

We would love to hear from you....

Please do contact Helen Conlin, Newsletter Editor at specialinterestgroups@icheme.org about contributing articles or providing feedback and comment on: Good practice, previous SIG events, outreach (e.g. support to Universities, other institutions), or anything else that you think our readers would find interesting.

Introduction

Welcome to the February 2022 edition of the S&LP SIG newsletter.

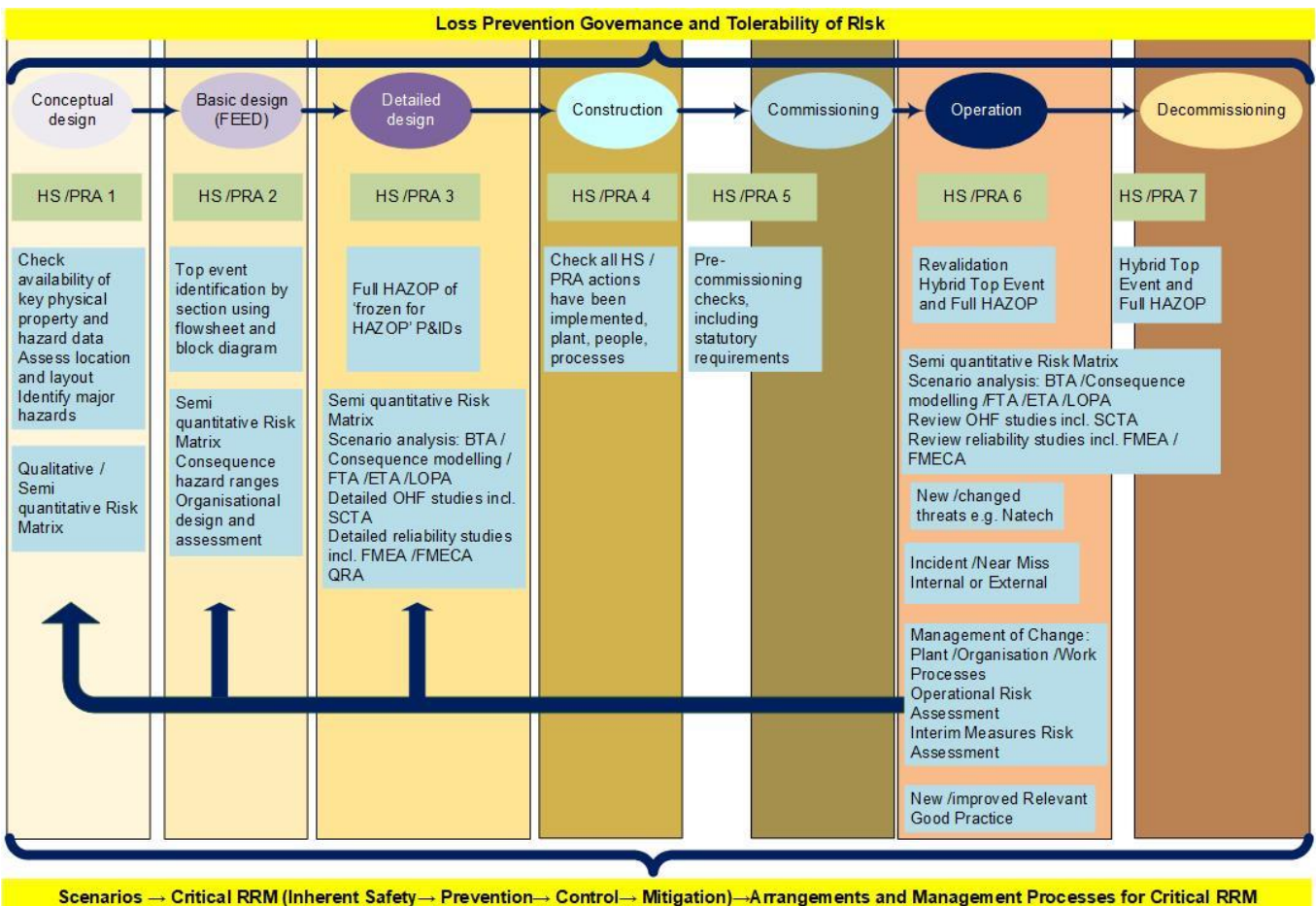
Please use specialinterestgroups@icheme.org to contact anyone associated with the S&LP SIG.

