

HAZARDS XIX

and Workshops

Process Safety and Environmental Protection
What do we know? Where are we going?

**Major International 3 Day Symposium,
 Exhibition and two 1 day Workshops**

**The Weston Building, Manchester Conference Centre,
 University of Manchester, UK**

The theme of this Symposium is that to prevent accidents and environmental problems in the process industries we have to identify hazards and ways to reduce risks; in doing so we draw heavily on our own experience and that of others. If we know what has gone wrong in the past and why, we can see what may go wrong in the future and how it can be prevented by us as individuals and organisations. To continue to make improvements in safety we need to do more than just preserve and apply our existing knowledge; we also need to build on what we have and seek better ways of doing things in the future. The question is "How do we preserve and consolidate our corporate knowledge at a time when industry is continually changing and becoming leaner, and how do we set about achieving better standards in the future?"

The aim of this symposium is to bring together international experts and practitioners in process safety and environmental protection to present and discuss the latest technical advances and new thinking in safety and environmental management techniques. The Symposium will also cover the storage, accessibility and development of corporate, academic and other safety information.

This symposium is supported by the HSE and the Environment Agency

SPONSORED by ABB Engineering Services, Shell Global Solutions (UK) and Vectra Group Ltd

CO-SPONSORED by:- CCPS(AIChE), SCI, CIA, RSC, EPSC, Safety & Reliability Society, IOSH, SIESO, and the Safety and Environmental Subject Groups of the IChemE



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BENEFITS FOR THOSE ATTENDING THIS EVENT

- Keynote papers on:- Uncertainty in the Risk assessment process in industry, How do we drive down incident rates by the use of incident records, Corporate manslaughter and how to handle a regulatory investigation, Hydrogen – too dangerous to base our future on?, Principles for learning lessons from incidents, and, How we changed Safety culture (by Trevor Kletz)
- The combined presentation from the HSE and ConocoPhillips on the Humber Refinery explosion in April 2001
- The latest on Compliance with Standards (ATEX, DSEAR, IEC 61508/61511)
- 17 papers from the HSE, and the Health and Safety Laboratory
- Environmental protection papers from the Environment Agency and others
- Two One day Workshops on "New trends in Risk Analysis" given by Ciba Specialty Chemicals plc, and others, and "REACH – Implications" presented by Chemicals NorthWest
- Papers on Hydrogen
- The latest on new EU supported DESC code for dust explosions
- Latest research on storage of flammable liquids in IBCs from the HSE/HSL
- Research work from the HSE and Health & Safety Laboratory, Inburex, Shell Global Solutions, London South Bank University, British Nuclear Group, Loughborough University, Syngenta
- Industrial case studies
- Risk assessment and analysis papers
- Human Factors and Safety management papers
- Chemical reactions papers
- Safe process design papers
- Contributions from many countries

WHO SHOULD ATTEND THIS EVENT?

- Senior figures from the Private and the Public sectors
- Regulators
- Safety and Environmental practitioners
- Academics and Researchers from Industry
- Design/Operations/Maintenance staff from all sectors
- Project Management
- Human Relations professionals
- SHE/Risk assessment/Safety culture consultants

27th - 30th March 2006

The Workshop Programme - Monday 27th March 2006



WORKSHOP "A" NEW TRENDS IN RISK ANALYSIS

Presented by Kevin Dixon-Jackson of Ciba Specialty Chemicals plc, together with Dr. Gordon Sellers, a consultant in Safety Management and Performance Improvement, and Ms. Helen Conlin of RPS Engineering and Safety

The workshop is aimed as an introduction for novices and a refresher for more experienced users.

Three popular techniques will be presented both as lectures and practical sessions.

