss of life. Often there are opportunities for early identification, allowing corrective action to be taken before the abnormal situation escalates.

By carefully considering how these abnormal situations might occur and by developing methods to identify, respond, and manage them, the consequences that can arise from them might be either prevented entirely or at least mitigated. The book examines such methodologies and management systems and provides a valuable resource for operations and maintenance staff to be able to effectively troubleshoot and handle abnormal events, as well as reduce the frequency and magnitude of process safety events.

This talk provides an overview of some of the principles and practices for managing abnormal situations, and some of the case studies that are detailed in the book.

12. Mitigating against the risk of an electrostatic discharge

Wednesday – 16:20-16:45 – Billiard room

Sean Makin, Applications Specialist – Newson Gale

***Sean Makin** is the applications specialist for Newson Gale's range of electrostatic earthing and bonding equipment in the UK. With his primary focus being on customer processes in hazardous locations, Sean regularly attends site to fully understand the customer's application(s) and the risks presented by the accumulation of static electricity during normal operation. From there, he can offer advice relating to their electrostatic control solutions based on the internationally recognised best practice guidelines outlined in 'IEC TS 60079-32-1:2013+AMD1:2017 Explosive atmospheres - Part 32-1: Electrostatic hazards - guidance'.*

Abstract:

At Hazardex Live 2024, Sean Makin from Newson Gale will explain how static electricity can generate and accumulate during many industrial processes and outline how this can pose a significant risk to both people and plant with the help of some case studies and incidents.

The relevant Legislation, Standards and Guidelines will be highlighted as well as the industrial process applications that pose the highest risk of a fire or explosion when static electricity is not controlled. Solutions for mitigating against this risk will be explained together with the various levels of protection available. The key features of effective and reliable static grounding systems will be detailed so that solution specifiers can make a well-informed decision.

13. UK Energy Transition Outlook 2024

Wednesday – 09:30-09:55 – Reading Room

Bwalya Kafwembe, Head of Department, Risk Advisory

***Dr Bwalya Kafwembe** joined DNV in 2005 following a PhD in Chemical Engineering from the University of Birmingham. She spent several years involved in multiple projects related to the managing of Major Accident Hazards of onshore and offshore oil and gas assets as well as process optimisation and RAM. She currently manages the UK Risk Advisory Department providing advisory services covering tech safety, CFD, environmental, civils structures and geotechnics, integrity and materials, to onshore and offshore energy clients in the UK and overseas. As well as advising on the safe operation of traditional oil and gas assets, the focus of Bwalya's activities involves supporting industry through the energy transition, specifically as they consider the technical challenges of repurposing their assets for hydrogen and CCS, as well as the opportunity to design and implement the new operating assets of the future.*

Abstract:

Bwalya Kafwembe, Head of Department, Risk Advisory at DNV will be presenting DNV's UK Energy Transition Outlook for 2024 at Hazardex Live.

At a time of uncertainty for energy stakeholders, the DNV Energy Transition Outlook provides an independent forecast of our UK energy future through to 2050, from an organization with an equal footing in fossil and renewable energy.

Following last year's inaugural issue of this outlook DNV have engaged throughout 2023 with many different stakeholders to discuss our findings and gather feedback from all sectors of the energy industry. The 2024 forecast update reflects the output from these sessions and also the impact of key policy changes in 2023.

It further incorporates a more granular view on key issues like decarbonisation of heating and the expected development of the UK hydrogen and CCS infrastructure.

14. Application of existing regulations to energy transition

Wednesday – 09:55-10:20 – Reading Room

Adam Chisholm, COMAH Business Development Manager – Health & Safety Executive (HSE)

Adam Chisholm *is an HSE Principal Inspector with over 20 years' experience of regulating the COMAH sector, and he leads the COMAH Business Development Team in the Chemical, Explosives, and Microbiological Hazards Division (CEMHD) of HSE. His primary responsibility is to develop the COMAH operational response to the Net Zero energy transition. Adam has a strong track record of working collaboratively with stakeholders from industry and wider government partners to identify and implement improvements in the planning and delivery of COMAH interventions.*

Abstract:
Adam Chisholm, COMAH Business Development Manager at the Health & Safety Executive, will be presenting at Hazardex Live 2024 about the application of existing regulations to the onshore energy transition.

As the energy transition brings a period of opportunity and uncertainty to the COMAH sector, HSE recognises there are challenges ahead for all of us. In this presentation, Adam will describe how we plan to apply the existing goal-setting regulatory framework, whilst building a wider range of regulatory responses to make proportionate use of our resources. He will highlight the enduring importance of competence and say more about our work to explore opportunities for early regulatory engagement to influence safety in design of new COMAH sites. Finally, with legacy technologies and sites being part of the changing energy landscape for a long time to come, Adam will remind the audience of the regulatory expectations of them as they operate and maintain older assets whilst building their new ones.

