

# Building a Safer Future

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## Proposals for reform of the building safety regulatory system

### Consultation response from the Institution of Chemical Engineers (IChemE)

On behalf of the Institution of Chemical Engineers, we would like to respond to the above consultation document.

Our knowledge and experience is not in the residential building and construction sector, but the IChemE and the process industries sector have had to become experts at managing the safety of hazardous and complex systems due to some very painful lessons from major incidents that have occurred in our past. Unfortunately, our experience is that accidents keep happening despite our best endeavours, highlighting the how difficult it is to manage risks in practice and why we need to keep developing our methods. We believe this learning is relevant to the proposed changes in regulation and also the changes in culture that the legislation will promote. Our input is necessarily over-arching and high level so apologies in not providing specific examples for each of the many questions.

IChemE has found that professional engineers need to be educated to recognise that they are dealing with complex systems and to understand how they work in practice in order to meet the challenges of managing major accident hazards. They need to understand that the performance of individual components does not explain how the overall system performs and that small and cumulative change can affect the integrity of the whole process. This is embedded in IChemE's education and professional development. We are looking to work with other professional bodies to assist in incorporating this learning both in academic studies but also continuing professional development. As a profession, we have also had to understand that rules-based compliance is insufficient and that a focus on “outcomes” provides a much more appropriate and broader challenge which drives change and improvement in the process industries. For this reason, we would encourage a new regulatory framework that looks beyond ever increasing detailed and prescriptive compliance to embrace a regime focussed on the delivery of outcomes e.g. Control of Major Accident Hazards (COMAH).

The introduction of safety reports for upper tier COMAH establishments high hazards sites (e.g. COMAH tier 1 sites ) has driven an holistic appreciation of the whole system in which

the duty holder (operator) has to explain the risks, how they can be mitigated and demonstrate how they have been reduced to as low as reasonably practicable. Compliance with detailed regulation is necessary but is by no means sufficient. There is no hiding place behind “I complied with the rules”. This drives a culture of chronic unease.

The need for and encouragement of sharing learning from incidents is vital. This goes beyond identifying underlying and root causes to developing a better understanding of what can and should be done to manage risks more effectively in practice. This is an absolutely critical activity and it could go hand in hand with sharing “good practice”. Most incidents in the process sector are caused by repeat failures of lessons learnt in the past for which good practices have been developed to prevent. The biggest challenge the process industries currently face is to convert “good practice” into “common practice”. Issues include getting companies to share “good practices” and getting some sort of validation about what a “good practice” is, as this helps others to consider implementation. Professional bodies as well as Trade Associations can help in this regard with these barriers.

The consultation document talks not only about prevention, but also emergency response to the incident. Again, the process industry experience is that each high hazard site has a specific emergency response plan which involves the facility operator, emergency services and local government planning officers and that there is a requirement for the plan to be exercised regularly. This is part of the CoMAH regulations. The process industries (and I am sure many other sectors) have experience and I would reference the Emergency Planning College and similar bodies who are experts.

To make all this happen requires leadership. This change is going to be quite fundamental. We would encourage MHLGC to look at the recent work completed in the process industries on leadership standards in managing major hazard risks and how this has now been included with the regulator assessment process of major hazard sites in the chemicals sector starting in 2019.

IChemE and its members stand ready to help the building and construction sector in managing the transfer of knowledge and experience and in collaboration with other professional bodies to assist in preparing all professional engineers to tackle the challenge of major accident hazards and how to prevent these very high consequence and very low probability events.

## What is chemical engineering?

Chemical, biochemical and process engineering is the application of science, maths and economics in the process of turning raw materials into everyday, and more specialist, products. Professional chemical engineers design, construct and manage process operations all over the world. Oil and gas, pharmaceuticals, food and drink, synthetic fibres and clean drinking water are just some of the products where chemical engineering plays a central role.

## IChemE

The Institution of Chemical Engineers (IChemE) advances chemical engineering's contribution worldwide for the benefit of society. We support the development of chemical engineering professionals and provide connections to a powerful network of around 37,000 members in 100 countries.

We support our members in applying their expertise and experience to make an influential contribution to solving major global challenges, and are the only organisation to award [Chartered Chemical Engineer](#) status and [Professional Process Safety Engineer](#) registration.

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