




10:30–12:30	Workshop	Bowties Making Sense of Safety (prior registration required)	 Gold sponsor		
13:00–13:15	Opening session	Welcome – Ken Rivers, Chair, <i>Hazards 32</i> Technical Committee			
13:15–14:00	 Plenary speaker Jane Lassey	<i>Regulatory and Business Strategies in a Rapidly Changing World</i> Jane Lassey, Director, Chemicals, Explosives and Microbiological Hazards Division, Health and Safety Executive, UK			
	Lessons Learned I	Hydrogen Hazards I	Asset Integrity	Consequence Assessment & Modelling I	
	Queen's Suite 1 Session chair: David Hatch	Queen's Suite 2 Session chair: Andy Crerand	Queen's Suite 3 Session chair: Arvinder Saimbi	Queen's Suite 4 Session chair: Eamon Chandler	
14:10–14:35	<i>Learning from Global Upstream Process Safety Event Data</i> Mariana Carvalho & Wendy Poore, International Association of Oil & Gas Producers (IOGP), UK; David Fargie, BP, UK; Kirsty Walker, Schlumberger, UK	<i>COMAH in the Hydrogen Economy</i> Jack Davy, Wood, UK	<i>Ageing Plants – Corrosion is the Real Enemy but There Are Other Problems</i> Robert Canaway, Suregrove, UK	<i>Pipeline Release Rate Model (PiRRaM) for Pressure Liquefied Gases</i> Andrew Newton, Health and Safety Executive, UK	
14:40–15:05	<i>Inherent Safety on High-Hazard Plant</i> Malcolm Toft & Peter Hunt, Axiom Engineering Associates, UK	<i>Hydrogen Safety Case Gap Analysis and Regulation Review</i> Widya Wahyuni, ERM, UK	<i>Failure of a 30 Inch Pipeline Due to Atmospheric Corrosion</i> Keith Birkitt, James Hobbs & Ian Chapman, Health and Safety Executive, UK	<i>Assessment of Vent Pipework Structural Support Response to Internal Explosion</i> Andrew Benton, ESR Technology, UK	
15:10–15:35	<i>Management and Technical Factors Emerging from the Inspection Activity After a Major Accident</i> Romualdo Marrazzo, ISPRA, Italy; Paolo Bragatto, INAIL, Italy; Armando De Rosa, CNVVF, Italy	<i>The Development of Supplements to IGEN/TD/1 Edition 6 and IGEN/TD/13 Edition 1 for Hydrogen Service</i> Andrew Cosham, Ninth Planet Engineering, UK; Jane Haswell, Gary Senior, Tony Stonehewer & Nikki Barker, Pipeline Integrity Engineers, UK; Mike Acton, DNV, UK; Ian McCluskey, Institution of Gas Engineers & Managers (IGEM), UK	Facilitated discussion		
15:40–16:00	Refreshment break				
	Process Safety Competencies	Hydrogen Hazards II	Fire & Explosion Hazards	Consequence Assessment & Modelling II	
	Queen's Suite 1 Session chair: Louise Whiting	Queen's Suite 2 Session chair: Andy Crerand	Queen's Suite 3 Session chair: Arvinder Saimbi	Queen's Suite 4 Session chair: Eamon Chandler	
16:00–16:25	<i>It's the People, Dammit! Assessing Process Safety Competence: One Company's Approach</i> Ken Patterson, Ken Patterson Process Safety, UK; Gillian Wigham, Synthomer, UK; Paul Bruffell, Consultant, Malaysia	<i>Validation of Hydrogen Jet Fire Model in FRED</i> Steven Betteridge & Pratap Sathiah, Shell, UK	<i>Application of Finite Element Methods for Evaluating Hazards to Equipment</i> David Powell & David Bogosian, Baker Engineering and Risk Consultants, USA	<i>Progress in CFD Simulation of Deflagration Using PDRFOAM</i> Sriram Raghunath, Pratap Sathiah & Pradeep Kumar Pavalavanni, Shell, India	
16:30–16:55	<i>Elevating Competency Frameworks Through eLearning Solutions: Lessons Learned from COVID & Beyond</i> Kristin Robbins & Lisa Ruth, IoMosaic, USA	<i>Is Ventilation Your Trustworthy Old Friend When It Comes to Hydrogen? An Investigation of Hydrogen Dispersion and Vented Explosions</i> Karina Almeida Leñero & Pablo Giacopinelli, Gexcon, UK	<i>Fire and Gas Mapping: Comparative Impact of Different Standards</i> Shamsudeen Hassan & Lorna Henson, ESR Technology, UK	<i>A Shielded Thermal Flux and Impacted Jet Fire Model</i> Andrew Lawson & Ed Walton, ESR Technology, UK	
17:00–17:25	<i>Facilitator Competence for Human Reliability Assessments</i> Lorraine Braben, Braben Consulting, UK	<i>DSEAR and RGP in a Novel Nuclear Application</i> Keith Johnson, Matthew Webber, Jeff Tattersall & Gareth Davies, Sellafield Ltd, UK	<i>Analysing & Managing Flammable Atmosphere Risks Using Bowties</i> David Hatch, Process Safety Integrity, UK	<i>Validation of Recent Improvements in Phast Dispersion Modelling</i> Frank Hart & Mike Harper, DNV, UK	
17:30–18:00	Facilitated discussion	Facilitated discussion	Facilitated discussion	Facilitated discussion	
18:00–18:15	Updates and welcome	Steven Flynn, Deputy Chair, IChemE Major Hazards Committee Peter Hunt, Axiom Engineering Associates			
18:15–19:45	Welcome drinks reception	Sponsored by  Axiom Engineering Associates Ltd Maximising Assets - Minimising Risk			

This is a draft programme and is subject to change.