- **Check-List** featuring the recently revised Ciba Specialty Chemicals methodology for Batch Reactions
- **HazOp** (incorporating the new I.Chem.E Guide 2000) Since HAZOP was introduced in the early 1970s, the basic technique has remained remarkably constant. However HAZOP now includes studying non-steady state operations, classifying safety integrity levels for instrumentation, and documenting online to facilitate full recording rather than by exception – the workshop will introduce each of these developments.
- **Human Factors.** Best practice - The need for the human contribution to effective risk management to be integrated into an organisation's risk governance processes is widely appreciated (e.g. to comply with COMAH, IEC 61508, DSEAR). The workshop will introduce techniques and issues and provide an opportunity for delegates to consider how human factors issues might be fed into a wider risk assessment process.

Each session will be lead by an expert current practitioner. The session will conclude with a plenary discussion on the merits and pitfalls of each methodology and advice on the application of each system to various plants and process types.

Programme

09.00	Registration and coffee – Upper Foyer, Weston Building	
09.30	Overview of Risk Analysis Methodologies	KDJ
10.00	Ciba Check List for Batch Reactions Methodology	KDJ
10.50	Coffee	
11.00	Exercise in groups - Ciba Method	KDJ
11.45	Feed Back	KDJ
12.00	HAZOP Methodology	GS
13.00	Lunch	
13.45	Exercise in groups - HAZOP	GS
14.30	Feed Back	GS
14.40	Human Factors Methodology	HC
15.40	Tea	
15.50	Exercise in groups - Human Factors	HC
16.35	Feed Back	HC
16.45	Final plenary session - remarks and discussion	ALL
17.15	End	

WORKSHOP "B" REACH – Implications

REACH is a substantial piece of new EU legislation which is set to dramatically transform the way chemicals are managed throughout the supply chain – and it will have global impact.

Its main objective is to ensure a high level of protection for human health and the environment, whilst maintaining an efficient internal market within the EU and stimulating innovation and competitiveness in the chemical industry.

REACH proposes a wide-ranging fundamental overhaul of EU chemical control legislation, currently regulated under 6 separate regulations and directives.

It will involve Registration, Evaluation and Authorisation of up to 30,000 Chemical substances and will have major impact on chemical producers and importers, downstream users and consumers.

This workshop provides an update on the latest developments of the legislation, its likely impact on producers and users, plus potential options for meeting compliance.

Programme

09.00	Registration & Coffee – Upper Foyer, Weston Building
09.30	Welcome & Introduction from Chair
09.40	Introduction to the REACH legislation
10.10	REACH and the European Parliament process
10.40	The effect on manufacturers and importers
11.10	Coffee
11.30	Implications for downstream users
12.00	The Health & Safety Executive perspective
12.30	Policing the legislation - the view from the Environment Agency
13.00	Lunch
14.00	Testing requirements
14.30	Legal implications
15.00	Meeting compliance – what you can do
15.30	Q&A
16.00	Close

Please note: the programme is subject to change

For further information and to register for the above event, please contact
maureen.laughton@chemicalsnorthwest.org.uk or visit
www.chemicalsnorthwest.org.uk

Day 1 of Symposium and Exhibition – Tuesday 28th March 2006

08.30 Registration, Coffee

09.15 Welcome and Introduction by Dr.K.Wall –
University of Manchester
Chairman of the IChemE North West Branch

PLENARY SESSION 1 – KEYNOTE PAPERS

Chairman – Dr. M. F. Pantony – Consultant

- 09.25 The Burgoyne Memorial Lecture: Uncertainty in the Risk Assessment process – the challenge of making reasonable business decisions within the framework of the precautionary principle**
C. J. Beale - Ciba Specialty Chemicals, Bradford
- 10.00 How can we drive down incident rates by the use of incident records and data bases?**
F. Crawley - University of Strathclyde
- 10.30 Corporate manslaughter and how to handle a regulatory investigation following serious injury or death**
G. Lewis, R. Maharaj - Hammonds, Trinity Court, Manchester
- 11.00 Coffee**
- 11.30 Hydrogen: too dangerous to base our future upon?**
G. Newsholme - Health & Safety Executive, Bootle
M. Ricci, P. Bellaby, R. Flynn - Institute for Social, Cultural & Policy Research, University of Salford
- 12.00 Principles for learning lessons from incidents – A UK perspective**
D. Keeley, S. Gadd - Health & Safety Laboratory, Buxton
B. Fullam - Health & Safety Executive, Bootle
- 12.30 How we changed the safety culture**
T. A. Kletz – Department of Chemical Engineering, Loughborough University
- 13.00 Lunch and Exhibition**