This issue includes articles on [Risk Management in the Process Lifecycle](#), [UK Gas Safety Consultation](#), [Process Safety Competence](#), [ChemEng Evolution](#), 'Safety is my Job', [Frank](#)

[Lees](#), an [Incident Round-Up](#), and the [S&LP SIG Committee](#).

Risk Management in the Process Lifecycle

23% of S&LP SIG member survey respondents indicated interest in attending an S&LP SIG event on risk management in the process lifecycle.



The S&LP SIG has formed a working group on Risk Management in the Process Lifecycle.

The figure above illustrates process lifecycle risk management linking the original ICI 'six stage hazard studies' to risk management in 2022 and is included to invite discussion.

The concept of facility lifecycle risk management is well established and much relevant good practice exists. The topic working group aim to collate and share good practice using case study illustrations.

The S&LP SIG Risk Management topic working group plan to organise a webinar during Q3 2022 to facilitate information and good practice sharing.

If you wish to participate in the Risk Management topic, please contact us at specialinterestgroups@icheme.org.

UK Gas Safety Consultation

UKHSE is seeking views by 21 March 2022 on changes to the Gas Safety Management Regulations:

1. A new lower Wobbe number limit
2. To remove the Incomplete Combustion Factor and the Soot Index limits in Schedule and introduce a relative density of ≤ 0.700
3. To incorporate the HSE class exemption limit of ≤ 1 mol% for oxygen in gases conveyed at pressures up to 38 barg
4. Clarity that biomethane pipelines are to be considered to be part of the gas network
5. Clarity that co-operation duties apply to operators of liquefied natural gas (LNG) import facilities
6. For a general duty on the industry to provide a continuously manned telephone service

These changes contribute to wider strategic Government objectives of security of energy supply and decarbonisation of the energy sector as the UK transitions to Net Zero carbon emissions by 2050.

<https://consultations.hse.gov.uk/hse/cd291-revision-gas-safety-management-regulations/>

University Process Safety Workshops

The S&LP SIG is collaborating with London South Bank, Queen Mary, and Brunel Universities to run a series of process safety workshops during February /March 2022. These

workshops provide students with the opportunity to meet chemical engineers from industry, discuss process safety topics and apply the HAZOP technique.

IChemE is advertising for volunteer trainers to support future workshops:

<https://www.icheme.org/media/17955/icheme-slpsig-process-safety-trainer.pdf>

The workshops have been running since approx. 2007 and are hugely appreciated by University staff and students. We would welcome interest from other academic institutions and from people keen to become involved in co-ordinating and supporting the workshops. Please contact us at specialinterestgroups@icheme.org.

Process Safety Competence

The IChemE Major Hazards Committee (MHC) formed in 2020 and the S&LP SIG provides four representatives. The MHC initiated two projects during 2021:

- ❖ Process Safety Competence
- ❖ Lessons Learned

More information on the Lessons Learned project will be provided in the next S&LP SIG Newsletter.

The Process Safety Competence project is being chaired by two S&LP SIG committee members and comprises three parts:

- ❖ Part 1 – Assuring Competence in Process Safety for Chemical Engineers
- ❖ Part 2 – Assuring Competence in Process Safety for Process Safety Professionals
- ❖ Part 3 – Organisational Process Safety Competence

Part 1 is being progressed first and a Working Group comprising thirteen volunteers and two IChemE staff has formed and met twice so far. There is a second group of volunteers available for peer review of project output.

The International Atomic Energy Authority (IAEA) (1996) definition of competence is being used by the project:

The **ability** to put **skills** and **knowledge** into **practice** in order to perform a job in an **effective** and **efficient** manner to an **established standard**

The objectives for Part 1 are:

- ❖ To develop a 'route map' for process safety competence over the full lifecycle of a chemical engineer.
- ❖ To conduct a review of IChemE's activities in building competence in Process Safety through an individual's professional lifecycle
- ❖ To determine 'What Process Safety Competence looks like?' for Chemical Engineers, covering the subjects and level of competence required including:
 - Reviewing existing documentation including from the ISC and others such as the CIA
 - Reviewing what the accepted definition of competence is, including the focus on learning outcomes to be demonstrated
- ❖ The project should include, but not be restricted to, training and assessment for: undergraduates, graduates /post graduates and in house accredited schemes provided by IChemE and others
 - This focusses on the demonstration of competence, not just assessment of training
- ❖ To make recommendations on any changes needed to improve effectiveness.

