

The IChemE Safety Centre

2022 Annual Report

Not getting hurt is a basic human right

People have a right to stay safe, no matter where they are. Sadly, the high hazard industries have not always measured up against this moral imperative and the Institution of Chemical Engineers (IChemE) recognises that eternal vigilance, proactive learning, and constant improvement are fundamental for outstanding safety performance. This was the driving force that catalysed the idea of a new IChemE Safety Centre (ISC) at the beginning of the decade.

The centre will celebrate its ninth anniversary at the beginning of next year. It has grown rapidly from its modest beginnings back in January 2014 when six founding partners came together with the aim of creating a new framework for process safety built around leadership across six functional areas:

- knowledge and competence
- systems and procedures
- human factors
- engineering and design
- assurance
- culture

These areas apply to all industries, at all points in the business life cycle. In acknowledging this proposition, the founding partners unlocked a powerful learning process and the ISC began to explore and develop the concept of sharing for safety across different industries.

Today, as 2022 draws to a close, the ISC provides a dynamic network for 49 companies, along with a further 42 supporting partners and collaborators from academia, government, and other process safety centres of excellence. In May 2022, Dr Zsuzsanna Gyenes moved to a new role with the European Commission. In late 2022 Craig Wright joined the ISC as Process Safety Specialist, covering the UK, Europe, Africa, Middle East region.

This short report expands on the values and behaviours that underpin our work. It describes our achievements to date, and it sets our ambitions for the years ahead. IChemE does not have a monopoly on wisdom, and we recognise that safety is not proprietary; that is why the centre aims to share best practice and encourages others to do likewise. Join us on the journey to process safety excellence at the ISC.

Stay safe.

Trish Kerin

Director, ISC
December 2022



Membership

Operating partners

These companies are represented on the ISC's advisory board. They set the strategic direction for the centre. The ISC Advisory Board is chaired by Dr Marlene Kanga, who took on the role from Margaret Donnan in August 2022. Margaret served six years as the ISC Chair.

- AirServices Australia
- Anglo American
- APA Group
- BHP
- BP
- Chevron
- EnQuest
- ExxonMobil
- Fortescue Metals Group
- Jemena
- Kuwait Integrated Petroleum Industries Company
- Loy Yang B
- Methanex
- Oji Fibre Solutions
- Orica
- Origin Energy
- Petronas
- Santos
- Shell
- SnowyHydro
- Todd Corporation
- Viva Energy
- Wessex Water
- Woodside

Industry partners

Employees from these companies play an active role in the centre's working groups.

- Acting Consulting Training (ACT)
- AMOG Consulting
- Arup
- CNA Hardy
- Dekra
- ERM
- Exida
- FM Global
- Global Industrial Safety Solutions
- HIMA
- ioMosaic
- Industry Risk Control
- IRESC Global
- KBR
- PDQ Scotland Limited
- PDV Consultants
- Process Safety Verification
- PSRG
- R4Risk
- RAS Limited
- RiskConsult
- Safety Solutions
- Sherpa Consulting
- Vanguard Solutions
- Worley

Supporting partners

These organisations are invited to participate in ISC activity and support our work.

- Aston University
- Civil Aviation Authority of New Zealand
- Dalhousie University
- Government of South Australia
- Institute of Sustainability for Chemicals, Energy and Environment (ISCE2)
- Latinamerican Council for Process Safety (CSP)
- Ministry of Environment and Food of Denmark
- Michigan Technological University
- Monash University
- Newcastle University
- Norwegian Directorate for Civil Protection
- Oil and Pipelines Agency
- Petroleum Safety Authority Norway
- Purdue Process Safety & Assurance Center
- Queensland University Technology (QUT)
- RMIT University
- SafeWork NSW
- Singapore Institute of Technology
- Universiti Teknologi Petronas
- University of Adelaide
- University of Auckland
- University of Bath
- Università di Bologna
- University of Canterbury
- University College Cork
- University College London
- University of Greenwich
- University of Leeds
- University of Limerick
- University of Manchester
- University of Melbourne
- University of New South Wales Sydney
- University of Patras
- University of Sheffield
- University of Strathclyde
- University of Surrey
- University of Toronto
- University of Western Australia

Collaborators

The ISC seeks to collaborate with other safety centres and has agreements with these organisations.