PLENARY SESSION 2 – POSTER PAPERS

Chairman – Dr. M. F. Pantony – Consultant

- 14.00 Introduction of Poster Papers by Authors**
- 14.30 – 15.00 Exhibition and Poster Presentations**

15.00 – 17.30 THREE PARALLEL SESSIONS (SESSIONS 3, 4 AND 5)

SESSION 3 – SAFETY MANAGEMENT

Chairman – Mr. I. Kempzell – British Nuclear Group, Sellafield

- 15.00 Organisational drift – a challenge for enduring safety performance**
J. Berman, P. Ackroyd - Greenstreet Berman Ltd, Reading
- 15.30 Process safety trends in a transition economy – A case study**
S. Kovacs - INCDPM, Bucharest, Romania
- 16.00 Tea, Exhibition and Poster Viewing**
- 16.30 Managing the risks of change – A. Brazier, Consultant**
- 17.00 Hearts and minds programmes the road map to improved HSE culture**
R. Holstvoogd - Shell Global Solutions
G. van der Graaf, R. Bryden, V. Zijlker - Shell Exploration and Production
P. Hudson - Leiden University

OR

SESSION 4 – ENVIRONMENTAL PROTECTION

Chairman – Mr. T. Clayton – Environment Agency

- 15.00 Site reports and pollution prevention under PPC in the Surface Treatment sector**
D. Elliott - Surface Engineering Association
S. Rowan - Environ
D. Jacobi, N. Taylor - Environment Agency
- 15.30 The implications to industrial sites of risk and hazard-based approaches to managing land contamination – M. McBarron - AK EHS & Risk, Stockton-on-Tees**
- 16.00 Tea, Exhibition and Poster Viewing**
- 16.30 Control of major accident hazard – Tolerability of environmental risk**
M. Maleham, A. Hitchins - Environment Agency
- 17.00 Environment: Selecting a processing technology to treat secondary pharmaceutical manufacturing effluent streams – D. Coleman. K. Kuma, I. McConvey, C. Whittam - AstraZeneca, Macclesfield**

OR

SESSION 5 – SAFE PROCESS DESIGN

Chairman – Mr. R. F. Evans - HSE

- 15.00 Water hammer – do we need to protect against it? – S. Ord - Stopford Projects Ltd., Chester**
- 15.30 Modelling the consequence of hazardous multi-component two-phase releases to the atmosphere – H. W. M. Witlox, M. Harper, P. Topalis, S. Wilkinson, - DNV Software, London**
- 16.00 Tea, Exhibition and Poster Viewing**
- 16.30 Support of training in safety technology by use of high speed film material from real experiments – H. Schneider - Fraunhofer Institut Chemische Technologie, Pfingztal, Germany**
- 17.00 Possibilities, limitations, and the way ahead for dust explosion modelling**
T. Skjold, O. Larsen, O. R. Hanson - Gexcon AS, Bergen, Norway

RECEPTION AND BUFFET – Conference Centre Weston Room 1

18.00 Welcome by Sponsors – Mr. Martin Grady, ABB Engineering Services

Day 2 of Symposium and Exhibition – Wednesday 29th March 2006

08.30 Registration, Coffee, and Exhibition

09.00 – 12.30 THREE PARALLEL SESSIONS (SESSIONS 6, 7 AND 8)

SESSION 6 – COMPLIANCE WITH STANDARDS

Chairman – Mr. G. S. Melville – Phoenix Loss Prevention Ltd

09.00 Hazardous area classification of low pressure natural gas systems using CFD predictions
S. E. Gant, M. J. Ivings, R. Santon – Health & Safety Laboratory, Buxton
A. Jones – Health & Safety Executive, HID, Bootle