15. Perspectives on the energy transition

Wednesday – 10:20-10:45 – Reading Room

Oliver Lancaster, Chief Executive Officer – Institution of Gas Engineers & Managers (IGEM)

Oliver Lancaster *is the Chief Executive Officer at the Institution of Gas Engineers & Managers, which is the professional engineering institution for individuals and businesses working to deliver advancement in knowledge and sciences for the benefit of the global gas industry. Oliver is experienced in whole energy systems, with knowledge gained in developing net zero pathways, technologies and customer propositions to mitigate climate change and optimise flexibly across gas production, electricity generation, energy storage, distribution networks and the industrial, buildings, power and transport demand sectors.*

Oliver has also led for the energy sector on climate change adaptation and developed the first national flood map to understand the impact climate change could have on infrastructure and justify proactive investment.

Abstract:
Chief Executive Officer at the Institution of Gas Engineers & Managers (IGEM) Oliver Lancaster will be speaking at Hazardex Live 2024, offering perspectives on the energy transition and the importance of understanding the complexity of current energy systems to enable society to reach net zero.

With an abundance of work already delivered and yet to be done to support the energy transition and the decisions that need to be taken in policy and regulation to get us to net zero, it's imperative that we actually understand the complexity of the system we have today.

Connections to the gas grid for different demands are too often simplified and assumed. Typically it is thought that industry and power generation are only on the gas transmission system, and the gas distribution network only has domestic building connections. Research shows this is not the case.

16. Understanding the hazards in new energy

Wednesday – 11:30-11:55 – Reading Room

Dan Allason, Principal Consultant – DNV

***Dan Allason** has been conducting large-scale, Major Hazards research for more than 16 years at DNV's Spadeadam Research Centre in Cumbria, UK. He has seen the focus of the energy industry's major hazards research change from traditional hydrocarbon based fuels over to proposed energy transition related substances: hydrogen, ammonia, carbon dioxide and lithium-ion batteries. Dan has led scientific efforts on research programmes relating to large scale fires, explosions, gas dispersion, component failures whilst also acting as an investigator for DNV's explosion investigation service.*

Abstract:

Dan Allason, Principal Consultant at DNV, will be presenting at Hazardex Live 2024 on the hazards related to new energy and the need to fill knowledge gaps.

Hazards associated with new energy solutions need to be well understood to inform decision making on the transition. The legacy Oil & Gas industry has a wealth of many decades worth of research into the behaviours of hazardous substances and this can be drawn upon to help determine comparative risk of transitioning to new solutions.

In addition, there is an ever-building body of research and understanding about the hazards posed by new energy solutions. Some knowledge gaps remain and will only ever be filled by larger and larger experimental programmes, model development alongside the uptick in deployment.

Learning from past research at scale has advantages in reducing the time to fulfil knowledge gaps. The presentation here will present the hazards associated with new energy and, where relevant, compare them to that of traditional solutions whilst highlighting what knowledge gaps remain.

17. Industrial Decarbonisation in Scotland - Acorn and the Scottish Cluste.

Wednesday – 11:55-12:20 – Reading Room

Mark Hughes, Chief Operating Officer – NECCUS

***Mark Hughes** is the Chief Operating Officer of NECCUS.*

Abstract:

NECCUS (pronounced nexus) was established in 2019 recognising the fact that industrial decarbonisation is the vital next step for tackling climate change, being a source for over 1/5th of all UK emissions. NECCUS now has over 50 membership organisations in the alliance, representing the majority of current industrial emissions in Scotland, and the organisations who can help to abate these emissions.he aim of NECCUS is to promote and champion industrial decarbonisation across Scotland on behalf of its members through co-operation and collaboration.

18. Dron & Dickson

Wednesday – 13:45-14:10 – Reading Room

Bob Banks & Jim Cooper – Dron & Dickson

***Bob Banks** is Hazardous Area Technical Authority at Dron & Dickson, while **Jim Cooper** is Strategy Deployment Manager.*

Abstract:
Dron & Dickson is a specialist in the supply, installation and maintenance of harsh & hazardous area and industrial electrical equipment.

