

# S & L P S G Newsletter

ISSUE 9

SUMMER 1998

## FROM THE EDITOR:

In this issue, two book reviews are included. Book reviews in papers / newsletters are useful in order to disseminate opinions and to get an appreciation of such books from a third party. If there are any readers who have recently read a book which may be of interest to other readers of this newsletter and would like to write a review (50-100 words), we would be delighted to consider it for publication.

*Lucy Johnson, March 1998*

*Correspondence to :*

*Lucy Johnson*

*Genesis Engineering Consultants*

*20-22 Stukeley Street*

*Covent Garden, London WC2B 5LR*

*Phone: 0171-430 0040*

*Fax: 0171-831 3934*

*e-mail: lj@genesis-eng.co.uk*

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# **MEETING REPORT: CASE STUDIES**

## **ICHEME SAFETY AND LOSS PREVENTION SUBJECT GROUP**

**CASE STUDIES SEMINAR 8 DECEMBER 97  
BP CONFERENCE CENTRE, HEMEL HEMPSTEAD**

### **GENERAL SUMMARY**

There were 5 thought provoking presentations at this seminar, on a range of accidents which have occurred in the past. Following the presentations, the delegates split into groups in order to discuss the causes and identify key learnings.

Accidents databases are now expanding in profile. The first recommendation which the Health and Safety Executive (HSE) made in the 1994 Texaco Fire Report (see details of presentation below) was that safety management systems should include means of sorting, retrieving and reviewing accident information from the history of similar plants. Indeed, the HSE may now take a much more proactive role in databases themselves and expect more companies to do the same.

The subject of change control was discussed in some length and is considered important, even for small changes. Plant Superintendents may be an area for attention with regard to this. Some of the accidents covered in the seminar were largely due to the fact that adequate change control measures were not exercised, often as a result of the plant superintendent and their position of authority (see below the presentation with the common theme "Plant Superintendents are Dangerous").

Another finding of the seminar was regarding waste disposal companies. Since waste disposal companies do not

generally appear to be geared up for safe disposal of some wastes, this may be a new area to concentrate on.

The 5 presentations are summarised below with key points noted as a result of the group discussions which followed.

#### **1). Plant Superintendents are Dangerous (Speaker: Roy Hewson, Independent Safety Consultant)**

A series of accidents were presented with the common theme of "Plant Superintendents are Dangerous". The accidents which occurred were as a result of plant maintenance being carried out without the proper use of safe procedures such as change control and permit to work system.

The underlying message from this presentation was effective management involves the elements of: plan, organise, lead and control. A Plant Superintendent needs all of these skills and must know risk assessment and HAZOP techniques.

Further areas raised in the discussion were as follows:

- Production pressures - the pressure on the operators to keep producing even when the safety of personnel is compromised.
- Training of new / existing personnel - Shift Superintendents need to have a

detailed knowledge of the process and hazards involved, this is often difficult to accomplish when personnel are relatively new to the position. The importance of passing down the experience and knowledge to new personnel was also discussed.

- Work culture / Management support - operating personnel require the support of management to feel comfortable in taking the decision to shutdown parts of the plant if the operation is deemed to be hazardous. This attitude of “safety first” needs to be inherent in the work culture.
- The importance of understanding of safety procedures.

**2). Solvent tank explosion during commissioning (Speaker: Nick Vaughan, Courtaulds Chemicals)**

This presentation was concerning an explosion which occurred in a solvent tank. The source of ignition was an electrical heater on the tank seal pots. The heater had been added later on and it had been decided not to follow full change control procedures for this addition. A HAZOP was carried out by operators, consisting only of chemical engineers. What the HAZOP team failed to realise was that the element on the heaters could go above the auto-ignition temperature if the liquid level was lost. There were also pressures on operators to get the plant running quickly.

Some of the topics discussed were as follows:

- The importance of following / understanding the Permit to Work system and the responsibility of the Shift Superintendent in this process.

- Communicating the design intent throughout the lifecycle - important in following change control procedures and during HAZOPs.
- Personnel involved in decision making and the HAZOP team. It was noted in this case that it would have been beneficial to have had a person from the vendor supplying the heater element involved in the HAZOP.
- Time pressures in HAZOPs - it is recognised that often HAZOPs are run to a tight schedule which influences the quality of the study.