09.30 Experiences & issues in ATEX & DSEAR compliance
A. Ennis – HAZTECH Consultants Ltd, Winsford, Cheshire

10.00 An examination of the use of digital communications in safety related applications
A. J. White – Health & Safety Executive, Bootle

10.30 Coffee, Exhibition and Poster Viewing

11.00 Practical experience in determining safety integrity levels for safety instrumented systems
G. R. Ellis – ABB Engineering Services, Warrington
M. Wharton – Great Lakes Manufacturing (UK) Ltd, Manchester

11.30 Area classification methodology for hydrogen-cooled alternators in power stations
G. R. Astbury – Health & Safety Laboratory, Buxton
S. Cornwell – RWEpower, Swindon

12.30 Lunch, Exhibition and Poster Viewing

14.00–17.30 THREE PARALLEL SESSIONS (SESSIONS 9, 10, AND 11)

SESSION 9 – CHEMICAL REACTIONS

Chairman – Mr. K. Dixon-Jackson – Ciba Specialty Chemicals plc

14.00 Simplified methods for vent disposal system sizing for runaway chemical reactions: EC award project guidance for SMEs
J. A. Hare, A. J. Wilday – Health & Safety Laboratory, Buxton
A. Owens – Arran Chemical Company, Athlone, Eire

14.30 Assessing the role of instrumented protective systems on the basis of safety for batch reactors
G. Brennan – ABB Engineering Services, Warrington
P. Harding – Baker Petrolite

15.00 Large-scale evaluation of vent-sizing methodology for vapour-pressure systems
T. J. Snee, J. Bosch Pagans, L. Cusco, D. C. Kerr, M. Royle – Health & Safety Laboratory, Buxton

15.30 Tea, Exhibition and Poster Viewing

16.00 A comparison of DSC and Radex for the investigation of safety parameters for inhomogeneous systems
I. Priestley – Syngenta Huddersfield Manufacturing Centre
M. Luginbuehl – Syngenta Crop Protection, Muenchwilten AG, Switzerland

16.30 Reaction hazard assessment and risk reduction in the changing world of the process industries
D. Tee, S. Waldram – HEL Ltd, Barnet

17.00 Evaluation of alternative level swell models for reactor relief
R. L. Rogers – Inburex Consulting GmbH, Hamm, Germany
A. G. Colomer – IQS, Barcelona, Spain

OR

SESSION 7 – SAFE PROCESS DESIGN & HYDROGEN

Chairman – Dr. I. F. McConvey – AstraZeneca

09.00 Vapour cloud explosion risk management in onshore plant using explosion exceedance techniques – G. A. Chamberlain, J. S. Puttock – Shell Global Solutions, Chester

09.30 Ignition of dust clouds and dust deposits by friction sparks and hotspots
R. L. Rogers – Inburex Consulting GmbH, Hamm, Germany
S. J. Hawksworth, J. Gummer – Heahealth & Safety Laboratory, Buxton
C. Proust, D. Raveau – INERIS, Verneuil-en-Hallate, France
M. Beyer, S. Schenk – PTB, Braunschweig, Germany

10.00 Impact ignition of Hydrogen-Air mixtures
S. J. Jones, A. F. Averill, J. M. Ingram, P. G. Holborn, P. Battersby, P. F. Nolan – London South Bank University
I. D. Kempself, M. J. Wakem – British Nuclear Group, Sellafield, Cumbria

10.30 Coffee, Exhibition and Poster Viewing

11.00 Dispersion of Hydrogen from high-pressure sources
L. C. Shirvill, P. T. Roberts – Shell Global Solutions, Chester
T. A. Roberts, C. J. Butler, M. Royle – Health & Safety Laboratory, Buxton

11.30 Practical experience in carrying out non-electrical equipment ignition risk assessments
S. J. Gakhar, S. D. Taylor – Chilworth Technology Ltd.
I. Barker, P. Clayton – Acetate Products Ltd