- Mary Kay O'Connor Process Safety Center
- Center of Safety Excellence
- Centre of Advanced Process Safety
- Jordan Engineers Association (JEA)

We are a values-based organisation

The ISC's operation is guided by a series of underlying values. These have been agreed by our advisory board. All work programmes and activities are benchmarked against these values.

The ISC is a thought leader in process safety for the simple reason that creating a world in which the highest standards in process safety are maintained everywhere, at all times, is absolutely the right thing to do. We strive to do what is right and we always want to do things better today than we did yesterday. Our expectations are high, and we constantly seek continuous improvement. We will collaborate with others whenever it is appropriate to do so. Process safety depends on partnerships, and we will respect our partners by keeping our promises and doing what we say we will do.

A year of progress and delivery

As the COVID-19 pandemic started to recede, plans and events moved to the hybrid platform. The ISC team continued to actively deliver and engage with members and non-members alike.

ISC member conference

In May 2022 the ISC held its second member only conference. The topics covered were Delta HAZOP, remote HAZOP, machine learning to predict major incidents and natural hazard exposure to chemical plants. This was well received by members.

Webinars

The ISC team continued to deliver webinars as travel restrictions and lockdowns started to ease in 2022. Topics ranged from safety lore, lead metrics permit to work, hydrogen incident taxonomy and hazards identification to name a few. Attendance and views of webinars remained in the thousands and were spread across the six continents.

Ongoing projects

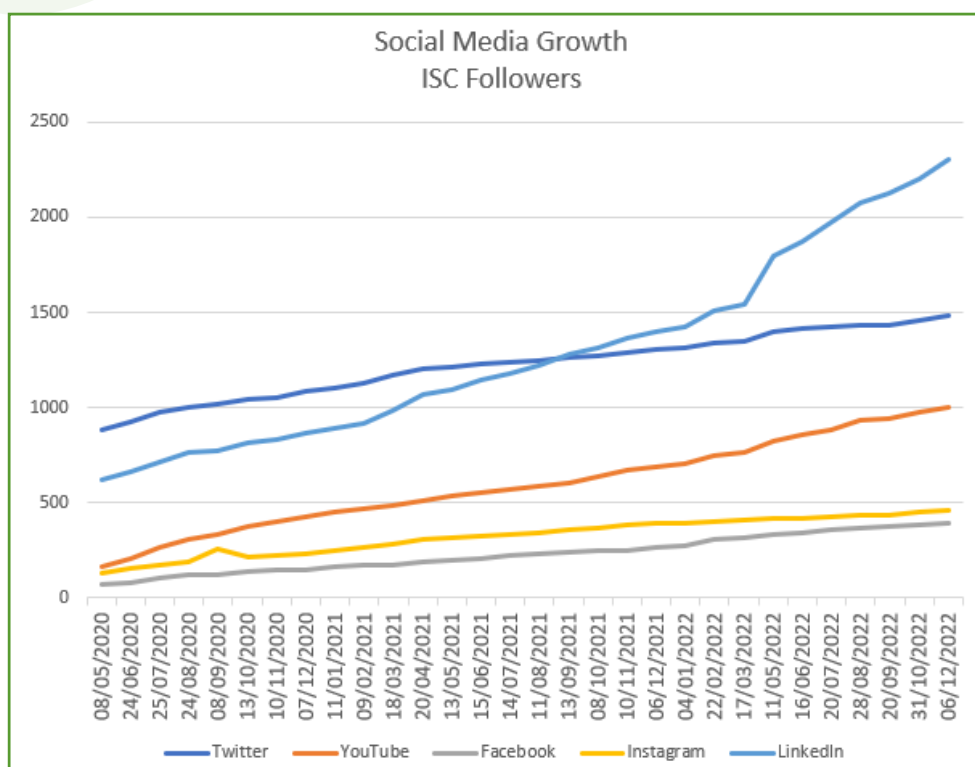
Ongoing projects include developing guidance on how to implement lead metrics – audits and risk assessment methodologies.

Interactive learning

The ISC will release its twelfth case study in the series at the end of 2022. This case study *Setting Sail* will focus on understanding the hierarchy of controls, showing how engineering controls are better than administrative ones.

