<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30-09:45</td>
<td>Welcome from the conference chair</td>
</tr>
<tr>
<td>09:45-10:40</td>
<td>Plenary speaker</td>
</tr>
</tbody>
</table>
|            | A Reflection of How the Downstream Oil Sector Responded to the Outbreak of COVID-19 and How that Response Mapped to Process Safety Management During the Ensuing Pandemic  
Simon Wood, UK Petroleum Industries Association (UKPIA) |
| 10:45-11:10 | Lessons Learned from the COVID-19 Pandemic  
Keith Plumb, Integral Pharma Services, UK |
|            | Process Safety Key Performance Indicators (API-754 Guidelines)  
Amee Harma & Syed Salvat Hosain Rizvi, Ergro Polymer & Chemicals, Pakistan |
|            | Process Safety Site Visit to Improve PSM Culture  
Ipek Isteben & Seşön Gökcê, Tupras, Turkey |
| 11:15-11:40 | Case Study – Design and Build of New Plant for Production of a Key Ingredient for a COVID-19 Vaccine  
Carolyn Nicholls, RAS, UK & Robert Hanson, Croda Europe, UK |
|            | Analysis of Quantitative Risk Assessment Methodology and Worldwide Comparison on Risk Acceptability Criteria  
Ravi Kumar Sharma, Indian Institute of Technology, India |
|            | Influencing Improvements in Safety Culture Using Qualitative Research Methods: A Regulatory Perspective  
Nick Shaw, Office for Nuclear Regulation, UK |
| 11:45-12:10 | Title to be confirmed  
Ellen Rivers, British Compressed Gases Association (BCGA), UK |
|            | Learning from Major Incidents Related to Process Safety Audits  
Zuszanna Gyenes, IChemE Safety Centre, UK |
|            | Process Safety Cards “A Good Deal Safer”  
David Hatch, PS Integrity, UK |
|            | Advanced Methodology of Structural Redundancy Analysis for Optimising Passive Fire/Cryogenic Spill Protection  
Hiroki Takahashi & Yoshinori Hino, IGC Corporation, Japan |
| 12:15-12:40 | LOPA Versus Covid – Return to Sustainable Living  
Pablo Garcia-Trinanes & Ali Molkiber, University of Greenwich, UK, Christopher Ross, UK |
|            | Recommendations and the Broken KPI – Optimising PHA Recommendation Implementation  
Ronji Mülherger, RiskAlive Analytics, Canada |
|            | Facilitated discussion  
Comparisons of the Predictions of the Dispersion Model DRIFT Against Data for Hydrogen, Ammonia and Carbon Dioxide  
Graham Tickle, ESR Technology, UK |
| 12:40-13:15 | Facilitated discussion  
Facilitated discussion  
Facilitated discussion |
| 13:15-14:15 | Break |
| 14:15-15:10 | Plenary speaker  
Cross Sector Learning – What the Chemical and Process Industries Can Learn from the Building Sector  
Peter Baker, Health and Safety Executive, UK |
| 15:15-15:40 | Cross-sector Learning  
What the Processing Industry Must Learn from the Boeing 737 MAX Crashes  
Richard Carter, ACM Facility Safety, Canada |
|            | Trends in Offshore Process Equipment Leak Frequencies  
Brian Bain, DNV, UK |
|            | Cumulative Risk Model of Safety Barriers – Case Study  
Yasser Fathy, Rashid Petroleum, Egypt |
|            | Is Your Tank Inert? A Study into the Challenges of Ensuring Inert Atmospheres  
Alan Collier & Stephen Puttick, Syngenta, UK |
|            | Strengthening Regulators’ Competence in Learning from Operational Safety Performance  
Fidel Bizasgi, Tudus Advisors, Cuba |
| 15:45-16:10 | Thinking Outside the Box: Lessons and Experience that the Major Hazard and Nuclear Sectors Can Learn from Each Other  
Ian Phillips, Office for Nuclear Regulation (ONR), UK |
|            | Analysis of Accidents and Good Inspection Practices for the Management of Ageing of Industrial Plants  
Romualdo Marrazzo & Fabrizio Vazana, Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy |
|            | Use of Live Barrier Models to Manage Risk  
Rae Ann Joseph, Atlantic LNG, Trinidad & Tobago |
|            | Monte Carlo CFD Simulations for Quantifying Uncertainty Associated with Vapour Cloud Explosions  
Christopher Stirling, Viper Blast, UK & Jordi Dunjö, Bright Calcs LLC, USA |
|            | Practical Experience of Rolling out Process Safety Competency Assessments Across a Large Multinational Company  
Graeme Ellis, Matthey, UK |
| 16:15-16:40 | A Case Study of The Halo and Safety Culture in Motorsport  
Andrew Laird & Dr Esther Ventura-Medina, University of Strathclyde, UK |
|            | Facilitated discussion  
Evaluation, Visualisation and Monitoring of Cumulative Risk Exposure Resulting from Safety Critical Hardware and Human Barriers Deviation  
Tayo Olusanya, Olu Adeyemi & Seyi Olusanya, Melos Ltd, UK |
|            | Addressing the Unique Challenges of Hydrogen Gas Detection in 3D Fire and Gas Mapping  
Khama Maiti, Chris Dyasr, Alex Lebas, Lloyd Samaniego, Hasanah Shamsun, Ahmad Muzammil & Filippo Derosa, Monaco Engineering Solutions, UK |
|            | Linking Critical Competencies with Major Accident Hazards  
Chris Proud, Andrew Lawson & Luke Butcher, ESR Technology, UK, Andy Brazer, ABB Risk, UK |
| 16:40-17:15 | Facilitated discussion  
Facilitated discussion  
Facilitated discussion |