19. Scaling a next generation electrolyser technology

Wednesday – 14:10-14:35 – Reading Room

Titilola Oliyide, Senior Process Safety Engineer & James Stephens, Head of Process Engineering – Supercritical

***Titi Oliyide**, Senior Process Safety Engineer at Supercritical, is a chartered engineer with over 9 years of experience in technical and process safety, reliability and systems assurance in the energy and infrastructure industries. At Supercritical, Titi is ensuring the safe scaling of their novel green hydrogen electrolyser technology with industrial partners.*

*With over 10 years' experience as a chemical engineer and a background in conventional oil & gas and energy transition projects including hydrogen and CCUS, **James Stephens** leads the process engineering of Supercritical's electrolyser and balance of plant systems as the company scales from out-of-lab technology demonstration to a full-scale commercial product.*

Abstract:
Titilola Oliyide and James Stephens from Supercritical will be speaking at Hazardex Live 2024 about safety and risk management of scaling next generation electrolyser technology.

The safe, efficient and cost effective production of high pressure green hydrogen will play a key role in the energy transition, particularly in the decarbonisation of key industries such as chemicals, heavy transport and high grade industrial heat applications. At Supercritical, we are developing the world's first ultra-efficient electrolyser to produce high pressure hydrogen (and oxygen) from water. Our proprietary design exploits the benefits of temperature and pressure to efficiently deliver over 99% purity gases at pressures above 200 bar, without the expense or challenges of hydrogen compressors. This will deliver the lowest cost of pressurised green hydrogen, with a vision to achieve 43kWh/kgH2 system efficiency at a cost of less than £1 /kgH2 by 2030.

Safety and risk management is paramount to enable the development of such innovative technology. As we scale from the laboratory to a commercial product, it is essential that Supercritical identifies applicable codes and standards when no Supercritical-specific standards exist. A strategy for achieving compliance at an early stage is essential for an accelerated route to market.

20. Technology Qualification – creating confidence in tomorrow's solutions

Wednesday – 14:35-15:00 – Reading Room

James Jenkins, Region Segment Manager - Onshore Oil & Gas – DNV

James Jenkins *is DNV Energy System's Region UK Market Area Manager for Onshore Oil and Gas. He oversees the business development and forward strategy for DNV's engagement in onshore oil & gas production, the gas networks and the industrial clusters. James has over 18 years' experience in a wide range of process industries, having previously been a Process Safety consultant establishing risk management frameworks, assessing risks in operation, supporting regulatory compliance activities and assessments of major accident management activities for a wide range of industries.*

Abstract:

At Hazardex Live 2024, DNV Energy System's Region UK Market Area Manager for Onshore Oil and Gas James Jenkins will discuss the introduction of unproven technology and how technology qualification can enable implementation of innovative or unproven technologies.

There are challenges to the introduction of unproven technology and even in sectors that are wanting innovation, technology development can be difficult. Concepts with well-known and proven technology are often preferred to solutions with elements of unproven technology, even if the latter provides significant operational improvement or cost-efficiency.

The journey to commercially implement unproven technology is difficult, but there are ways and means to de-risk the process and be transparent with those risks that cannot be controlled further. Technology qualification can enable implementation of innovative or unproven technologies. The Technology Qualification approach is a process driven tool to demonstrate to the stakeholders that risks / failure modes around the technology are understood and have been robustly managed.

The approach has been adopted as the internal qualification process by oil majors and contractors and has certified over 150 new technologies.

21. Fire risk management in electrification of transport

Wednesday – 15:30-15:55 – Reading Room

Jasjeet Singh, Team Leader, Risk Management Consulting – DNV

Jasjeet Singh *is team leader for the Risk Management Consulting (RMC) team in DNV Energy Systems. Jasjeet manages projects providing support as lead engineer and consultant for a variety of subject areas with focus on infrastructure electrification and green energy, cyber security and functional safety projects. Jasjeet leads development of technical methodologies and recommended practices for these areas.*

Jasjeet is a highly experienced engineer with 17 years' of experience in the energy sector, hydrocarbon industries and technical risk management. He has provided expert advice in technical risk management to multinational organisations, public sector organisations, national governments and educational institutions. He has managed and delivered high value projects, developed solutions to complex technical challenges, and mentored junior engineers.

Abstract:

A Hazardex Live 2024, Team Leader of the Risk Management Consulting (RMC) team in DNV Energy Systems, Jasjeet Singh, will examine the main challenges in current fire risk management provisions in the road transport sector and summarise current global initiatives to overcome these.

Although it is well established that battery electric vehicles are no more likely to cause a vehicle fire when compared to ICE vehicles, the type and intensity of these fires do pose a significant challenge. The current fire risk management infrastructure requires modernisation to enable effective fire safety risks surrounding electric transport.