09:15–10:00	 Plenary speaker Peter Davidson	<i>The Mechanics of Process Safety Leadership: What Have We Learnt?</i> Peter Davidson, Executive Director, Tank Storage Association, UK		
10:00–10:30 Refreshment break				
	Safety Leadership Queen's Suite 1 Session chair: James Birch	Risk Assessment Queen's Suite 2 Session chair: Louise Whiting	Process Safety Management Queen's Suite 3 Session chair: Ashley Hynds	Consequence Assessment & Modelling III Queen's Suite 4 Session chair: Rob Magraw
10:30–10:55	<i>Viral Safety Transformation</i> Urbain Bruyère, ERM, UK Available on-demand only	<i>Risk Assessment Matrices—Fit for Purpose?</i> Tomm Childs, TGE Gas Engineering, UK	<i>How Stena Drilling's Innovative Process Safety COVID-19 Response Helped To Improve Regulatory Compliance, Cost Efficiencies and Productivity</i> Chris Carbaugh, Stena Drilling, UK	<i>Investigating a Complex Energetic Decomposition Incident Using Kinetic Modelling to Establish Safe Manufacturing Conditions</i> Stephen Rowe & Keith Middle, DEKRA, UK
11:00–11:25	<i>Safety Leadership – a Nuclear Industry Perspective</i> Nick Shaw, Office for Nuclear Regulation, UK	<i>LOPA – What's the Target?</i> Carolyn Nicholls & Jordan Smith, RAS, UK	<i>Process Safety Management: Beyond the Norm</i> Nor Afida binti Sikandar Bacha & Yogendren Sevakumaran, PETRONAS, Malaysia	<i>Steel Fragilisation Due to Emergency Depressurisation to Protect Gas Compressor: Experiment and Modelling</i> Vincent Blanchetière, Kevin Gault, Yanshu Wang & Maxime Charrier, GRTgaz, France
11:30–11:55	<i>Mind the Gap. The Case for a Formally Agreed ISO Standard for Process Safety</i> Andrea Longley, Scott Bader, UK	<i>Bridging the Gaps for Industrial Risk Assessment and Emergency Response Planning</i> Andre Perseval, Shamrock HSE, Trinidad & Tobago; Mark Baldeo, Arkulus Solutions, Trinidad & Tobago	<i>Contaminated Wounds: a Risk Assessment Challenge</i> Tim Boland, Richard Cooper & Gareth Davies, Sellafeld Ltd, UK	<i>Developing a Solid-Flame Model for Assessing Consequences of Rectangular Pool Fires and Trench Fires</i> Yongfu Xu, David Worthington & Adeyemi Oke, DNV, UK
12:00–12:25	<i>Elevating Process Safety Leadership and Culture</i> Yogendren Sevakumaran, Muhammad Nazri Jaafar & Mohamad Hanif Yusof, PETRONAS, Malaysia	<i>Risk Based Prioritisation of Maintenance Backlog</i> Chetan Birajdar & Mark Jefferson, Koch Technology Solutions, UK	Facilitated discussion	<i>Development of a Resilience Model for the Analysis of Process Systems at the Early Design Stage</i> Freya Vesey & Joan Cordiner, University of Sheffield, UK
12:30–13:00	Facilitated discussion	Facilitated discussion		Facilitated discussion
13:00–14:00 Lunch break				
	Digitalisation I Queen's Suite 1 Session chair: Matt Clay	Safer Plant I Queen's Suite 2 Session chair: James Birch	Education I Queen's Suite 3 Session chair: Chris Tighe	Safety Instrumented Functions (SIFs) Queen's Suite 4 Session chair: Andy Crerand