Social media

Since 2020 the ISC have produced a range of incident anniversary videos targeted towards a social media audience. We have continued to produce these short videos across 2022. This has kept our learning information available to a wide audience in this digital world. This content continues to be well received and our social media impact continues to grow month on month, with an average growth across all channels of 110% since May 2020. We post content across LinkedIn, Facebook, Twitter, Instagram, and YouTube, making our resources easily available for people.



Safety lore

The ISC launched the first issue of the *Safety Lore* in March 2018, and it has continued to expand and grow, with four editions per year. We now offer this bulletin in both written English and Spanish, an English podcast, and an English webinar. This helps ensure that no matter what your learning style, there is a way for the information to be accessible to you.

Other activity

The ISC continues to engage with members all over the world, delivering webinars and providing facilitation of the ISC Case Studies whether it is virtually or in person.

IChemE's Major Hazards Committee

At the direction of the IChemE Board of Trustees in 2020, the ISC has led the establishment of IChemE's Major Hazards Committee (MHC). This committee is chaired by the ISC Advisory Board Chair. Margaret Donnan completed her second term as ISC Chair in August 2022 and she was succeeded by Dr Marlene Kanga, AO Hon. FIChemE. The Deputy Chair, Steven Flynn, is nominated by the Learned Society Committee. The MHC brings together representatives from across the IChemE membership, including the Safety and Loss Prevention Special Interest Group, the IChemE Safety Centre member companies, the Hazards Committee, the Loss Prevention Panel and Process Safety and Environmental Protection Journal editorial board. The MHC has developed an agreed agenda for Major Hazards Management across IChemE and initiated two projects. The first is looking at how lessons are shared and ways to improve the learning and the second is to understand and map the process safety competence development of an engineer across their career. These projects are led by the MHC members with the support of volunteer teams from the IChemE membership.



L-R: Dr Marlene Kanga, ISC Chair; Margaret Donnan, Former ISC Chair; Trish Kerin, ISC Director

Where do we go from here?



As we continue into our tenth year of operation, the ISC will continue to broaden its reach, working with different industry sectors. This includes working within the new energies sector to ensure they are equipped with the necessary elements for success.

The ISC will also continue its focus on leadership. This is supported by the work of our Director Trish Kerin. In October 2022 Trish was named the inaugural Women in Safety Network Leader of the Year, recognising her work globally.

Science & Technology Australia also named Trish in the latest cohort of Superstars of STEM. In this role, she will help to inspire the next generations of diverse young Australians in STEM. She was one of 60 scientists, technologists, engineers and mathematicians chosen as a STEM expert.

A message from our incoming Chair Dr Marlene Kanga AO

I am looking forward to leading the work of the IChemE Safety Centre as Chair of the ISC Advisory Board and Chair the Major Hazards Committee. The Major Hazards Committee brings together all the IChemE groups that are active in the major hazards so that we can pool our knowledge and insight, agree the important issues and priorities, speak with one voice, provide thought leadership, and opportunities for professional development.

The IChemE Safety Centre complements the work of the Major Hazards Committee, bringing together the companies that work within the major hazard industries, as well as regulators and universities that educate our engineers to share and learn about process safety.

As we pivot towards a low carbon future, chemical engineers, especially those engaged in process safety, will be engaged in addressing and minimising the risk of operating in new fields including hydrogen production, storage and transmission, energy storage devices, the development of chemical feed stocks from alternative low carbon sources, to name a few. Safety is a priority if these new technologies are to be implemented successfully around the world. The work of the IChemE Safety Centre and the Major Hazards Committee has never been more important and relevant. We look forward to 2023, to progress the projects on hand, and to address the opportunities and challenges that may arise.

The year 2022 has provided immense challenges, no matter where you are. Effective management of process safety has remained as important as ever, and there has been an increased focus on leadership at this time. The IChemE Safety Centre is committed to continuing to develop and share useful resources in process safety so that everybody, no matter where they are, can access the information they need to play their part in improving process safety outcomes. Because nobody should get hurt, anywhere, ever.

We welcome your support and input to our valuable work. Please contact us if you would like more information on the ISC, its work or how it may add value to your organisation.



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