This presentation will examine the main challenges in current fire risk management provisions in the road transport sector and summarise current global initiatives to overcome these. The presentation will also attempt to dispel common myths on fire risk from electric vehicles.

22. The HAR 1 Bradford Low Carbon Hydrogen Refuelling Project

Wednesday – 15:55-16:20 – Reading Room

Mark Danter, *Technical & Client Delivery Director – N-Gen Energy Solutions*

Mark Danter, *Technical and Client Delivery Director at N-Gen Energy Solutions, is a highly experienced chartered engineer with a proven track record of delivering multi-disciplinary project programmes including water, LPG, biodiesel, ethanol and white fuels, as well as methane. Mark has worked for various consultancies over the years but has been working for Northern Gas Networks (NGN) since 2012.*

Over the last six years, Mark has been leading NGNs work on hydrogen, developing strategies for the H21 suite of projects, including bid preparation and implementation for the Network Innovation Competition (NIC) and Network Innovation Allowance (NIA) projects. He was also previously Chair of the 'Network Safety and Impacts Board' which is led by the Government's Department for Energy Security and Net Zero (DESNZ).

Abstract:
At Hazardex Live 2024, N-Gen Energy Solutions' Technical and Client Delivery Director Mark Danter will be presenting on the HAR 1 Bradford Low Carbon Hydrogen Refuelling Project.

Along with our project partner, Hygen, N-Gen have been one of the few Developers that has been awarded HPBM funding in Hydrogen Allocation Round 1 (HAR1). The Bradford Low Carbon Hydrogen Project (BLCH) has the largest capacity of the successful projects at 35MW.

The premise of the project is to develop the production, storage and distribution on the old Northern Gas Networks site in Bradford. Using the brown field site has proved challenging in many ways. These include contaminated land, existing natural gas assets and proximity to wide ranging stakeholders.

23. Update from the regulator

Thursday – 09:20-09:55 – Billiard Room

Chris Buttrick, Principal Specialist Inspector – Health & Safety Executive

Chris Buttrick *joined HSE in 2017 as an Electrical, Control and Instrumentation (EC&I), Specialist Inspector of HSE's Chemicals, Explosives and Microbiological Hazards Division (CEMHD). Before joining HSE he worked for 5 years in EC&I Engineering and management roles at a single start-up COMAH establishment. Prior to that, he has a wealth of experience in consumer goods manufacturing, latterly in management but starting out as, and always remaining an engineer at heart. He is a focused and committed Chartered Engineer (CEng) and a Member of the Institute of Engineering & Technology (IET). A committed lifelong learner, he draws on all his career experiences including several changes of career direction to make the EC&I inspection topics accessible to the sites he inspects, and the regulatory colleagues he works with. Currently acting up as Principal Specialist Inspector for the ECCS discipline within CEMHD, heading up a nationwide team of front line ECCS specialists.*

Abstract:
Chris Buttrick, Principal Specialist Inspector, Health & Safety Executive, will be providing an update at Hazardex Live 2024 on a number of key messages affecting Major Hazard industries and Operators of Essential Services across the Chemical and Energy sectors.

The Electrical, Control and Cyber Security (ECCS) team will also be taking the opportunity to communicate how their delivery guide ensures consistency of inspection of ECCS aspects of risk control from Hazard through to Ex equipment.

24. Lessons on long-term regulatory compliance

Thursday – 09:55-10:20 – Billiard Room

Simon Wood, Environment, Health and Safety Specialist – Fuels Industry UK (formerly UKPIA)

*As Environment, Health and Safety Specialist, **Simon Wood** provides Fuels Industry members with expert advice on regulatory developments for environmental, process safety and occupational health and safety topics across the downstream oil sector. Simon Joined in January 2020 having previously gained experience with EDF Energy and the British Standards Institution developing and deploying strategies to deliver consensus through improved stakeholder understanding during negotiations.*

Abstract:
Fuels Industry UK (formerly UKPIA) will be at Hazardex Live 2024 with Environment, Health & Saftey Specialist Simon Wood discussing lessons on long term regulatory compliance and multi-decade timelines for moving from POPs for fire suppression.

The downstream oil sector trade body began its new phase as Fuels Industry UK, having previously been the United Kingdom Petroleum Industry Association (UKPIA), to demonstrate its evolving remit to champion low carbon fuels as well as traditional petroleum products.