12.00 Mitigation of Hydrogen-Air explosion mixtures using fine water mist sprays
S. J. Jones, A. F. Averill, J. M. Ingram, P. G. Holborn, P. Battersby, P. F. Nolan – London South Bank University
I. D. Kempself, M. J. Wakem – British Nuclear Group, Sellafield, Cumbria

OR

SESSION 10 – SAFETY MANAGEMENT (continued)

Chairman – Professor T. A. Kletz – Loughborough University

14.00 Risk aversion or risk management – avoiding “chocolate firewalls” that melt away just when you most need them
G. Sellers – Safety Management Consultant
J. Stevens – RiskFrisk, Hatfield
M. Dodd – Michael Dodd Media, Pinner

14.30 Measuring corporate health and safety performance – the value of a universal indicator
D. Walker – Centre for Hazard and Risk Management, Loughborough University

15.00 Pitfalls in implementing and using safety management systems and behavioural modification programmes – R. D. C. Prior – SHExcellence CC, Johannesburg, South Africa

15.30 Tea, Exhibition and Poster Viewing

16.00 Applying behavioural behaviour-based methods as part of a strategy to manage process safety – C. Marsh – ConocoPhillips, Humber Refinery, South Killingholme, N.Lincs

16.30 Identifying the impact of psychological ill health on safety performance
R. Scaife, C. Amati – CPsychol, The Keil Centre, Edinburgh
C. Roythorne, A. Whitehead – BP plc

17.00 Corporate memory loss – a quality cure?
N. J. L. Gardener, J. A. Bainbridge – Elementis Chromium, Stockton-on-Tees



OR

SESSION 8 – HUMAN FACTORS

Chairman – Dr. G. Sellers - Consultant

- 09.00** **A formal method of communicating operating procedures**
C. Palmer, P. W. H. Chung – Dept. Of Computer Science, Loughborough University
S. A. McCoy, J. Madden – Hazid Technologies Ltd, Beeston
- 09.30** **The impact of an aging workforce on systems safety and reliability and additional error-producing conditions as applied to an existing human reliability assessment method**
J. C. Williams, J. L. Bell, N. Warren, C. Daniels – Health & Safety Laboratory, Buxton
- 10.00** **Why do people do what they do? – influencing the human factors in accidents at work**
R. Lardner, P. Joyner – The Keil Centre, Edinburgh
G. Reeves – BP plc
J. Smith – BP Forties Pipeline
A. Small – Balfour Beatty Rail
- 10.30** **Coffee, Exhibition and Poster viewing**
- 11.00** **Enhancing safety culture – simple, effective approaches to making improvement**
P. Ackroyd, S. Marsden – Greenstreet Berman Ltd., Reading
- 11.30** **A human factors approach to the optimisation of staffing in the process industry**
J. Stokes, K. Rich – Human Engineering Ltd., Westbury-on-Trym, Bristol
A. G. Foord – 4-Sight Consulting, Harpenden
- 12.00** **Perception of basis of SHE and SHE risk management**
P. Berg, R. Preston – AstraZeneca, Södertälje, Sweden

OR

SESSION 11 – RISK ASSESSMENT AND ANALYSIS

Chairman – Ms. H. Conlin – RPS Engineering and Safety

- 14.00** **Benefits of S2S network for SMEs – A gateway for plant and process safety**
R. Nomen, J. Sempere, E. Serra, M. Grillo – Dept. Of Chem.Eng., Institut Quimic de Sarria, Universitat Ramon Llull, Barcelona, Spain
- 14.30** **Property Insurance: Risk Quality Assessment**
S. Kenyon – Elciem Ltd, London
- 15.00** **The modified cumulative frequency equivalent – a potential measure of off-site risk**
D. A. Carter - Health & Safety Executive, HID, Bootle
- 15.30** **Tea, Exhibition and Poster Viewing**
- 16.00** **Leak frequencies from the hydrocarbon release database**
J. Spouge – DNV Consulting, London

