



HAZI.d

IOSH Hazardous Industries
Newsletter
Feb. 2021

Chair's Update

We closed out 2020 with a really interesting session on Lithium-ion batteries, those essentials of modern living that power everything from our mobile devices to electric cars and so much more. Many of you may remember the problems that Boeing had with their 787 planes, when thermal runaway on lithium ion batteries resulted in fires, as a result fleet was grounded for a short period in 2013. My thanks go to Nigel Blumire (HIG committee member) for a fascinating webinar, which stressed that whilst incidents are rare with increasingly large numbers of batteries in use, and an ever-increasing range of applications, we need to raise awareness of the issues.

If you could not join us on the day to learn more about the hazards (and the risks) the recording is still available on the IOSH site, it certainly makes you think twice about where you leave devices on charge!

Looking forward we are aiming to continue the webinar program with a session hopefully every couple of months across the year and we all hope that at some point in the future we will be in a position to hold a live "in person" event. In the mean time we would welcome ideas for any topics you would like to have us consider AND recommendations for high quality speakers. Drop me a note via

Extreme Weather?

Climate change will remain a fixture on risk registers for years to come and the impact of extreme weather raises some significant issues for all safety professionals. As I start putting pen to paper on the newsletter storm Cristoph is raging outside, perhaps it is only natural that my mind turns to such risks as the trees bend in response to the gale force winds and rain.

Content

- Chair's update
- Next Webinars
- Extreme Weather?
- EPSC – an Introduction
- Call for support
- Incidents in 2020

Next Webinars

25 February Ian Travers is challenging us to think about how we approach risk assessments.

Risk Assessment - don't over focus on the process at the expense of the outcome
(Click on the url to book.)

This session will take a fresh look at risk assessment and engage people's thinking about what risk assessment delivers in terms of control of major incidents and whether the techniques people reach for when undertaking a risk assessment are capable of actually delivering the certainty organisations and regulators seek.

We hope you can join us. Following on from the February session we are arranging a date in April to examine learning from incidents so keep an eye out for emails and monitor our LinkedIn site.

There is guidance available online, in this note I mention a couple of interesting publications you may like to add to your library they are free to download. Just over a year ago the International Atomic Energy Authority (IAEA) published "Adapting the energy sector to climate change" which explores impacts arising from extreme weather events as well as gradual climate change.

<https://www.iaea.org/publications/12338/adapting-the-energy-sector-to-climate-change>

In August 2017 following hurricane Harvey emergency responders were exposed to hazardous fumes from burning organic peroxides at the Texas Arkema Inc. site. Extensive flooding caused by heavy rainfall from the hurricane exceeded the equipment design elevations and caused the plant to lose power, backup power, and critical organic peroxide refrigeration systems. The chemical Safety Bureau report in to the incident called for guidance to help companies assess their facility risk from all types of potential extreme weather events. As a result and with thanks to AIChE guidance was developed and published on the assessment and planning of natural hazards. To sit alongside this report the CSB also issued a video

<https://www.aiche.org/ccps/publications/process-safety-monographs>

<https://www.csb.gov/csb-issues-new-video-safety-message-and-safety-alert/>

The Chemical Industries Association has published notes on "Managing process plant through severe and prolonged cold weather" but for anyone who has experienced Siberia or Alaskan winters they may smile a little when reading it. But what is really important to consider and the CIA stress is that the site plans need to be robust and appropriate so please do know the design limits of you facilities and continually review against extreme conditions.

<https://www.cia.org.uk/Portals/0/Documents/Publications/Winterisation%20Nov%202011.pdf?ver=2017-01-09-143806-237>

Whilst hurricanes create a mind set of high wind speed, hurricane harvey hit speeds well excess for 200km/hr but it also produced extreme levels of rain with some areas receiving more than 40 inches of rain. The IAEA document makes reference to ensuring we consider combinations of events, cummulative impacts and durational aspects.

EPSC – An introduction to

Accessing high quality information and support is always valuable and I would like to thank the European Process Safety Centre (EPSC) for allowing me reproduce and share some of their material. The centre was founded in 1992 and provides an active network for members to work together on process safety. EPSC provides high quality, reliable information on process safety. Working groups draw together validated best practices from the public domain and combine these with member companies' experience. Training material and risk analysis tools are made available through the EPSC web- site. Trends and innovations in process are followed and shared. EPSC has an extensive archive of technical reports, best practice guidance, and position papers on a wide variety of process safety topics

Membership is company based rather than individual, however I recommend a look at their web site where there is some valuable information on their projects and items available to non-members.

In this newsletter I just want to draw your attention to a couple of items from the EPSC. The first is an introduction to Process Safety Fundamentals and can be downloaded from:

https://epsc.be/Products/PS+Fundamentals/_/EPSC%20Process%20Safety%20Fundamentals%20-%20Booklet.pdf

It includes some useful information across 18 topics for process safety excellence ranging from isolations through to overrides of safety critical systems. Why not download and check how your operations and procedures stack up against the examples it includes.