The change reflects its members' ambition to manufacture and supply the biofuels, low carbon hydrogen and other low carbon fuels needed to meet the UK's ambitious net zero targets. Fuels Industry UK aims to shape an energy secure, low carbon fuels future for the UK that benefits everyone. Fuels Industry UK members are at the forefront of SAF delivery and are investing in future manufacturing capability in the UK. As principal users of hydrogen in the UK, the downstream sector can also be major first customers for low carbon hydrogen projects, to help fund their start-up and make them viable for other companies to use. In addition, Fuels Industry UK members have global expertise in Carbon Capture Utilisation and Storage (CCUS) projects, which will be vital in the transition to net zero.

25. Process Safety competence & the COMAH Strategic Forum

Thursday – 10:20-10:45 – Billiard Room

Neil Smith – Cogent Skills

***Neil Smith**'s expertise is in developing and delivering competence management, bespoke training solutions and workforce development consultancy services. Following on from a 14 year career as an Aircraft Engineering Artificer in the Royal Navy, he has spent the last 25+ years supporting the development of workforce skills across a range of manufacturing industry sectors. Joining Cogent Skills in 2008, and leading on their Process Safety Management programme activities since 2010 and competence management support services from 2015.*

Neil was instrumental in developing the PSM programme, its training standards, delivery network and quality-assured provision, and continues to work closely with employers and subject matter experts to design and develop a range of bespoke training and competence assessment solutions.

Abstract:
At Hazardex Live 2024, Neil Smith from Cogent Skills will be discussing process safety competence and the COMAH strategic forum.

As the specialists in skills for science and technology, Cogent Skills' purpose is to make sure businesses, people, and industry are future ready. It is a not-for-profit charitable organisation with a family of commercially focused companies committed to supporting the skills, needs and ambitions across the UK science and technology sector.

26. Delivering Net Zero: The Challenges and opportunities for storage terminal logistics

Thursday – 11:30-11:55 – Billiard Room

Peter Davidson, Executive Director – Tank Storage Association (TSA)

Peter Davidson *is Executive Director of the Tank Storage Association (TSA) which represents the interests of over 45 companies who operate around 300 terminals in the UK or provide equipment and services to the sector. Peter joined TSA following 10 years as the director of Safety, Commercial & Projects at the UK Petroleum Industry Association. Previous to this, Peter managed the Safety Automation Group for ABB in the UK.*

Abstract:
Peter Davidson, Executive Director of the Tank Storage Association (TSA), will speak at Hazardex Live 2024 about delivering net zero and the challenges and opportunities it poses storage terminal logistics.

One of the key issues in dealing with the Energy Transition is the huge range of potential scenarios and options to consider. Many of these scenarios are either optimistic or nebulous and may not attract investment and therefore may never happen. Conversely, there are many scenarios or developments that are realistic, or are even taking place already. This presentation will examine the energy transition and highlight the importance of tank storage in the energy infrastructure, legislative background, current trends and the threats and opportunities these present.

27. A new model for safety alarm operator response time requirements

Thursday – 11:55-12:20 – Billiard Room

Harvey T. Dearden, Director – SISSuite Ltd.

Harvey T. Dearden *is Engineering Director of HTS Engineering Group and a Director of SISSuite Ltd. and Time Domain Solutions Ltd. He is actively involved with the Institute of Measurement & Control and specialities include: Implementation of IEC61508/61511 (SIL), DSEAR/ATEX; Development/troubleshooting of control systems/strategies; Development of engineering management policy/ procedures; Auditing of fiscal measurement systems and Training on control/measurement/protection systems. He previously held senior engineering positions at Great Lakes Chemical, Associated Octel Company, Costain Oil and Gas & Process Ltd.*

Abstract:
Harvey Dearden, Director of SISSuite Ltd., will be presenting at Hazardex Live about original research that postulates a new model for the probability of effective alarm diagnosis as a function of available time.

Despite advances in technology the human operator remains a major component of the system. One of their critical roles is detecting, diagnosing, and responding to unplanned and unwanted situations. We provide alarms to inform them about these situations and prompt appropriate action.

It is routinely said that any safety related alarm must have an available operator response time of 10-30 minutes. Many users find this stipulation to be unrealistic: their expectations are of effective operator responses in much shorter time intervals. In fact, there are many ‘normal’ alarms where they would expect a response within this timescale, so it can be difficult to understand what this really means in practice.

On closer investigation it appears that the 40-year old reference that underpins the widely cited figures (of 10-30 minutes) is not well aligned with the circumstances prevailing in modern process plant that have properly managed alarm systems.

This paper considers the provenance of these figures and uses the original research to postulate a new model for the probability of effective alarm diagnosis as a function of available time. This is then coupled with other factors such as alarm annunciation techniques and control room staffing, and required action execution time, to identify the overall available time requirement.