12.30 Lunch, Exhibition and Poster Viewing

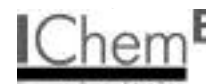
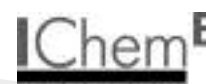
SYMPOSIUM DINNER – THISTLE HOTEL

18.30 for 19.00 in the Windermere/Buttermere Suite

After dinner speakers:

Ms. Tricia Henton – Director of Environmental Protection, The Environment Agency

Professor Geoff Chamberlain, Shell Global Solutions (UK)



Day 3 of Symposium and Exhibition – Thursday 30th March 2006

08.30 Registration, Coffee and Exhibition

09.00 – 12.30 THREE PARALLEL SESSIONS (SESSIONS 12, 13 AND 14)

SESSION 12 – RISK ASSESSMENT AND ANALYSIS (cont.)

Chairman – Dr. M. J. Pitt – University of Sheffield

09.00 A methodology for risk-based safety assurance in the major hazards industries
P. Naylor – Health & Safety Executive, Bootle

09.30 Plant specific ignition probability model and correlations for use in onshore and offshore QRA

D. Mansfield – ESR Technology Ltd., Risley
D. Aberdeen – BP Exploration, and UKOOA
S. Connolly – Health & Safety Executive, Bootle
M. Scanlon – Energy Institute, London

10.00 Proposal for risk assessment and management guidelines for small and medium-sized enterprises

A. Bernatik – VSB-Technical University of Ostrava, Ostrava-Vyskovice, Czech Republic

10.30 Coffee, Exhibition and Poster Viewing

11.00 Summary of the current UK position on decommissioning safety cases and control of operations

A. Trimble – HM Nuclear Installations Inspectorate, HSE

11.30 Determination of safety integrity levels taking into account ALARP – cost benefit analysis

C. Timms – Asset Integrity Management Ltd, Aboyne, Aberdeenshire

12.00 Hazops and Human Factors

P. Aspinall – Vectra Group Ltd, Solihull

OR

SESSION 13 – SAFETY MANAGEMENT (continued)

Chairman – Mrs.K.Clayton - HSE

09.00 Further developments of the capability maturity model to monitor activities supporting the offshore industry

J.Sharp – University of Cranfield
J. Strutt – Boreas Consulting
E. Terry – Sauf Consulting Ltd
D. Galbraith – Galbraith Consulting Ltd.
R. Miles – Health & Safety Executive, Bootle

09.30 Permits-to-work in the process industries

J. Gould – ERM, Manchester

10.00 Understanding major accident hazard management – The more you know, the more you know you don't know.

S. Ditchburn – DNV Consulting
D. David – bp Trinidad & Tobago LLC

10.30 Coffee, Exhibition and Poster Viewing

11.00 E-learning systems – a way to maintain competence?

D. Oberhagemann – ESMG GmbH, Hamm, Germany

11.30 Is hazard management working?

G. Dalzell – TBS Cubed Ltd, Ellon, Aberdeenshire
A. Hopkins – Australian National University

12.00 Health and safety: Influencing change in SMEs

E. M. Hickling, P. Stephens, L. Gaskell – Vectra Group Ltd, Warrington
R. Cousins, P. J. Kelly – Health & Safety Executive

12.30 Lunch, Exhibition and Poster Viewing

OR

SESSION 14 – TRANSPORT AND STORAGE & SEVESO

Chairman – Mr. R. C. Santon - HSL

09.00 ViewRisk: Risk calculation software
P. A. Davies, D. Quinn – ERM, Manchester
D. A. Carter – Health & Safety Executive, Bootle

09.30 Pressure relief considerations for low-pressure (atmospheric) storage tanks

A. Ennis – HAZTECH Consultants Ltd, Winsford, Cheshire

10.00 Controlling the fire risks from composite IBCs

G. Atkinson – Health & Safety Laboratory, Buxton
N. Riley – Health & Safety Executive, HID, Bootle

10.30 Coffee, Exhibition and Poster viewing

11.00 Preparing an inerted storage silo for decommissioning

A. Crow, R. Verma, I. Kempell – British Nuclear Group, Sellafield, Cumbria

11.30 Gross Disproportion, step by step – a possible approach to evaluating additional measures at COMAH sites

M. H. Goose – Health & Safety Executive, Bootle

PLENARY SESSION 15 – SAFE PROCESS DESIGN (cont.)