14:00–14:25	<i>Cyber Security: What Our Systems Are Trying to Tell Us and Why We Need to Listen</i> David Allen, ABB, UK	<i>Safe Plant Reinstatement Following Intrusive Work: New Energy Institute Guidance</i> Peter Webb, BeyondRisk, UK	<i>Pay it Forward... or Backwards! The Importance of Mentorship and Knowledge Sharing</i> Kayley Clusker, Atkins, UK	<i>SIF Testing – It's More Complicated Than You Think</i> Andy Brazier, AB Risk, UK
14:30–14:55	<i>Effective Management of Change (MOC) Digitalisation</i> Liew KuoFung & YeeKiong Thien, PETRONAS, Malaysia	<i>Operational Tabletop Drills to Improve Emergency Response Capabilities and Process Safety Culture</i> Esra Mermi, Tupras, Turkey	<i>From Theory to Practice: a Training Course to Spread the Safety Rules and Warnings About Hydrogen Safety</i> Romain Jambut, Vincent Blanchetière & Gilles Chatelet, GRTgaz, France; Christopher Henoch, CNPP, France; Anne Leprince, Storengy, France; Claire Saint-Macary, Terega, France	<i>Final Element Failure Alarms: Are They an Essential Feature of Managing Functional Safety for Your SIFs?</i> Ian Kemble, ABB, UK
15:00–15:25	<i>Digitalising for Value Generation – How, When and Where to Use Big Data Analytics for Remote Monitoring and Inspection of Operating Assets</i> James Lamond, ABB Energy Industries, UK	<i>Behavioural Safety: Completing the Plan-Do-Check-Act Cycle with Cultural Cause Analysis</i> Brad Eccles & Rick Curtis, ABS Group, UK	<i>Discussion: IChemE's Role in Teaching Process Safety to Chemical Engineering Undergraduates</i> Ken Patterson, Ken Patterson Process Safety, UK	Facilitated discussion
15:30–16:00 Refreshment break				
	Digitalisation II Queen's Suite 1 Session chair: Matt Clay	Hydrogen Network Queen's Suite 2 Session chair: Azzam Younes	Education II Queen's Suite 3 Session chair: Chris Tighe	Safer Plant II Queen's Suite 4 Session chair: Andy Crerand
16:00–16:25	<i>Is the Time Right to Digitise the HAZOP?</i> Angel Casal, Vysus Group, Spain	<i>Gas Transmission Network Conversion to Hydrogen: Impact on Explosive Atmosphere Sizing</i> Vincent Blanchetière, Romain Jambut & Pierre Quillatre, GRTgaz, France	<i>How I Became A Better Safety Engineer</i> Keith Miller, Safety & Reliability Group, IMechE, UK	<i>Process Safety: Keeping the Peace in a Post War Age</i> Angus Keddie, Process Safety Matters, UK
16:30–16:55	<i>E-Hazop: a Fresh Approach to Reviewing Electrical Systems</i> Rob Fogg, ABB, UK	<i>Comparison of the Risks Associated with Natural Gas and Hydrogen Distribution Networks</i> Andrew Phillips & Ann Halford, DNV, UK; Russ Oxley, Northern Gas Networks, UK	<i>IChemE Major Hazards Management Priorities</i> Steven Flynn, Institution of Chemical Engineers (IChemE), UK	Facilitated discussion
17:00–17:30	Facilitated discussion	Facilitated discussion	Facilitated discussion	
19:00–22:00 Social event at the Double Tree by Hilton Harrogate Majestic Hotel & Spa (ticket only)				

This is a draft programme and is subject to change.