Consideration is also given to the effect of the annunciation method and action execution system reliabilities, which if a given risk reduction claim is to be achieved, dictate the reliability requirement on the operator. This is turn will influence the available operator response time requirement.

28. Inherently safe design for hydrogen applications

Thursday – 12:20-12:45 – Billiard Room

Karina Almeida, Principal Consultant / UK Energy Transition Lead – Gexcon

***Karina Almeida** has 20 years professional experience in the energy industry, the last 10 years in process safety. She holds a PhD in Chemistry which has enabled her to apply knowledge to the development of energy-efficient processes including the extraction of second-generation biofuels from marine algae. Her current role encompasses not only hydrogen safety, but also CCS, ammonia, biofuels and other technologies related to alternative energy.*

Abstract:

At Hazardex Live 2024, Gexcon's Energy Transition Lead Karina Almeida will present a number of control and mitigation strategies within the hydrogen industry, which have been quantified and illustrated with the use of CFD modelling.

Hydrogen is expected to play a big role in the transition towards a more sustainable energy system, with numerous projects underway along the entire value chain from production through storage and distribution to a wide variety of end-user applications. Although the use of hydrogen in industry is not new, the energy transition is leading to many novel applications. Moreover, hydrogen is being put in close proximity to the general public, who lack the safety awareness and specialist training.

Safety is of paramount importance if hydrogen is to fulfil its promise in the energy transition; a serious accident would result in the loss of public support and license to operate. It could also seriously delay the introduction of new technologies. Therefore, every player in the hydrogen value chain needs to understand the hazards associated with the introduction of hydrogen, carefully evaluate the risks and put in place sufficient mitigation measures to reduces these risks to tolerable levels. However, time is of the essence when developing hydrogen projects, thus incorporating effective mitigation strategies and inherent safety concepts at the start of the project can avoid surprises and costly re-designs later on.

This paper will present a number of control and mitigation strategies based on Gexcon's experience within the hydrogen industry, which have been quantified and illustrated with the use of CFD modelling. For example, early isolation is key to limit the amount of hydrogen released, which could potentially lead to a vapour cloud explosion in case of delayed ignition. We will also present our insights regarding ventilation requirements in enclosures containing equipment handling high pressure hydrogen and how it relates to hazardous area classification.

The objective is to help process designers and project integrators understand the particular hazards of hydrogen and how these can be mitigated using inherently safer design principles, to ensure projects can be designed and operated safely.

29. Artificial Intelligence insights and opportunities

Thursday – 13:45-14:10 – Billiard Room

Dr Matt Celnik, Digital Innovation Team Lead – DNV

***Dr Matt Celnik** is a digital innovation team lead at DNV and a chartered chemical engineer. He has a passion for applying digital and data-driven solutions to real-world engineering problems. His team helps the energy sector embrace this technology in a trusted and secure way, guided by DNV's long history and expertise in assurance. Matt has a PhD from Cambridge University and has worked in varied academic, research and consulting roles throughout his career. His current focus is digital trust for emerging data-driven technologies – such as AI – and how they can support the energy transition. Matt is also one of the authors of the recent DNV report 'AI Insights – Rising to the challenge across the UK energy system'.*

Abstract:

Dr Matt Celnik, digital innovation team lead at DNV, will be speaking at Hazardex Live 2024 about Artificial Intelligence, offering insights into its uses and benefits, as well as the opportunities it brings to process safety.

Are you ready to hand over control of safety-critical systems to an AI operator? Computational agents already arguably out-perform human operators, even in safety-critical operations like flying aircraft. At least while things are going well. Generative-AI hints at the next generation of computational agent; those which adapt to unforeseen situations and react far quicker than a human. Indeed, our increasingly complex and distributed systems necessitate significant advances in computational technology to run effectively. So, should we marvel at the magnificence of AI and let it loose in our systems and, if so, how do we ensure it is safe?

DNV's report "AI Insights: Rising to the challenge across the UK energy system" consolidates industry thoughts on the AI landscape. We gathered insights from ten diverse organisations, supplemented by DNV research and other sources. Here we summarize the opportunities, barriers, and role of trust for engineering AI solutions.

30. Competency for the energy transition

Thursday – 09:30-09:55 – Reading Room

David Tomkin, Principal Consultant – DNV

***David Tomkin** is Principal Consultant at DNV and is also President-elect of the Institution of Gas Managers & Managers.*

Abstract:
At Hazardex Live 2024, David Tomkin, Principal Consultant at DNV, will discuss the importance of competency as part of the Energy Transition.