Chairman – Dr. M. F. Pantony – Consultant

13.30 Assessing the potential for ignition from mechanical equipment

S. Hawsworth, J. Gummer – Health & Safety Laboratory, Buxton
R. L. Rogers – INBUREX GmbH, Hamm, Germany
C. Proust, D. Raveau – INERIS, Verneuil-en-Hallate, France
M. Beyer, D. Lakic – PTB, Braunschweig, Germany

14.00 Cool flames – Laboratory curiosity or industrial hazard?

G. R. Astbury – Health & Safety Laboratory, Buxton

14.30 Application of inherently safer design principles to Biodiesel production processes

M. S. Mannan, Y. Wang, H. West, C. Zhang – Mary Kay O'Connor Process Safety Center, Texas A&M University System, USA

15.00 Explosion at the Conoco Humber Refinery – 16th April 2001

J. Carter, P. Dawson, R. Nixon – Health & Safety Executive, HID

15.25 ConocoPhillips response to the Saturate gas plant fire and explosion incident

D. G. Hughes – ConocoPhillips Humber Refinery, South Killingholme, N.Lincs

15.45 Close of Symposium

16.00 Tea, and Departure

Please note that the programme may be subject to alteration

POSTER SESSION PAPERS (PLENARY SESSION 2)

Auditing of safety management system in Estonian medium-scale enterprises

P. Tint, M. Kempinen – Tallin Technical University, Estonia

A ventilation index for use with COSHH and DSEAR

M. J. Pitt – Dept. of Chemical and Process Engineering, University of Sheffield

Development of source terms for gas dispersion and vapour cloud explosion modelling

A. Ennis – HAZTECH Consultants Ltd, Winsford, Cheshire

Impact of emergency shutdown devices on relief system sizing and design in refineries

R. K. Goyal – Bahrain Petroleum Company, Kingdom of Bahrain

Using HSE's National population database tool for risk assessment

H. McManus, H. Balmforth – Health & Safety Laboratory, Buxton

A. Fowler – Health & Safety Executive, Bootle

EXHIBITION

EXHIBITION - An Exhibition by organisations involved in the process safety and environmental protection fields will be held over the period of the symposium. Safety publications from the IChemE will be displayed

Exhibition space (which is strictly limited) for displaying hardware and software is available on a first-come first-served basis

For information and reservations please contact the symposium organiser:

M. J. Adams (Tel/Fax: 01539 732845, Email: mikeadams@rawgreen.fsworld.co.uk)

SYMPOSIUM AND WORKSHOP REGISTRATION FEES

WORKSHOP "A" on Monday 27th March 2006 – "New Trends in Risk Analysis" – £100 + VAT = £117.50 total
(Please note:- You may only register for this workshop on this form)

WORKSHOP "B" on Monday 27th March 2006 – "REACH – Implications" – £50 + VAT = £58.75 total to CNW members, and £100 + VAT = £117.50 total for CNW non-members.
For further details and registration please contact maureen.laughton@chemicalsnorthwest.org.uk or visit www.chemicalsnorthwest.org.uk

SYMPOSIUM (ALL PRICES ARE SUBJECT TO VAT AT 17½%)