This is a draft programme and is subject to change.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers/Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30–10:55</td>
<td>Managing Process Safety by Digitalisation During the Pandemic</td>
<td>Ahmet Kemal Ozoral, Selcuk Gokce &amp; Eda Akkus, Tupras, Turkey</td>
</tr>
<tr>
<td></td>
<td>The Impact of Cognitive Bias in Safety</td>
<td>Trish Kerin, ICHEM Safety Centre, Australia</td>
</tr>
<tr>
<td></td>
<td>Effective Field Engagement and Management of Higher Consequence Scenarios</td>
<td>Martin R Overiden, ExxonMobil, UK</td>
</tr>
<tr>
<td></td>
<td>Assessment of Operators’ Response Time on Safe Operation of Distillation Columns: a Process Dynamic Analysis</td>
<td>Zalina Harun &amp; Zulfan Adi Putra, Petronas, Malaysia; Nik Abdul Hadi Md Nordin, Universiti Teknologi PETRONAS, Malaysia; Darmawan Ahmad Mulharror, PT Keselamatan Pros, Indonesia</td>
</tr>
<tr>
<td>11:00–11:25</td>
<td>Risk Based Prioritisation of Maintenance Backlog Items</td>
<td>Chetan Birajdar, Ricardo Bandini &amp; Khamam Matri, MES International, UK</td>
</tr>
<tr>
<td></td>
<td>Guidance to Provide an Economic Value (or Series of Values) Which Can Be Applied When Undertaking a CBA Under Major Hazard Establishments for Environmental Purposes</td>
<td>Rocio Salado, RPA Ltd, UK</td>
</tr>
<tr>
<td></td>
<td>Human Factors Issues in Turnarounds (TARs)</td>
<td>Jamie Henderson &amp; Richard Marshall, Nova Chemicals, India</td>
</tr>
<tr>
<td></td>
<td>Hazard Management in NOVA Sclairtech Technology Polyethylene Plant</td>
<td>Anees Iqbal Ansari &amp; Mohammad Moonis, Pleadies Global, UK</td>
</tr>
<tr>
<td></td>
<td>Mechanical Response of Shells to Tube Rupture in Shell-and-Tube Heat Exchangers</td>
<td>Colin Dedds, Greymore Engineering Services, UK; Mark Scanlon, Energy Institute, UK; Alan Clayton, Consultant, UK; Rob Kulka, TWI, UK</td>
</tr>
<tr>
<td>11:30–11:55</td>
<td>Lessons Learned and the Pros &amp; Cons of Virtual HAZOP</td>
<td>Azzam Younes, AYEnergi Consulting, UK</td>
</tr>
<tr>
<td></td>
<td>The Application of Satellite Data for Detection and Monitoring of Methane Emissions and the Integration Opportunities with Weather and Plant Sensor Data</td>
<td>Darren Steele, Steroperstone Analytics, UK &amp; Dr Ian Spence, CHGoil, UK</td>
</tr>
<tr>
<td></td>
<td>Managing Operator Fatigue</td>
<td>Steff McMaster, University of Hull, UK &amp; Jenny Hull, RAS, UK</td>
</tr>
<tr>
<td></td>
<td>Applying Process Safety Experiences and Lessons Learnt to Achieve Improvements in Plant Up-Time and Stability of Production</td>
<td>Anees Iqbal Ansari &amp; Mohammad Moonis, Pleadies Global, UK</td>
</tr>
<tr>
<td></td>
<td>Detailed Analysis of Temperature and Pressure Behaviour During Reaction Runaway for Vent Sizing</td>
<td>Yuta Mizuta Turo, Motoshiko Sumino, Hiroaki Nakata, Yuichiro Izato &amp; Atsumi Miyake, Mitsubishi Chemical Corporation, Japan</td>
</tr>
<tr>
<td>11:55–12:30</td>