Competence in the traditional Oil and Gas sector is critical and fundamental to the safe operations. As part of the Energy Transition, it is vital as new energy sources and technologies are developed that the competency routes are quickly aligned to the transitioning process.

The introduction of new energy systems into the industry is at risk without the development for competent and skilled workers at all levels. The development of competency frameworks needs to be completed in tandem.

31. Transferability of skills following the energy transition

Thursday – 09:55-10:20 – Reading Room

Rolf Kinck, Sales Manager – Trainor

***Rolf Kinck's** is Sales Manager for Trainor Norway and has deep knowledge and competence as subject experts within sectors such as oil & gas, industry, engineering, and electrical installation companies. His extensive experience from electro and automation work in the Norwegian Navy and as sales manager for IKM Instrutek, accompanies several years as a Trainor course instructor before joining the sales team.*

Abstract:
Rolf Kinck, Sales Manager at Trainor, will speak at Hazardex Live 2024 about the transferability of skills following the energy transition and the need to train, or re-train, engineers for the transition.

This presentation will look at the key competencies in traditional industries and new industries and how they crossover. Rolf will also discuss the need to calibrate knowledge and competence, as well as the need to train mechanical workers following the energy transition. Finally, Rolf will also discuss the need to train electricians following the energy transition.

32. Role of technical standards for hydrogen and blends

Thursday – 10:20-10:45 – Reading Room

Tony Stonehewer, Principal Consultant – Pipeline Integrity Engineers

***Tony Stonehewer** has over 30 years' experience in gas transmission and distribution, starting in the northwest working with British Gas and then moving to the midlands where he headed up National Grid National Transmission System engineering policy and asset management teams. Tony developed Transco Engineering Requirements manual which formed the basis of engineering and safety management systems across all Gas Networks and was Group Head of Process for National Grid. In 2016 tony joined Pipeline Integrity Engineers (PIE) as Principal Technical Consultant providing engineering and management solutions to gas transmission and pipeline operators in the UK and Europe. Currently working on several projects developing technical standards to support the introduction of Hydrogen and Natural Gas / Hydrogen blends into existing natural gas distribution and transmission networks including the development of Hydrogen Reference Standards and Supplements for IGEM.*

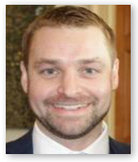
Abstract:

Tony Stonehewer, Principal Consultant at Pipeline Integrity Engineers, will be speaking at Hazardex Live 2024 a first of a kind series of hydrogen standards covering the new and repurposed transmission/ distribution pipelines for hydrogen.

IGEM is supporting the UK Government's commitment to achieve net-zero carbon emissions by 2050, working with the range of research and demonstration projects that are underway to investigate the feasibility of using hydrogen in place of natural gas within the national transmission and distribution systems. In particular, for these projects to achieve their full scope of work, it is recognised that engineering standards will have a critical role. Working with research organisations, leading academic institutions and industry experts IGEM have developed and published a (first of a kind) series of hydrogen standards covering the new and repurposed transmission/ distribution pipelines. This included a standard covering the mechanism or performing hazardous area classification for hydrogen installations including blends.

33. Hazard management in a developing hydrogen industry

Wednesday – 13:45-14:10 – Reading Room



Gary Toes, Consultant – DNV

***Gary Toes** is a Safety Consultant with 20+ years' experience in Technical and Process Safety. He has knowledge of both offshore and onshore domains within the Oil & Gas industry, and the relevant UK and European regulations governing both. His recent experience also covers safety assessments and regulatory compliance for green hydrogen and green ammonia projects.*

Abstract:

At Hazardex Live 2024, DNV Safety Consultant Gary Toes will speak about understanding the properties of hydrogen that influence process hazards, how those hazards manifest in practice, and the control measures that are needed to manage the risk.

Hydrogen use has been commonplace in industry for many years; in oil refineries, in ammonia and methanol production, and in space exploration, to name a few examples. However, the scale of use, both at individual project and industry level, is increasing significantly. This has placed additional focus on the safety aspects of hydrogen use and the hazard management approaches that need to be adopted for the rapidly growing hydrogen industry.

Some of the properties of hydrogen give rise to increased risks compared to other common fuels being used at the same process conditions. Therefore, this session will focus on understanding the properties of hydrogen that influence process hazards, how those hazards manifest in practice, and the control measures that are needed to manage the risk.

It will address ongoing research into the modelling of hydrogen releases such that adequate risk assessments can be performed. The application of typical control measures that are used in the process industries to address these risks will be discussed with reference to their efficacy and validation for hydrogen. The importance of Inherently Safe Design (ISD) to manage the potential increase in risk will be highlighted.

