## Conference programme

**Note:** the programme may be subject to alteration

### Tuesday 7 November 2023

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>12:00–13:30</td>
<td>Registrations with poster and exhibition viewing</td>
</tr>
<tr>
<td>13:30–13:45</td>
<td><strong>Opening session</strong></td>
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<tr>
<td>13:30–13:45</td>
<td>Welcome – Eamon Chandler, Chair, Hazards 33 Technical Committee</td>
</tr>
<tr>
<td>13:45–14:30</td>
<td><strong>Plenary presentation</strong></td>
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<tr>
<td>13:45–14:30</td>
<td><strong>Developments in Human Factors and Behavioural Safety</strong></td>
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<tr>
<td></td>
<td>Professor Rhona Flin, Emeritus Professor, University of Aberdeen and Professor of Industrial Psychology, Robert Gordon University, UK</td>
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<tr>
<td>14:30–15:15</td>
<td>Refreshment break with poster and exhibition viewing</td>
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<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>15:15–15:40</td>
<td><strong>Catastrophic Incidents – Prevention and Failure</strong></td>
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<td></td>
<td>Trevor Hughes, Hughes Consultancy and Research, UK</td>
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<tr>
<td>15:45–16:10</td>
<td><strong>Guidance for UK Hydrogen Safety Case Development</strong></td>
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<td></td>
<td>Sean Baker and Nikhil Hardy, ERM, UK</td>
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<tr>
<td>16:15–16:40</td>
<td><strong>Lessons Learned from Past Incidents/Near-misses – WestJet Flight 2652</strong></td>
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<td>Abbie Harvey, Civil Aviation Authority, UK</td>
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<tr>
<td>16:45–17:10</td>
<td><strong>Identifying and Managing Weak Signals – The Platypus Philosophy</strong></td>
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<td>Trish Kerin, I ChemE Safety Centre, Australia</td>
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### Hydrogen Hazards

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td></td>
<td><strong>Assessment Techniques for Supporting ALARP</strong></td>
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<td>Richard Tiffin, ESR Technology, UK</td>
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<td></td>
<td><strong>Demonstration for Energy Transition Projects</strong></td>
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<td></td>
<td>Hema Divya Katma, University of Aberdeen, UK and Rahul Raman, Kayper Engineering, LLP, India</td>
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<td></td>
<td><strong>Hydrogen as a Fuel for Industry: Technical and Safety Challenges</strong></td>
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<td>Luke Butcher, ESR Technology and Graeme Cook, Aecom, UK</td>
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### Assurance

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>15:15–17:15</td>
<td><strong>Development of a Practical Methodology for Assessing the Major Accident Risks Associated with Carbon Dioxide Pipelines in Areas of Topography</strong></td>
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<tr>
<td></td>
<td>Robert Melville, Alison Thackery and Ian Lines, Kent PLC, UK</td>
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<td></td>
<td><strong>Performing a Technical Audit With Some of the Findings</strong></td>
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<td>Robert Canaway, Suregrove, UK</td>
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<tr>
<td></td>
<td><strong>Development of a Novel Risk Assessment Methodology to Assess and Communicate the Effectiveness of Risk Control Measures and Strategies Applied to a Covid-19 Scenario</strong></td>
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<td></td>
<td>Colin Chambers, April Lockhart and Zoe Chaplin, Health and Safety Executive, UK</td>
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### Modelling & Simulation

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>15:15–17:15</td>
<td><strong>Data Driven Gas Dispersion Modelling: Leveraging Machine Learning and Artificial Intelligence</strong></td>
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<td></td>
<td>Kehinde Shaba, Anglo American, UK</td>
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### Workshops

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>15:15–17:15</td>
<td><strong>Human Factors in the Chemical and Process Industries</strong></td>
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<td></td>
<td>Presented by I ChemE and The Keil Centre</td>
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### Technical committee

Thank you to our technical committee members who volunteer their time to build the programme and facilitate discussions during the conference:

- Eamon Chandler – Chair Consultant, (formerly Royal Dutch Shell)
- James Birch (BakerRisk)
- Matt Clay (Health and Safety Executive)
- Tony Clayton (Environment Agency)
- Paul Coleman (Marsh)
- Leonidas Constantiou (Shell)
- Andrew Cierand (Shell)
- Chris Fort (ExxonMobil)
- Zsuzsanna Gyenes (European Commission Joint Research Centre)
- David Hatch (Process Safety Integrity)
- Ashley Hynds (WSP)
- Vira Jovica (VRU Consultancy Ltd)
- Trish Kerin (IChemE Safety Centre)
- Caroline Ladlow (Kindlow Safety Services)
- Diego Lisbona (Office for Nuclear Regulation)
- Andy Mackiewicz (AMPA Associates)
- Rob Magraw (BakerRisk)
- Angela Rodriguez Guio (BP)
- Arvinder Sambhi (Wood Group)
- Khalid B Shaiful (PETRONAS)
- Felicia Tan (BP)
- Jérôme Taveau (Si Group)
- Christopher Tighe (Imperial College)
- Ivan Vincz (ASK Consultants)
- Louise Whiting (Barberton Ltd)
- Azzam Younes (AyEnergi Consulting)
Tuesday 7 November 2023

17:30–18:15 Trevor Kletz Hazards Lecture
New Energy and Sustainable Technology
Amir Gerges, Vice President, Group Safety, Shell, US
Imperial

18:15–18:30 IChemE update

18:30–20:00 Welcome reception
Britannia

Wednesday 8 November 2023

08:30–09:15 Plenary presentation
Process Safety Challenges from a North American Perspective
Dr Faisal Khan, Director, Mary Kay O’Connor Process Safety Center, USA
Imperial

09:15–10:00 Plenary presentation
Developments in Hydrogen Infrastructure and Strategy
Dr Stuart Hawksworth, Head of Centre for Energy and Major Hazards, Health and Safety Executive, UK
Imperial

10:00–10:30 Refreshment break with poster and exhibition viewing
Britannia

AM

Safety Culture – Leadership

Non-routine Operations

Imperial
Session chair: Jérôme Taveau

Trafalgar
Session chair: Louise Whiting

10:30–10:55 It Starts at the Top – the Effect of Human Factors and Leadership on Safety
Yokogawa

Operational Risk Assessment: Sharing Good Practice for the Control of Major Accident Risk
Tom Downie, INEOS FPS, UK

11:00–11:25 Engaging Leadership: Getting Better Insights from Incident Investigations
Stuart King, Energy Institute; Tony Gower-Jones, Stichting Tripod Foundation; and Ibrahim Khan, Energy Institute, UK

Guidelines For Managing Abnormal Situations
Roger Stokes, BakerRisk, UK

11:30–11:55 Process Safety Leadership Site Visit Toolkit
Ashley Hynds, DNV, UK

Pre Start-up Safety Review (PSSR): Significance, Common Pitfalls and Insights for an Effective Review
Mohammad Moonis and Mohammad Mulhim, Saudi Aramco, Saudi Arabia

12:00–12:25 The Difference That Makes the Difference – Identifying and Applying Criteria for Safety Leadership Excellence
Rachael Cowin, Legitimate Leadership, UK

Outside in Risks (OIR)
Pratik Thosrival, Shell, India

Lunch break with poster and exhibition viewing
Britannia

Hydrogen Experimental Results

Bracebridge
Session chair: Chris Tighe

Ballacrane
Session chair: Vira Jogia

Waterloo

10:30–11:00 Lessons Learned from Experimental Tests Concerning Liquid Hydrogen Releases
Federica Tamburini, Federico Ustolin and Nicola Paltrinieri, Norwegian University of Science and Technology, Norway; Ernesto Salzano, Valerio Cazzani, University of Bologna, Italy