**3). 1995 incident runaway reaction incident at a waste disposal site (Speaker: Simon Waldram, Hazard Evaluation Laboratory (Consultants) Limited)**

This presentation was regarding a runaway reaction involving 19 tonnes of hydrogen peroxide.

5 Tonnes of H<sub>2</sub>O<sub>2</sub> waste were pumped into 110m<sup>3</sup> tank with aviation fuel residue contaminated with clay and metal residues (hydrogen peroxide material safety data sheets (MSDSs) state that contact with organics and metals should be avoided). However, in this case there was no MSDSs or any compatibility test results. There was also no formal record of any risk assessment or hazard analysis carried out.

Some of the key points noted are as follows:

- Waste disposal companies do not generally appear to be geared up for safe disposal of some wastes.
- Competence of contractors.
- Management of control by company.

- More pressure / control required.
- Personnel feedback on safety matters.
- Zero tolerance safety monitoring.

**4). Texaco Pembroke Fire 1994  
(Speaker: Lucy Johnson, Genesis Engineering Consultants)**

Lucy Johnson made a presentation on the explosion and fires which occurred at the Texaco Refinery, Milford Haven on 24th July 1994. Interestingly, HSE are turning up at all CIMAH sites and asking companies what they are doing (i.e. what is their response) to this report.

It might be useful to have “cockpit” simulators for emergency response training. Critical hazards need an automatic response, not allowing people to engage in muddled thinking during an emergency. It should be ensured that operators have an understanding of the hazards and what the protective measures are doing.

It was noted that there is no guidance in the HSE report regarding the effects of explosions and how important plot layout is to risk reduction.

Key areas discussed were:

- Culture - SMS. When to shutdown - empowerment.
- Information overload.
- Lack of training: knowledge of procedures and process.
- SMS - Management of change.
- Correct use / follow up of HAZOPs

- Use and control of manual intervention.
- Emergency response - firefighting / planning based on previous experience.

**5). - Reference to several incidents  
(Speaker: John Bond)**

**Oppau: Ammonium Sulphate / Ammonium Nitrate Crystals** (4<sup>1/2</sup> 000 Tonnes) were binding and needed breaking up. Blasting powder was used to do this function. 16,000 blastings were done without mishap. Eventually enough energy was liberated from one blast to initiate a reaction which blew up the whole pile; equivalent to thousands of tonnes of TNT. A 17 m deep crater 80m in diameter resulted, killing over 430 people, 4 of them over 7 miles away. 200 bodies could not be recovered.

1966 Feyzin.

1974 Flixborough (the start of modifications procedures).

1984 Mexico City.

1988 Piper Alpha.

1989 Pasadena (largest onshore loss ever).

Note that Recommendation 1 of the Texaco report (in 4) was to ensure safety management systems should include means of storing, retrieving and reviewing incident information from the history of similar plants. Accident analysis is recognised as being quite important by HSE.

The incident model, for identifying underlying causes, is in the incident reporting training module available from IChemE. One could use this to identify the key underlying causes from any number of incidents.

The reasons for some accidents are covered up, not just for commercial reasons, sometimes political.

- Are consequences predictable ? (No).
- Do we establish all the causes ? (No)
- Do we learn from them ? (No)
- Can we prevent them ? (Yes).

Industry could do more at the present time.

Other points:

- Effective use of database: incentives; accessible (on site network); awareness; and training (IChemE)
- Also on site databases: require key people; corporate memory files (central location).
- Explicit record of basis of selection of the safety critical elements (SCEs) of the plant.

*Lucy Johnson  
Genesis*

## **COMPETITION RESULT**

### **BEST CHEMICAL ENGINEERING SAFETY MYTH OF 1997**

Readers may recall the exploding myths article (TCE 25 September 1997), launching this competition.

The purpose of the competition was to identify and dispel as many new myths about safety in the chemicals industry as possible. We promised to publish the winner's name in a future issue of TCE.

The result is now declared:-

Joint 1st prize to Steve Marshall of MST Consulting and Wayne Barnacal of Tioxide Europe.