34. FutureGrid – repurposing the UK's gas transmission system

Thursday – 11:55-12:20 – Reading Room

Lloyd Mitchell, FutureGrid – Deblending Manager – National Gas

Lloyd Mitchell *joined National Gas in 2016 as a Pipelines Engineer and quickly identified the opportunity of hydrogen to decarbonise the UK's Gas Transmission System. Since then he has led numerous innovation projects covering System Architecture, Materials and Asset Compatibility.*

In 2021 he Joined the FutureGrid team as Engineering Lead and in 2023 took on the role of managing the Phase 2 project FutureGrid Deblending for Transport. Lloyd is a Chartered Engineer and a member of the IMechE.

Abstract:

At Hazardex Live 2024, Lloyd Mitchell from National Gas will discuss the FutureGrid project which is the first of many steps towards a full-scale conversion of the existing National Transmission System (NTS) to transport hydrogen. The project involves constructing a test facility from decommissioned assets that will be used to carry out a wide range of hydrogen tests in an offline environment, to demonstrate its effect on our assets, as well as the operation of our network.

Hydrogen provides a major opportunity for the UK with the potential to decarbonise industry, transport, heat and power applications whilst ensuring the UK maintains a diverse and resilient energy system. The most cost-effective way to achieve this is to make use of the extensive gas transmission infrastructure in the UK which already links key industrial clusters in the UK and has a world-class safety record.

Although hydrogen is similar in many ways to natural gas it poses unique safety challenges and so National Gas have embarked on an extensive programme of work to understand the risks posed by hydrogen and how these might be managed. FutureGrid builds on years of research to demonstrate how gas transmission assets will perform in a realistic environment, gathering valuable data which will form the basis of our hydrogen safety case.

35. Competency and skills for the Energy Transition in context

Thursday – 13:45-14:10 – Reading Room

Huw Bement, Managing Director – CompEx Certification

Huw Bement *joined certification body CompEx as Executive Director in January 2021 and has already started looking at ways to guide the scheme through the next phase of its journey. CompEx has an incredible legacy spanning nearly 30 years, so Huw is working to ensure that the needs of all its stakeholders are met for many more years to come. Huw aims to leverage CompEx's technical expertise to increase the scheme's reach and support improvements to standards and safety..*

Abstract:

Huw Bement, Managing Director of CompEx Certification, will be speaking at Hazardex Live 2024 about competency and skills for the energy transition.

This presentation will reflect on the wider context of competency and skills in the energy transition. Research suggests that a significant proportion (up to 90%) of workers within the Oil & Gas sector have transferable skills that could be relevant for renewable technologies such as wind, CCUS and Hydrogen. However, there are factors that could have a profound impact on how this existing workforce can effectively support the energy transition. In the most optimistic scenarios, studies suggest that the offshore sector employment could increase from 150,000 or so in 2023 to more than 200,000 by 2030.

Planned infrastructure projects in other parts of the economy, such as nuclear and rail, will also call upon the established workforce in the next decade. A shortage of skilled labour could not only constrain project delivery and investment decisions; but from a skills development perspective, where will we recruit trainers and assessors from? And what lessons can we take from our own experience across hazardous areas?

36. Hydrogen safety standards and regulations

Thursday – 14:10-14:35 – Reading Room

James Steven, Business Development & Growth Manager – DNV

***James Steven** is an electrical and electronic engineer with over 20 years' experience of dealing with hazardous environments and applications. Having worked across the consumer, maritime, oil & gas and nuclear industries has provided a wide range of experience being able to draw upon the best practices across these sectors. He now holds the role of Business Development & Growth Manager at DNV UK Ltd where he leads the Business Development and New Service/Application Development for the supply chain markets. He has been key in extending DNV's Hazardous area Services to the UK.*

Abstract:

DNV's Business Development & Growth Manager James Steven will be presenting at Hazardex Live on the standards & regulations related to the safe management and use of hydrogen.

With the increased potential for use of hydrogen to decarbonise industries, the demand and its use will need to significantly increase if we are to meet the 2030 and 2050 decarbonisation targets.

Although the use of hydrogen for certain applications may be new, the standards setting on how to deal with managing the hazards from hydrogen use are well defined.

In the session we will explore some of the key standards and approaches for management of safety with hydrogen. In addition, we will look at the some of the main regulatory requirements currently in place in areas such as UK, Europe, USA and Asia.

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Southampton, UK
In the Regions Event

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Harrogate, UK
Hazardex Live 2025

19th March 2025
Muscat, Oman
Hazardex Middle East

24th March 2025
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