08:30–09:15	 Plenary speaker Steve Elliott	<i>Building a Safer Future</i> Steve Elliott, Chief Executive, Chemical Industries Association (CIA) & Chair, Building a Safer Future (BSF), UK		
09:15–10:00	 Trevor Kleiz Hazards Lecture Dame Judith Hackitt	<i>Learning Lessons – Why Is It So Hard and Why Ethics Matter to Engineering</i> Dame Judith Hackitt, Chair, Enginuity, UK		
10:00–10:30	Panel discussion	<i>Meeting the Major Process Safety Challenges in Industry</i>		
10:30–11:00	Refreshment break			
	Clean Energy I Queen's Suite 1 Session chair: Rob Magraw	ATEX/DSEAR I Queen's Suite 2 Session chair: Andy Mackiewicz	Lessons Learned II Queen's Suite 3 Session chair: David Hatch	Assurance Queen's Suite 4 Session chair: Ashley Hynds
11:00–11:25	<i>Battery Warehouses – the Major Accident Challenge</i> Pat Swords, PM Group, Ireland	<i>20 Years of DSEAR – a Retrospective View</i> Tony Ennis, Haztech Consultants, UK	<i>Shipping and Storing Polymerizable Substances: a Styrene Incident, Complex New Legislation and How to Do It Right</i> Stephen Rowe, Kamran Rohan Arif & Adelia Moraleja Perez, DEKRA, UK	<i>Major Common Issues Arising from Process Safety Management Audits</i> Rod Prior, SHExcellence, South Africa
11:30–11:55	<i>The Process Safety Professional in a Net Zero World</i> Ian Sutton, Ian Sutton Technical Books, USA	<i>Application of Energy Institute EI15 (formerly IP15) 4th Edition Code of Practice for Hazardous Area Allocation</i> Adam Connell & Matthew Price, INEOS, UK	<i>IChemE Publications Update: Lessons Learned</i> Peter Marsh, IChemE Safety and Loss Prevention Special Interest Group; Andy Brazier, Loss Prevention Bulletin Editorial Panel	<i>The Good, Bad and the Ugly – Pandemic-Driven Acceleration in Audit Technology</i> David M. Einolf, Endeavour EHS, USA; Nick Ashley, W R Grace & Co, USA; Luverna Menghini, BP, USA
12:00–12:25	<i>Evaluating Electrolyzer Hazards in Production of Green Hydrogen and Ammonia</i> Murtaza Gandhi, Baker Engineering and Risk Consultants, USA	<i>ATEX & UKEX – We Don't Know What We Don't Know</i> Scott Harding, Woodcock & Wilson, UK	Facilitated discussion	Facilitated discussion
12:35–13:20	 Plenary speaker Jasper Clark	<i>Turning Good Practice into Common Practice</i> Jasper Clark, Risk Engineering Hub Leader, Marsh Energy & Power, UK		
13:20–14:15	Lunch break			
	Clean Energy II Queen's Suite 1 Session chair: Rob Magraw	ATEX/DSEAR II Queen's Suite 2 Session chair: Andy Mackiewicz	Human Factors Queen's Suite 3 Session chair: Louise Whiting	Environment Queen's Suite 4 Session chair: Tony Clayton
14:15–14:40	<i>Recommendations for the Selection of Equation of State During Design and Operation of Impure CO₂ Transport</i> Hooman Haghghi, Wood, UK	<i>CLP and DSEAR Conundrums – the Practical Implications and the Contribution to COMAH</i> Keith Johnson, Sellafield Ltd, UK	<i>SCTA: Killing Two Birds with One Stone</i> Clive de Salis, DEKRA, UK	<i>Guidance on Vulnerability Review and Assessment for Safety and Environmental Critical Equipment to Control Escalation Risks on Atmospheric Storage Tank Sites</i> Ian Herbert, Vulcan Hazard Management, UK; John Evans, Thornton Tomasetti, UK; Mark Scanlon and Laszlo Komaromi, Energy Institute, UK
14:45–15:10	<i>Modelling CO₂ Pipeline Ruptures Using Computational Fluid Dynamics – a Review of Model Setup Parameters Which Affect CO₂ Plume Behaviour and Demonstration of Findings</i> Peter Johnson, Feargus Schofield & Saffron Wyse, Thornton Tomasetti, UK	<i>Hazardous Area Classification of a Multipurpose Chemical Plant</i> Prashanth Shivakumar, PSK Pharma Solutions, UK	<i>Brain-Centered Hazards: Risks & Remedies</i> Mark Walker, DEKRA, UK	<i>Valuation of Environmental Receptors for Cost-Benefit-Analysis (CBA) in a Control of Major Accident Hazards (COMAH) Context – Phase 2</i> Rob Ritchie, RAS, UK
15:15–15:40	<i>Cryogenic Storage of Anhydrous Ammonia</i> Adrian Wright, TGE Gas Engineering, UK	Facilitated discussion	<i>Human Factors Integration. The Beginning is a Good Place to Start</i> Kayley Clusker, Atkins, UK	<i>On the Lookout for Gas Leaks – a Remote Sensing Approach for Detecting Dangerous Gas Emissions Within Chemical Plants</i> Gerd Behme, Grandperspective, Germany
15:45–16:15	Facilitated discussion		Facilitated discussion	Facilitated discussion

This is a draft programme and is subject to change.