Steve Marshall gave a good example of a myth: 'Coincident failures do not occur and need not be considered in HAZOPs'. Wayne Barnacal described a myth: 'a small quantity of flammable material will not cause much damage'.

Steve and Wayne equally share the prize of £100 allowance for purchasing safety related books plus the value of the book 'Dispelling Chemical Engineering Myths' by Trevor Kletz.

A pack, containing a compilation of all entries, is now archived in the IChemE Library.

*Simon Turner  
Foster Wheeler Energy Limited*

## **DUST EXPLOSIONS**

*A ONE-DAY WORKSHOP ORGANISED BY THE SAFETY & LOSS PREVENTION SUBJECT GROUP  
HSL BUXTON, 16 JULY 1998*

A One-day workshop has been organised on 'Dust Explosions' by the Safety & Loss Prevention Subject Group of IChemE. The workshop will be held at the Buxton site of the Health and Safety Laboratories (HSL) (the Research Agency of the Health and Safety Executive) on Thursday, 16 July 1998.

The workshop will comprise

- speakers from consultancy (Dr Norbert Gibson, Burgoyne & Partners), from HSE (Keith Wilson and Roger Santon) and from HSL (Geoff Lunn and Steve Andrews)
- a demonstrator of DUSTEXPERT™ by IChemE
- a tour of selected HSL Buxton site facilities for fire and explosion research
- a large scale demonstration dust explosion.

Attendance at the workshop will be limited to a maximum of 60. Application forms will be available in due course, but at this stage further details can be obtained from Keith Cassidy at HSE

Tel: 0151-951-4758, Fax: 0151-951-3824, e-mail: keith.cassidy@hse.gov.uk

## **CRISIS MANAGEMENT - TRAINING SENIOR MANAGERS**

*A ONE-DAY MEETING OF THE SAFETY & LOSS PREVENTION SUBJECT GROUP  
HELD ON FRIDAY 9TH JANUARY 1998  
AT THE SOCIETY OF CHEMICAL INDUSTRY, BELGRAVE SQUARE, LONDON*

51 delegates attended a most useful and interesting meeting organised by John Bond and John Gillett. The audience participation and networking between individuals was considerable throughout the day, and many delegates new to S&LP meetings commented most favourably on

the value provided.

After a brief introduction by John Gillett, there were four presentations by speakers eminent in key areas of crisis management. A final plenary session chaired by John Bond allowed the delegates to raise problems and significant issues for

discussion with the experts. Papers or photocopies of overheads were provided by the speakers for distribution to those present. A brief summary of the presentations is provided as follows:

**Professor Patrick Lagadec** of the Ecole Polytechnique, Paris made the keynote presentation. He took as his paper title "Preparing Organisations for Crisis". He explained that a new approach to crisis was needed to meet the complex demands and changes that could occur in modern society. A strategic approach from senior management was needed when an emergency that required an immediate response developed into a crisis of global and complex implications. The key problem was that of perception by senior managers. These managers had to interpret unconventional events that could subtly mutate into global crises. He emphasised that senior managers needed to develop crisis management skills in a new culture that included an understanding of crisis pathologies. Senior managers needed to be trained to ask the right questions, in an environment where the quality of questions was important. He then explained the various "Breakdown pathologies" that could lead to a new breed of crisis. He stressed that it was essential to focus on organisational culture that was currently not adapted or unwilling to deal with new crisis situations, and identified ways to implement a learning process summarised as follows:

1. Run seminars or one-to-one interviews with directors to "Free up the ability to discuss the undiscussable"
2. Study crises that have occurred in detail. Visit the people involved and learn their lessons.

3. Use crisis simulation to generate understanding and confidence in leadership.
4. Define roles and obtain specialised training to deal with unconventional events.
5. Network globally with other organisations.

**Keith Cameron**, Senior Emergency Preparedness Advisor for BP International Ltd, gave the second presentation. He explained with the aid of a training video, the three tier approach to crisis management that had been used effectively by BP to cover crisis development from an initial incident into a strategic management of crisis. Building on the keynote presentation, he identified two types of senior manager: those who had survived a crisis, and those who had never had one. He emphasised that their perception of the response to a crisis had to be weighed against the technical effectiveness of the response, and that communications were vital. He also advocated that it was better to over-react initially rather than to allow the incident to run out of control into a crisis. The problem of training senior managers was best overcome by having their roles and training written into their contracts with dates clearly fixed in their diaries for training sessions.