Another document I have found very useful is a slide pack that includes a multiple examples of useful practices to avoid Human Error. Alongside an introduction to human Error the pack includes some 50 worked examples. An example is that shown below for identifying valve positions. We will probably use more examples in later newsletter and we will upload the full presentation to the IOSH Hazardous industries group home page. As soon as it is posted we will let you know.

Identify Valve Positions

Problem

Manual valve left in the wrong position after maintenance, start-up, cleaning, etc. can cause incidents

Solution

- Make it easier to spot a valve in wrong position. Colour code for manual valve handles, e.g. **green** for normally open and **red** for normally closed
- Tag numbers at manual valve that correspond to procedures and P&ID
- Add a label to the valve in case of a special operation that require a not normal position

EPSC

Valve position

Colour coded and tagged valves (examples):



Normally Open: Green



Normally Closed: Red

Call for Support

We would also like to hear from members who would be willing to help us. We aim to establish within our Group a network of people who are willing to share experience and answer the questions on any technical queries, if you can help then please drop us an email at IOSH for the attention of Alison our relationship manager: Alison.Nicolson@iosh.com

Incidents in 2020

In our previous newsletter we shared some databases for incidents and case studies and I felt it would be useful to start this year with a reminder of some of last year's incidents. These show us that there is still a lot of work to be done if we are to embed good practices in safety.

- 10th January - Fire at Scottish Borders chemical plant (<https://www.thechemicalengineer.com/news/fire-at-scottish-borders-chemical-plant/>)
- 14th January - Explosion at Spanish ethylene oxide plant (<https://www.thechemicalengineer.com/news/explosion-at-spanish-ethylene-oxide-plant/>)
- 29th January - Three killed in Texas oil well blowout (<https://www.thechemicalengineer.com/news/three-killed-in-texas-oil-well-blowout/>)
- 25th February – Large fire at refinery in California (<https://www.thechemicalengineer.com/news/fire-occurs-at-marathon-petroleum-refinery-in-california/>)
- 4th March - Fire at South Korea facility injures 56 (<https://www.thechemicalengineer.com/news/fire-at-south-korea-facility-injures-56/>)
- 10th March - One dead in Spain chemical plant explosion (<https://www.thechemicalengineer.com/news/one-dead-in-spain-chemical-plant-explosion/>)
- 15th April - Explosion at US paper mill (<https://www.thechemicalengineer.com/news/explosion-at-us-paper-mill/>)
- 7th May – Styrene gas leak in India (<https://www.thechemicalengineer.com/news/hundreds-hospitalised-after-styrene-gas-leak-in-india/>)
- 15th May – Italian blast at chemical plant (<https://www.thechemicalengineer.com/news/italian-blast-seriously-injures-two-workers/>)
- 27th May – Fire at Indian gas well (<https://www.thechemicalengineer.com/news/fire-at-indian-gas-well-extinguished-after-five-months/>)
- 29th May – Oil tank collapse in Russia (<https://www.thechemicalengineer.com/news/oil-tank-collapse-likely-caused-by-melting-permafrost/>)
- 3rd June – Chemical factory explosion in India (<https://www.thechemicalengineer.com/news/10-dead-after-chemicals-factory-explosion-in-india/>)
- 2nd July – Refinery fire in South Africa (<https://www.thechemicalengineer.com/news/refinery-fire-in-south-africa-kills-two/>)
- 4th August – Beirut explosion
- 27th August – Fire at Louisiana chemical plant cause by Hurricane Laura (<https://www.thechemicalengineer.com/news/fire-at-louisiana-chemical-plant-following-damage-from-hurricane-laura/>)
- 8th September – Explosion at Florida chemical facility (<https://www.thechemicalengineer.com/news/explosion-occurs-at-florida-chemical-facility/>)
- 10th September – Second fire in Port of Beirut (<https://www.thechemicalengineer.com/news/another-fire-breaks-out-at-beirut-port/>)
- 5th November – Indian reactor explosion (<https://www.thechemicalengineer.com/news/two-killed-in-indian-reactor-explosion/>)
- 4th December – Explosion at UK water treatment site (<https://www.thechemicalengineer.com/news/four-killed-in-explosion-at-uk-water-treatment-site/>)
- 8th December – US chemical plant fatality (<https://www.reuters.com/article/west-virginia-chemours-incident-idUSKBN28JOCC>)
- 9th December – Fire at Texas oil storage tank (<https://www.thechemicalengineer.com/news/worker-dies-in-us-chemical-plant-explosion/>)

David Evans
Chair IOSH Hazardous Industries Group