We would welcome comments and questions, please contact us at

specialinterestgroups@icheme.org.

ChemEng Evolution

2022 marks the centenary of the Institution of Chemical Engineers. IChemE will be celebrating our profession and the members who have shaped it. Activities will highlight chemical engineering achievements plus ideas and solutions for the future century and its challenges.

A large group of volunteers from across IChemE have developed a website dedicated to our centenary:

<https://www.chemengevolution.org/>

This is divided into nine themes, with volunteers from the Safety & Loss Prevention SIG contributing in particular to the 'Processes and Safety' theme.

June 2022 will be the month in which we focus on 'Processes and Safety'. IChemE will be

holding a panel discussion, 'New Safe Processes for a Sustainable World', in which high profile chemical engineers will explore their vision of the future [**08:30 BST, Wednesday 8 June 2022**].

As a special interest group, we will be marking June with a webinar called 'There's more to risk assessment than HAZOP,' when we will celebrate the development of hazard studies by chemical engineers and explore good practice [**08:30 BST, Tuesday 21 June 2022**].

We will be advertising these events to members in the spring by e-mail, using the S&LP SIG website and via TCE.

'Safety is my Job'

There have been numerous significant advances in process safety and loss prevention over the last 60 years.

Whilst methods, tools, techniques and systems are crucially important, they are only part of the story. Good process safety performance can be achieved only when applied on a consistent basis to all aspects of a facility from design and operation through to decommissioning. This requires the co-ordinated efforts of people throughout an organisation: the operators, the technicians, the engineers, the inspectors, the managers and the directors. Many will be Chemical Engineers and as part of IChemE Evolution, the Safety & Loss Prevention SIG is supporting 'Safety is my Job'. This is a series of 'Biopics' showing the role in Process Safety by Chemical Engineers across a range of sectors.

It features engineers at all stages in their careers carrying out roles, which may not be celebrated in other ways but are essential in any high performing organisation. The technical aspects of their work will, in most cases, have been described elsewhere. The articles will concentrate on the people and their job as well as the enthusiasm and satisfaction they gain from it.

They have shared their views on what led them to Chemical Engineering and how they expect industry to adapt to the challenges faced by society and by climate change.

It has been possible to include only a very small proportion of the many thousands of engineers working in safety across the wide range of sectors where chemical engineers are employed. Shortened versions of the articles will

feature on the IChemE Evolution website and in 'The Chemical Engineer' during 2022. Additionally, all contributions are featured in full on the S&LP SIG website.

We hope that readers will find their 'stories' as inspiring as we have.

Links:

<https://www.chemengevolution.org/processes-safety/safety-is-my-job>

<https://www.icheme.org/membership/communities/special-interest-groups/safety-and-loss-prevention/resources/safety-is-my-job/>

Remembering Frank Lees

This short note celebrates the contribution of Frank Lees to Safety and Loss Prevention and is provided by the S&LP SIG Chair Andy Rushton.

Frank Lees (1931 – 1999) was not a typical chemical engineer. Though he had a family background in gas engineering, he first chose to study modern languages (Russian and German) at Oxford.

Later – in between periods working for ICI, in particular on human-computer interactions in control of plants – he obtained his Chemical Engineering degree through Imperial College, then a PhD at Loughborough. He became Professor of Plant Engineering in 1974 – a memorable year – and with support from the Institution of Plant Engineers (now SOE*) he compiled the first edition of what is now Lees' Loss Prevention in the Process Industries, his most monumental legacy to the profession.

I recall Frank always taking notes in pencil during research meetings. It allowed backtracking if later discussion undermined an earlier assertion. He worked against whatever problem we faced like a rising tide - there would be setbacks but inch by inch territory would be captured. In the University library, I found he had underlined in pencil all the sources he referred to when developing the book.

His facility with language as well as science was crucial to overcoming a key obstacle of loss prevention – the need to communicate the problem and the solution, without which all data, modelling and analysis is in vain.

Frank knew and used the power of keeping sentences short. That way each point can be established securely and the most complex subjects ground down into digestible (or contestable) pieces.