**Neville Jones**, Security Adviser to Zeneca Pharmaceuticals then spoke about "Improving the Awareness of Senior Managers to Crisis Management". He agreed with the previous speaker that this presented no problem if managers had experienced crisis, and explained how those with no such experience could be trained. He stressed the importance of

having a senior director responsible for crisis management, and that the training provided should be realistic and viable in order to maintain credibility. He then reviewed the crisis risks to be considered, their implications and suitable responses to make initially and to maintain until the crisis was resolved.

**Roy Ramm**, Director of Compliance of Security at London Clubs International plc. Concluded with a most lively and interesting presentation about "Criminal Crisis Management". He provided many case studies from his career as Commander of Specialist Operations at New Scotland Yard to explain crisis management in circumstances outside the experience of most senior managers. He identified the factors of criminal crises that separate them from other crises: They are deliberately caused, hard to anticipate, difficult to assess and media interest can be dangerous. This type of crisis clearly exemplified the unconventional crisis identified in the keynote paper by Patrick Lagadec. One clear message was that crisis plans should not be dependant on police support, but based on a detailed vulnerability study or audit and anticipation. Roy provided a few rules for "White-water rafting" such crises as follows:

- *Understand the environment* in which your crew will be travelling,
- *Prepare* your raft and all essential equipment.
- *Train in advance*, white water is no place for novices
- *Communicate* to make sure that your crew is paddling in the same direction.

- *You cannot control your environment*, respect it and be prepared for hidden obstacles.
- *Avoid heading blindly into danger* by concerted mental and physical efforts.
- Take advantage of calmer water to plan every move.
- Getting wet is not synonymous with drowning.

The final Plenary session was very lively with considerable participation by all present, and many issues were discussed. A few key points were noted as follows:

- The benefits of training top level managers in crisis management are that the top level team is strengthened.
- The organisation system at lower levels is also strengthened and better able to respond in crisis.
- Trust must be developed between the organisation, the media, the police, and other organisations.
- Beware of "End of Crisis Euphoria". It may be that the crisis is not really at an end.

*J.E. Gillett*  
*Zeneca Pharmaceuticals*



# **EUROPEAN PROCESS SAFETY CENTRE**

## **OUTLINE OF 1997 WORK**

### **BENCHMARKING AND INFORMATION EXCHANGE.**

The work programme this year included work on:

- Risk management.
- Fire protection of pressurised Liquefied Petroleum Gas (LPG) storage, and prevention of Boiling Liquid Expanding Vapour Explosion (BLEVEs).
- Safety-related failure frequencies.
- Mitigation of gas dispersion.
- Incident data.

### **RESEARCH NETWORKS**

The first EPSC research network, PRISM (Process Industries Personnel Safety Management) was formed. It was initiated jointly with CEFIC.

A proposal for a second research network was made in October by Dr Paul Chung of Loughborough University. This network, on process safety computer systems (both technology and applications) is under active discussion and it is hoped to start work during 1998.

### **LEGISLATION**

The Centre has maintained its close involvement with, and considerable technical input to, the Guidelines for the SEVESO II Directive on:

- Inspection Systems (TWG2)
- Safety Reports (TWG3)
- Safety Management Systems (TWG4)
- Land-use planning (TWG5)
- Major hazards arising from pipelines.

### **EDUCATION AND TRAINING**

In 1997 we looked again at the areas of education and training, and agreed

activities to undertake both to make input to the long-term development of undergraduate education and to assist member companies in their in-house training programmes.

### **NEW ACTIVITIES**

We will be starting projects in the following areas:

- Safety decisions and safer design - evaluations of probabilistic risk and deterministic methods.
- Designing to meet specified in-plant exposure and Management to reduce in-plant exposure.
- Safety-related failure frequencies.
- Mitigation of gas dispersion.
- Incident data.
- Exothermic decomposition screening criteria and classification of substances.

### **LEGISLATIVE WORK**

Although much of the work on defining the guidance for the SEVESO II Directive has been done, there is still some ongoing input to be made by EPSC, and of course ensuring awareness of the implications to industry. The principal areas here are now in land use planning, major accident hazards arising from pipelines, and management of inspection systems.