Artificial Intelligence in Safety, the Future or a Recipe for Disaster?
Craig Paterson and David Jamieson, Salus Technical, UK

11:00–11:30 Digital Image Processing for the Estimation of the Heat Flux Entering a Liquid Hydrogen Tank Exposed to a Fire
Alice Schiarioli, Norwegian University of Science and Technology, Norway; Giordano Emrys Scarponi, University of Bologna, Italy; Christian Mata, Universitat Politècnica De Catalunya, Spain; Valerio Cazzani, University of Bologna, Italy; and Federico Ustolin, NTNU, Norway

Embedding IOGP Process Safety Fundamentals in the Frontline using AI
Edwin Bailey, Ithaca Energy (UK) Limited, UK

11:30–12:00 Quantification of Liquid Hydrogen Jet Fires from Large Scale Experiments
Steven Betteridge, Shell, UK

Driving Process Safety Performance Through Intelligent Dashboard
Sai Vijaya Krishna Malluri, HMLE, India

12:00–12:25 Effect of Hydrogen Depressurization on Steel Pipe in Case of Puncture: Experimental Results and Analysis
Vincent Blachetiere, GRTgaz; Guillaume Leroy, INERIS; Jérôme Poenou, and Magali Polo, GRTgaz, France

Enhancing Process Safety Understanding Through Virtual Reality: An Interactive Simulation of an Offshore Installation Well Bay
Josh Crawley and Dr E J Bailey, Ithaca Energy (UK), UK

Process safety pioneer, Trevor Kletz, made a significant contribution to the Hazards conference series from its outset in 1960, speaking regularly, reviewing papers and serving on the technical committee for many years.

Following his death in 2013, the annual Trevor Kletz Hazards Lecture was created to recognise his contribution.
### Wednesday 8 November 2023

#### PM

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
<th>Location</th>
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<tbody>
<tr>
<td>14:00–14:25</td>
<td>Safety Culture in an Operating Environment</td>
<td>Using Outputs from Safety Critical Task Analyses to Support Rapid Identification of Human Factors Issues in Related Tasks</td>
<td>Dominic Furniss and Jamie Henderson, Human Reliability Associates; Karam Singh Blinder, Johnson Matthey, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>15:00–15:45</td>
<td>Refreshment break with poster and exhibition viewing</td>
<td></td>
<td></td>
<td>Britannia</td>
</tr>
<tr>
<td>15:45–16:10</td>
<td>How Much Chronic Unease is Enough?</td>
<td>Integration of Qualitative Human Factors Safety Critical Task Analysis with Wider Engineering Risk Assessments</td>
<td>Jamie Henderson and Dominic Furniss, Human Reliability Associates, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>16:15–16:40</td>
<td>Learning from Process Safety Events – a Culture Improvement Journey</td>
<td>Leak Testing When Reinstating Plant – It’s More Complicated Than You Think</td>
<td>Michelle Cormack, Perenco and Andy Brazier, AB Risk, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>16:45–17:15</td>
<td>Kick Starting Process Safety in the Pulp and Paper Industry in Western Canada</td>
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<td>Trafalgar</td>
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<tr>
<td>17:15–17:45</td>
<td>Facilitated discussion</td>
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<td>Trafalgar</td>
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<tbody>
<tr>
<td>13:00–15:00</td>
<td>Overwhelmed by Safety Critical Task Identification?</td>
<td>IChemE Major Hazards Committee Process Safety Competencies Project – an Update</td>
<td>Helen Conlin, Essar Oil, UK and Carolyn Nicholls, RAS, UK</td>
<td>Waterloo</td>
</tr>
<tr>
<td>15:30-17:30</td>
<td>Delta HAZOP</td>
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<td>Presented by IChemE</td>
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### Social event (ticket only)