Frank's life was rich inside and outside engineering (Justice of the Peace, Amnesty International, Quaker ...). He was never quick to judge, but meticulous and irresistible in his approach to any task. Frank had a lot to be satisfied about but I know he was disappointed by the tendency of the legal process, in the end, to pin the blame on the last person to touch a fatally configured plant.

Frank Lees was a scholar and a gentle man. We will be blessed if the stars align to produce his like in the next century.

For more see his [citation for DSc](#)
*[Society of Operations Engineers](#)

The 2022 Lees medal has been awarded to Ashley Hynds and Scott Templeton for their paper:

'Safe reinstatement of process plant - Learnings from HSE's regulation of the UK offshore oil and gas industry.' Symposium Series No 167 'HAZARDS 30' Paper 58 9pp

<https://www.icheme.org/media/17985/2022-medal-winners-detail.pdf>

Hazards Forum

Following a selection process overseen by the IChemE Major Hazards Committee, Ian Wallace has been appointed to the volunteer position of IChemE Trustee and Member of Technical Advisory Committee of the Hazards Forum, succeeding John Munnings-Tomes.

The Hazards Forum, founded in 1989, is an independent, non-profit, non-governmental, professional association promoting the study of disasters, public understanding of risk and of risk reduction strategies. It brings together the UK institutions of Civil, Mechanical and Chemical Engineers with other interested parties, and more information is available on their website:

hazardsforum.org.

We would like to thank John for all of his work during a time of substantial change and reinvigoration at the Hazards Forum and will offer Ian every support in this new role.

Incident Round-Up

Unfortunately, technical (process) safety incidents continue to occur. As loss prevention and process safety professionals, we continue to learn in order to prevent more in future. The following incidents have occurred since the last Newsletter. Please contact Richard Mundy specialinterestgroups@icheme.org, if you would like to highlight a recent incident.

[Fayetteville \(North Carolina\) Animal Fat Recycling Incident, 12 September, USA](#)

Suspected hazmat incident at fat rendering plant. Two people killed.

[Los Angeles \(California\) Cannabis Extraction Plant Explosion, 18 October, USA](#)

Explosion and following fire at plant extracting cannabis oil from hemp. Two people killed.

[Ryazan Explosives Plant Blast, 22 October, Russia](#)

Explosion at gunpowder plant. Sixteen people killed from seventeen member shift.

[Dormagen Chemical Plant Fatality, 13 December, Germany](#)

Incident at chemical complex whilst cleaning using caustic soda. One person killed.

[Cilacap Oil Refinery Tank Fire, 13 November, Indonesia](#)

Fire at an oil refinery storage tank.

[Mina al-Ahmadi Oil Refinery Fire, 14 January, Kuwait](#)

Fire at refinery gas plant during maintenance. Four people killed.

[Ottawa Road Tanker Maintenance Explosion, 18 January, Canada](#)

Explosion and fire at facility maintaining fuel tankers. Six people killed.

[Tuas Chemical Storage Fire, 21 January, Singapore](#)

Large fire at chemical distribution warehouse, believed to have started at a diesel tank. 70 firefighters deployed.

[Cheongju Battery Factory Fire, 21 January, South Korea](#)

Small explosion and following fire at car battery factory. One person killed.

[Winston-Salem \(North Carolina\) Fertiliser Plant Fire, 1 February, USA](#)

Fire at fertiliser plant prompts evacuation of 6,500 people, due to fears of potential for ammonium nitrate explosion.

[Niger Delta Floating Production Unit Fire, 3 February, Nigeria](#)

Fire at floating production, storage and offloading (FPSO) vessel, leading to the vessel sinking.

S&LP SIG Committee

The S&LP SIG committee last met on 14 February 2022.

Planned future S&LP SIG committee meeting dates:

- ❖ 12 April 2022
- ❖ 15 June 2022
- ❖ 18 August 2022
- ❖ 17 October 2022
- ❖ 15 December 2022

If you have something for the committee to consider, please contact Andy Rushton, Chair, at specialinterestgroups@icheme.org.

We are grateful to those who take the time to contribute to the S&LP SIG Newsletter. Please note that content and opinions are those of the contributor(s) (or in resources accessed online) and do not necessarily reflect the views of the Safety & Loss Prevention Special Interest Group Committee or the Institution of Chemical Engineers.