### **CONFERENCES**

The implementation of SEVESO II, 2 October 1998, Paris, organised by EPSC.

EPSC is also pleased to co-sponsor the following conferences:

9th International Symposium on Loss Prevention and Safety Promotion in the Process Industries, 4-7 May, Barcelona (EFCE)

Reliability and Risk, September 1998, USA  
(CCPS)

Accident Databases, 16-17 November,  
Antwerp (ESReDA)

EPSC web site  
Visit us at [www.epsc.org](http://www.epsc.org)

**EPSC Award**

The first EPSC Award, to be presented in recognition of a significant contribution to process safety in Europe, will be presented in 1998.

**Derryn Rolfe**  
**EPSC**

## **S&LP SG ACTIVITIES - 'IN THE PIPELINE'**

- |                          |  |
|--------------------------|--|
| <b>July 16th 1998</b>    | Dust Explosions (with demonstration)<br>H S Laboratory, Buxton<br>Organiser: Keith Cassidy     |
| <b>Sept. / Oct. 1998</b> | Workshop - Safety Culture<br>Zeneca (Hold)<br>Organiser: John Gillett / Martin Pitt            |
| <b>Nov. / Dec. 1998</b>  | TBA<br>Fire Research Station<br>Organiser: Hedley Jenkins                                      |
| <b>January 1999</b>      | Independent Auditing<br>TBA (south east)<br>Organiser: John Bond                               |
| <b>Spring 1999</b>       | Importance of Following Up Safety Recommendations<br>TBA (north west)<br>Organiser: Noel Stack |

For information about any of these meetings, please contact:

Carmela Lo Presti  
IChemE Subject Group Officer  
Davis Building  
165-189 Railway Terrace  
Rugby CV21 3HQ

Phone: 01788 578 214  
Fax: 01788 560 833

# ***HAZARD STUDY AND RISK ASSESSMENT IN THE PHARMACEUTICAL INDUSTRY***

## ***A REVIEW***

John Gillett uses his wealth of experience and intimate knowledge to deliver a readable, frank, comprehensive treatise of the subject. The book is well structured making it easy to use as a reference work. The style is not pretentious, the text doesn't preach. Rather the subject is approached as a "this is how we do it" guide, an example of what's possible which you can take / modify / adapt or discard as necessary for your organisation and circumstances. Within the text are hints and suggestions on how to achieve results. Many valuable checklists are included to aid practical application. Alternative methods of study are compared in various contexts. An outline of associated topics is provided, and how these may be networked is explored. The work is well referenced throughout, enabling the user to identify where further information may be obtained, a good glossary is also included.

The book opens with a brief history of Hazard Study in particular hazard identification and risk assessment in the Pharmaceutical Industry. This is an aid to understanding the scope of topics covered.

The 6-stage approach to Hazard Study for the life cycle of projects is then covered in some detail. It will enable the reader to identify where the stages dovetail with existing project management. To support the application of the approach, managing the process, resource requirements, training, data collection and recording are

also covered. This also includes some statistical analysis of resource requirements and a brief estimation of cost benefit. The latter may be useful in selling it to the management team.

Sections are provided on extending the application of Hazard Study to Occupational Health, Biological and Environmental hazards. This is structured in such a way as to provide enough knowledge of the subject to be able to recognise when to consult the specialist.

A hazard study problems section is included. This is wide ranging and interesting but of low practical application value. However, it does serve to highlight the versatility of the Hazard Study advocated. Comparisons between validation techniques and Hazard Study illustrate there is some way to go to harmonisation.

The examples and appendices are useful but only show a record. Perhaps Volume 2, in Coulson and Richardson tradition, will be the worked example edition, or even as technology progresses, the interactive training video CD!

In summary, an excellent guide. A useful addition to the library of all batch processing companies and colleges too.