<td>Facilitated discussion</td>
<td>Facilitated discussion</td>
</tr>
<tr>
<td>12:30–13:30</td>
<td>Break</td>
<td>Break</td>
</tr>
<tr>
<td>13:30–14:25</td>
<td>Plenary speaker Dropped into the Deep End – a Personal Senior HSE Management Journey</td>
<td>Terry Cooper, Offshore Petroleum Regulator for Environment and Decommissioning (OPRED), UK</td>
</tr>
<tr>
<td>14:30–14:55</td>
<td>The Message from Losses – What You Need to Know and Learn From to Prevent Major Accidents</td>
<td>Paul Clarke &amp; Scott McNeil, Marsh, UK</td>
</tr>
<tr>
<td></td>
<td>Hydrogen Projects – Business as Usual?</td>
<td>Clare Dunkerley, Otto Simon, UK</td>
</tr>
<tr>
<td></td>
<td>Comparison of Hazardous Area Classification</td>
<td>David Watts, Pablo Giacopinelli &amp; Gary Pilkington, Gexcon, UK</td>
</tr>
<tr>
<td></td>
<td>Latest HAZOP Practice</td>
<td>James Fairburn, Chevron, UK</td>
</tr>
<tr>
<td>15:00–15:25</td>
<td>Why Did They Do That? How To Conduct A Human Factors Incident Investigation</td>
<td>Steve Cutchen, retired Incident Investigator, Chemical Safety Board (CSB), USA</td>
</tr>
<tr>
<td></td>
<td>Ammonia, Methane: Hydrogen Oh My! Understanding Hazards from Alternative Power to Gas Options</td>
<td>Darren Malik &amp; Kelly Thomas, BakerRisk, USA</td>
</tr>
<tr>
<td></td>
<td>Application of Functional Safety to a Burner Management System – How to Avoid Common Pitfalls</td>
<td>Michael Scott, eSheild, USA</td>
</tr>
<tr>
<td></td>
<td>Process Hazard Analysis for Smaller Changes: Tips and Tools for Avoiding Misses and Improving Quality</td>
<td>Jody Olsen, Consultant, USA</td>
</tr>
<tr>
<td>15:30–15:55</td>
<td>Embedding the Lessons of Hard Knocks–Trying Not to Repeat Our Mistakes Time and Time Again</td>
<td>Ken Patterson, Consultant, UK &amp; Gillian Wigham, Synthomer, UK</td>
</tr>
<tr>
<td></td>
<td>Developments and Uncertainties in Hydrogen Fuels Risk Assessment</td>
<td>Michael Moosmiller, Baker Engineering &amp; Risk Consultants, USA &amp; Rob Magraw, BakerRisk Europe, UK</td>
</tr>
<tr>
<td></td>
<td>The Role of an Innovative Approach to DSEAR in Accelerated Early Career Development</td>
<td>Rebecca Phillip &amp; Adriana Reyes Cordoba, Atkins Global, UK</td>
</tr>
<tr>
<td></td>
<td>Minimising Human Error in PHA Documentation</td>
<td>Carol Li &amp; Ronjit Mukherjee, Risk Alive Analytics, Canada</td>
</tr>
<tr>
<td>16:00–16:25</td>
<td>Identifying and Embedding Good Practice in Process Safety – Safety Culture/Leadership</td>
<td>Peter Culbert, Exida, Ireland</td>
</tr>
<tr>
<td></td>
<td>Quantification of the Risks Associated with a Hydrogen Gas Distribution Network</td>
<td>Andrew Phillips, Mike Acton &amp; Ann Halford, DNV, UK; R Oxley &amp; D Evans, Northern Gas Networks, UK</td>
</tr>
<tr>
<td></td>
<td>Facilitated discussion</td>
<td>Facilitated discussion</td>
</tr>
<tr>
<td>16:25–17:00</td>
<td>Facilitated discussion</td>
<td>Facilitated discussion</td>
</tr>
</tbody>
</table>
Thursday 18 November 2021