	3 DAYS	2 DAYS	1 DAY
Member of IChemE/or Co-sponsor	£640.00+VAT (£752.00)	£460.00+VAT (£540.50)	£280.00+VAT (£329.00)
Non-Member	£735.00+VAT (£863.63)	£525.00+VAT (£616.88)	£325.00+VAT (£381.88)
Corporate attendance (two or more Delegates from the same organisation – 15% discount if registering at the same time)			
Full time undergraduate student	£70.00+VAT (£82.25)	£50.00+VAT (£58.75)	£35.00+VAT (£41.13)
Unwaged, retired and others – please enquire			
Author (member)	£345.00+VAT (£405.38)	£215.00+VAT (£252.63)	Free on day of presentation
Author (non-member)	£395.00+VAT (£464.13)	£245.00+VAT (£287.88)	Free on day of presentation
Co-Author (member)	£480.00+VAT (£564.00)	£345.00+VAT (£405.38)	£215.00+VAT (£252.63)
Co-Author (non-member)	£550.00+VAT (£646.25)	£395.00+VAT (£464.13)	£245.00+VAT (£287.88)

Cancellations Policy

Cancellations received in writing to the Accounts Department, IChemE (165-189 Railway Terrace, Rugby CV21 3HQ) before 24th February 2006 will be subject to an administrative charge of £50.00.
No refunds will be made for cancellations received after this date but copies of any documentation will be sent on.
Substitutions are welcomed at any time.

ACCOMMODATION

Rooms are currently available in the Weston Building (in which the Conference is being held), at the Thistle Hotel (double rooms only available) and at the IBIS Hotel, Charles Street, which is close to the Weston Building. Delegates must make their own arrangements directly with either the Weston Building, the Thistle Hotel, and the IBIS hotel, and should do so early to secure this convenient accommodation, as availability is limited. On applying for accommodation this symposium should be quoted.

WESTON BUILDING

Hotel Standard room
Single Occupancy £75.00 per night
Double Occupancy £85.00 per night
inclusive of VAT, and full English breakfast

Enquiries and bookings/reservations should be directed to:-

The Manchester Conference Centre Weston Building, Sackville Street, Manchester, M1 3BB
Tel: 0161 955 8062/8000
Fax: 0161 955 8050
Email: reservations@manchester.ac.uk
Quoting "Hazards XIX symposium" or ref # 29948

THE THISTLE HOTEL

Deluxe double £126.00 per night
Standard double £108.00 per night
Inclusive of VAT, and full English Breakfast

Bookings/reservations should be sent directly to:-

The Thistle Hotel, Piccadilly Gardens, Manchester, M1 6DP
Tel: 0870 333 9139
Fax: 0161 228 6347
Email: reservations.manchester@thistle.co.uk
Quoting "Hazards XIX symposium"

IBIS HOTEL

Hotel standard room £54.95 per night, inclusive of VAT.
Buffet breakfast £4.95 each.

Booking reservations should be sent directly to:-

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REGISTRATION FORM

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Membership of Professional Institution _____ IChemE Membership No.: _____

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I WISH TO REGISTER FOR THE FOLLOWING DAYS:- (Please tick the relevant boxes)

Monday 27th March Workshop Tuesday 28th March Wednesday 29th March Thursday 30th March

**** PLEASE NOTE - The fees for 3 day delegates and authors already include the cost of the Symposium dinner on Wednesday 29th March**

I wish to attend the Symposium dinner (29th March) as an optional extra of £30+VAT = £35.25 I will require a Vegetarian meal

I plan to attend the FREE reception and Buffet on Tuesday 28th March

PARALLEL SESSIONS

As can be seen in the programme, there will be parallel symposium sessions for part of Tuesday and Thursday, and all day Wednesday. In order to assist with the room allocation, please indicate which sessions you plan to attend.

Tuesday 28th March	after lunch:-	Session 3 <input type="checkbox"/>	Session 4 <input type="checkbox"/>	Session 5 <input type="checkbox"/>
Wednesday 29th March	Morning Sessions:-	Session 6 <input type="checkbox"/>	Session 7 <input type="checkbox"/>	Session 8 <input type="checkbox"/>
	Afternoon Sessions:-	Session 9 <input type="checkbox"/>	Session 10 <input type="checkbox"/>	Session 11 <input type="checkbox"/>
Thursday 30th March	before Lunch:-	Session 12 <input type="checkbox"/>	Session 13 <input type="checkbox"/>	Session 14 <input type="checkbox"/>

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