***Mr J. R. Dawes, MIOSH  
Dr T Gannon, C.Eng., FIChem E  
Glaxo Wellcome Operations***

## CHAIRMAN'S MESSAGE

The S&LP SG continues to be one of the biggest and most successful Subject Groups. As Chairman, I hope to maintain this level of success for S&LP SG members, whilst still trying to bring a fresh minded approach and continued enthusiastic leadership. I would also like to investigate the possibility of attracting more graduates and students to key safety issues through Subject Group membership. Please do take every opportunity to encourage younger chemical engineers to join S&LP SG, it's likely to be excellent support for their Continuing Professional Development (CPD).

I would like to openly thank each speaker who has contributed to our programme and also their employers/organizations who have supported them. Recent events include the Case Studies, 75th Anniversary milestone seminar, which included the most significant safety related incident of 75 years ago, at BP Hemel Hempstead. There was also the surprisingly diverse Crisis Management seminar at SCI, Belgrave Square. Most recently the Safety deployment of Computerized Systems seminar at South Bank University. S&LP SG have managed to keep the costs of all these activities well below the lowest starting price that other organizations typically offer. How is that for value !

S&LP SG members (and anybody else) can now find out more about planned S&LP SG activities by consulting the S&LP SG website:

<http://www.shef.ac.uk/uni/academic/A-C/epe/mpitt/slpsg.html>.

For example, like 'Environment 97', there will be a 'Safety 98' cyber conference. Preparations will also shortly be initiated for a S&LP SG contribution to mark entering the new millennium. These preparations are likely to be based on the findings of the membership survey carried out in January, however if readers have specific ideas worthy of consideration, please advise the Subject Groups Officer sooner rather than later.

Following on from the mention of the membership survey, may I take this opportunity to thank all those who responded. At the time of writing it was too early to have been able to carry out a detailed analysis of the results. However a preliminary assessment reveals that a massive 28% of S&LP SG membership replied (most surveys do well to achieve a 5% response). Respondents generally expressed a desire for the Newsletter and meetings. There appears to be a preference for concentrating on interactive safety activities, technology, legislation and safety education. We hope to provide a more complete report on the results in the next issue of the Newsletter. A prize draw was offered as an incentive to completing the survey questionnaire. The IChemE Chief Executive, Trevor Evans, made the draw. The winner is Peter Flagg, Divisional Manager at Henkel-Ecolab Ltd. A cheque for the £100 prize is on its way to Peter.

The Committee are always interested in exciting new safety & loss prevention developments. Readers may wish to note that new ideas to promote and disseminate views on safety in industry are particularly welcome. Please do not hesitate to contact me or the new Subject Groups Officer (Tel 01788 578 214, Fax: 01788 560 833).

*Simon Turner*

# LESSONS I DID NOT EXPECT TO LEARN

## THE SECOND IN A SERIES

*Not all lessons come from formal presentations. Martin Pitt continues his observations on educational experiences gained while attending S&LP SG meetings, but which were not part of the programme!*

On arrival I went to the ground floor toilet and noticed that all the cold water taps were colour coded green instead of blue. As I surmised, they were blue on the upper floors. Why was this? Because blue is the colour code for cold water, whereas green is the colour code for drinking quality water. Inspection of the pipework showed that one tap on each floor was separately piped in a manner consistent with direct mains supply.

What is likely to have happened is that one box of green taps was supplied along with several boxes of blue ones. The intention was to have a green handle on the single drinking water tap on each floor. Instead the plumber used up the green box on the first toilet and then used blue for all other cold taps, whether drinking water or not.

This is an example of a colour code which was either not understood by the person responsible for implementing it or was ignored on the grounds of laziness. There was clearly no adequate quality control of the work. The net result was errors of both kinds: drinking water taps not being specially marked, and non-drinking water taps being marked as safe to drink.

I have actually observed this in three separate institutions. In one there was a sign saying 'drinking water' above one tap at one end of a row of green taps, but this could still suggest that they were all safe to drink. As with the modification to lighting related in the previous article on this series, the error had not been corrected after several years.

*Martin Pitt  
University of Sheffield*

### **TECHNICAL ARTICLES IN ISSUE 139, FEBRUARY 1998, OF THE LOSS PREVENTION BULLETIN**

- Some incidents involving AZDN.
- Improve the effectiveness of HAZOP: A psychological approach.
- A chlorine release from a vaporizer.
- Bursting disc failures on an ethylene plant.
- Main body joint failure on a cyclone.
- Fire in a transfer mix unit.