All times are Greenwich Mean Time (GMT)

Digitalisation I
Presentation summaries ➤

10:30–10:55 Best Practices to Optimise Management of Change System and Manage the MOC Digital Transition
Hussain Aladeebajbar, Saudi Aramco, Saudi Arabia

Managing the Major Accident Potential of Carbon Capture and Storage CO2
Hamish Holt & Michael Simms, DNV, UK

The Safety Culture of the Regulator
Marc Mcbride, Office for Nuclear Regulation, UK

Demystifying Mist Explosion Hazards
Stephanie El-Zahalian, Idaba Souza Dos Santos, Hugo Tostain & Olivier Dufraud, University of Lorraine, France; Alexis Vignes, INERIS, France; Simon Cark, Health & Safety Executive, UK

Preliminary Hazard Analysis and Mitigation for the Prevention of Catalyst Regeneration Vessel's Catastrophic Rupture
Manesha Thiyyaga Rajan, Noor Amida Abdul Talip & Hasnor Hassaruddin Hashim, Petronas, Malaysia

11:00–11:25 Improving Loss Prevention in High Hazard Industries Through the Evaluation of Safety Culture and Error Traps from Structured and Unstructured Data Using Machine Learning
Gus Carroll & Dr Nyala Noe, Empirsys, UK; Dr Mike Orley, Centrica Storage, UK

Smoke, Sparks, Flames or Explosions? An Experimental Study into How Lithium-ion Cell Failure Varies in Open Field
Katie Abbott, Jonathan Buxton & Jason Gill, Health & Safety Executive, UK

Leadership Matters – Real World Examples of Process Safety Leadership Good Practice
Ashley Hynds & Colin Chambers, WSP, UK

Ignitability of Diesel Fuel Mists over a Vertical Distance
Louise O’Sullivan & Dr Richard Bettis, Health & Safety Executive, UK; Dr Anthony Giles, Cardiff University, UK

New International Failure Frequency Database for High Pressure Gas Installations
Mike Acton, C Humphreys & Z Watts, DNV, UK; H Olafsen, Energifin, Denmark

11:30–11:55 Cyber Attacks on Process Plants and Understanding What is Needed
Clive de Salis, Dekra, UK

Experimental Understanding of Displacement and Forces Generated Due to Swelling During Lithium-ion Pouch Cell Failure
Gemma Howard, Jason Gill & Jonathan Buxton, Health & Safety Executive, UK

From Zero Accidents to Safety, Quality and Productivity
Urbain Bruyere, Consultant, UK

Flammability Testing for Heavy Oil Mists
Hannes Engel, Gescon, UK

Assessing the Risks When Expanding Process Plants or Building New Units on Compact Sites
Robert Canaway, Suregrove, UK

11:55–12:30 Facilitated discussion

12:30–13:30 Break

13:30–14:25 Plenary speaker
Title to be confirmed (Climate Change andDecarbonisation Technologies)
To be confirmed

Digitalisation II
Presentation summaries ➤

14:30–14:55 Treating Data as an Asset – Experiences of the Early Adopters
Brad Eccles, ABS Consulting, UK; Henrique Paula, Steve Aredt & Matt Mower, ABS Group, USA

Review of the Current Understanding of Hydrogen Jet Fires and the Potential Effect on PFP Performance
Michael Johnson & Robert Crewe, DNV, UK; Graham Boaler & John Evans, Thornton Tomasetti, UK

Fight or Flight: What’s your Fire Response?
Kristen Graham & Karen Vilas, Baker Engineering & Risk Consultants, USA

Human-Factors and Automation-Related Accidents in the Railway Industry
Mon Ahamdi Rad, Lianne M Lefsrud, Michael Hendry & Daniel Blas, University of Alberta, Canada

15:00–15:25 Using Artificial Intelligence and Machine Learning Techniques to Analyse Incident Reports
Fereshte Sattari, Daniel Kuran, Renato Macciotta & Lianne Lefsrud, University of Alberta, Canada

Maximum Overpressure and Flame Velocity of Methane/ Hydrogen Layers Venting Deflagrations in a Large-Scale Enclosure
David Eduardo Torrado Beltran, James Fletcher, Andrew Tookle & Philip Hooker, Health & Safety Executive, UK; Thomas Isaac, Progressive Energy, UK; Dave Lander, Consultant, UK

SafePool
Seckin Gokce, Ahmet Can Serifdan, Eyup Azizoglu & Golkan Gedik, Tupsar, Turkey

Investigating Unusual Powder Decomposition Incidents
Stephen Rowe, Clive de Salis, Simon Gahk & Andrew Jennings, Dekra Organisational & Process Safety, UK

Scott Kimbleton & Graziea Caputo, IBM, USA

Assessment of Enclosure Ventilation Safety for Hydrogen Fuelled Gas Turbines
Tristan Vye & Aidan Wimshurst, Frazer Nash Consultancy, UK

The Use of Ester Based Transformer Liquids for Reduced Fire Risk and Lower Costs
James Reid, M&J Materials, UK

Investigation into a Microbiologically Induced Corrosion (MIC) Failure of an Onshore Pipeline
Keith Birkett, Aneta Nembrava & Ian Chapman, Health & Safety Executive, UK

16:00–16:25 Facilitated discussion

The Use of CFD for the Design of Hydrogen Bulk Storage Areas
Michael Bristow, Pablo Giacopinelli, Graham Morrison & Gary Pilkington, Gescon, UK

16:25–17:00 Facilitated discussion

This is a draft programme and is subject to change.