If you have registered to attend the social event, this is indicated on your name badge. This is your ticket, so don’t forget to bring it with you. Dress code is casual.
**Thursday 9 November 2023**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>09:00–09:45</td>
<td>Plenary presentation&lt;br&gt;Simon Holbrook, Senior Advisor, UK BAT Team, Environment Agency, UK</td>
<td>Imperial</td>
</tr>
<tr>
<td>09:45–10:30</td>
<td>Refreshment break with poster and exhibition viewing</td>
<td>Britannia</td>
</tr>
<tr>
<td>10:30–10:55</td>
<td>Enabling a Safe Energy Transition – How Industry Can Work with its Regulators to Seize the Opportunities of Net Zero&lt;br&gt;Max Walker, Health &amp; Safety Executive, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>11:00–11:25</td>
<td>Mitigation Strategies for Lithium Ion Battery Energy Storage Systems&lt;br&gt;Denise Beach, FM Global, USA</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>11:30–11:55</td>
<td>Performing a Quantitative Risk Assessment for Utility-scale LiFePO4 Battery Energy Storage Systems: a Case Study for First-of-a-kind Installation in South Africa&lt;br&gt;Liza Smit and Adriaan van Wyk, Proconics, South Africa; Oliver Heynes and Allen Miller, Insight Numerics, USA; Richard Walls and Natalia Flores, Qwizor, Stellenbosch University, South Africa; Peter McDonald, Chris Stirling and Andrew Nicholson, Viper Applied Science, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>12:00–12:25</td>
<td>Practical Process Safety Decision Making in Decarbonisation and New Technologies Plant Design&lt;br&gt;Helen Fennell and Stuart Hunter, Petrofac, UK</td>
<td>Trafalgar</td>
</tr>
<tr>
<td>12:30–13:30</td>
<td>Lunch break with poster and exhibition viewing</td>
<td>Britannia</td>
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</tbody>
</table>
Don’t forget that you can watch Hazards 33 presentations and download the conference papers on the Hazards On-Demand portal.

If you’re new to the Hazards On-Demand portal, or need a reminder about how to log on, check your email for more details.

You have unlimited access to the Hazards On-Demand portal until November 2024. As an added bonus, you’ll also find a large selection of presentations and papers from previous Hazards conferences.

Please note that not all presenters have provided videos/papers to accompany their presentations.

Thursday 9 November 2023

**New Energies**
- 13:30–13:55
  - Good Practices on Effectively Managing Process Safety Issues When Replicating a Modular Midscale LNG Design
    - Veronica Luna, Fluor Corporation, Philippines
  - Jump to It! – A New Model for Safety-Alarm Operator Response Time Requirements that Avoids Misplaced Conservatism
    - Harvey Dearden, SIS Suite and Andy Brazier, AB Risk, UK

**Human Factors**
- 14:00–14:25
  - Explosion Safety in Anaerobic Digestion Sites: Where It Can Go Wrong and Guidance to Avoid That Happening
    - Sarah Bergin, Graham Atkinson, Alan Bewick, Brian Crook, Tim Small and Lee Schilling, Health & Safety Executive, UK
  - Situation Awareness as a Factor in Accidents and Incidents
    - Graeme Dick and Mike Pollard, Refflek AS, Norway

**Environmental & Climate Change**
- 14:30–14:55
  - Valuation of the Environment for COMAH Cost-benefit Analysis
    - Amaa O’Reilly, Energy Institute and Rob Ritchie, RAS, UK
  - NaTech Hazards – What Are They? Why Should We Care? And What Can We Do?
    - Aimee Russell, Carolyn Nicholls and Robert Ritchie, RAS, UK

**Technical Safety**
- 14:00–14:25
  - Extracting Performance Influencing Factors (PIFs) from Accident Reports
    - Andrea Rossi and Richard Or (Ming Ho Or), Empiros, UK

**Closing session**
- 15:00–15:25
  - Facilitated discussion

**Facilitated discussion**
- 15:30–16:00
  - Eamon Chandler, Chair, Hazards 33 Technical Committee

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**Presentation videos and papers**

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Dr Ken Patterson

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