**SCHEDULE OF MEETINGS/COURSES ON SAFETY RELATED TOPICS**

<b>Topic/ Title</b>	<b>Date/ Duration</b>	<b>Venue</b>	<b>Contact Person/ Phone/Fax</b>
COSHH and its Assessments	21.4.98 2 days	Derby	Katrina Williamson Tel: 01332 677 066 Fax: 01332 679 609
Dust Explosion Hazards: Prevention and Protection, Leeds	21.4.98 1 day course	Leeds	Pam Keeling Tel: 01788 578 214 Fax: 01788 534 407
Industrial Electrostatic Hazards	22.4.98 1 day course	Leeds	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Explosion Hazards in the Handling of Flammable Solvents and Gases	23.4.98 1 day course	Leeds	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Classification of Hazardous Areas	24.4.98 1 day course	Leeds	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Safety Management and Risk Assessment	27.4.98 4 day course	Sheffield	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Management of Fires and Explosions	28.4.98 2 day seminar	Manchester	Anne Lomax Tel: 0171 973 1261
Safety Auditing	13.5.98 2 day course	Derby	Katrina Williamson Tel: 01332 677 066 Fax: 01332 679 609
Culture Change for SHE Co-ordinators and Champions	13.5.98 3 day course	Westminster	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Computer Control: Safe Practice in the Process Industries	18.5.98 4 day course	Sheffield	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Assuring it's Safe	18.5.98 2 day seminar	Edinburgh	Uloma Otuonye Tel: 0171 973 1304
Emergency Management and Leadership	19.4.98 3 day course	Leeds	Katrina Williamson Tel: 01332 677 066 Fax: 01332 679 609
Recent Health and Safety Legislation	20.5.98	Warrington	Les Rawlinson Tel: 01925 285 304
HAZOP Study and its Management	15.6.98 2 day course	Leeds	Pam Keeling Tel: 01788 578 214 Fax: 01788 560 833
Management of Fire and Explosion	08.12.98 2 days	London	Anne Lomax Tel: 0171 973 1261

## **BOOK REVIEW**

### ***SAFETY, HEALTH AND ENVIRONMENTAL ISSUES IN SMALL EUROPEAN CHEMICAL PLANTS***

**By Cris Whetton and Jari K. Schabel**

*SHE gave me for my pains a world of sighs.*

William Shakespeare, Othello

'Safety, Health and Environmental issues in small European chemical plants' is a report of an investigation carried out as part of an EC-funded SPASE Project (Small Plants Assistance with Safety and Environment).

The report is based on published papers, interviews and an extensive questionnaire and contains the opinions of the operators of small process plants (SPPs), regulators, inspectors and insurers.

Data on the attitude of SPPs to SHE issues, on HSE problems afflicting small plants and on the authorities attitudes to SPPs is summarised in this report. The findings will be used in order to develop a safety methodology for SHE assurance in small plants. Such methodology will be implemented as a guide-book containing self-assessment procedures and tailored to the needs and abilities of small plants.

The report first defines a 'small process plant' and determines the demographic characteristics of SPPs and their general attitude to SHE issues. Problems that SPPs have in satisfying SHE requirements are presented, not only from the point of view of the plants but also from that of the regulatory authorities and insurers. Current SHE management practices in

small plants are analysed and a survey was carried out on existing SHE management tools.

The book surveyed plants in the UK, Finland, Sweden and Italy (the authors tried to survey Germany but with little success).

The book is well structured with data presented in an easy to read manner. There are some interesting findings and the differing results within Europe will have significance in the development of the safety methodology.

The majority of SPPs see successful SHE management as an important part of their business and an aspect that is likely to grow in the future. In implementing SHE-management programmes, SPP operators who responded to the SPASE questionnaire are principally motivated by the need to comply with regulations. However, both 'publicity' - in the sense of corporate image or of avoiding adverse publicity - and pressure from the regulatory authorities are also substantial motivating factors.

Included in the report is a discussion on European directives and regulations which are applicable to SPPs, such as the Seveso II Directive. Companies have less than two years to adapt their safety policy to the new requirements which have to be implemented by Member States by 30 December 1998 - get reading!!

**Lucy Johnson**  
**Genesis**

