



Chemeca2025
Shape the future – starting now



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Remembering Yesterdays Lessons to Shape Tomorrows Industry

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ABSTRACT

Significant incidents such as Piper Alpha, Longford, Bhopal and the BP Texas City Refinery disaster have shaped our industry, often at the expense of both human life and the environment. In a world of innovative technology solutions and energy entrepreneurs, it prompts us to ask ourselves: are the fundamentals of process safety being forgotten?

There is a common perception that renewable energy sources such as solar power, renewable hydrogen and its variety of energy carriers are inherently safer and pose fewer process safety risks than our conventional energy forms used today. However, this perception often results in design practices that would not be accepted within existing and highly regulated industries such as the conventional hydrocarbon industry. Because it is not just our hydrocarbon producers that are transitioning, it's our energy and fuel providers as well as our manufacturers. It's the companies who have not previously had to manage the risk of highly flammable or toxic materials.

Ensuring hazards are well understood is the first step in the process safety journey but the controls we adopt are crucial for the safe operation of these new facilities. This presentation will explore examples of these practices adopted in new energy projects and highlight the potential dangers of failing to learn from the past. The failure to learn from past mistakes would be an even bigger tragedy. For instance, a better understanding of the impacts and extent a loss of containment of methyl isocyanate may have paired with proper emergency response arrangements could have mitigated the consequences of Bhopal. Similarly, the safe siting of occupied buildings at the BP Texas City Refinery could have saved a number of lives and reduced the number of injuries among personnel.

With consistency in sharing and applying knowledge we can shape our future – starting now, and not as the result of a new process safety incident. Because an accident in the development phase will significantly set back the confidence in our energy transition.

KEY WORDS

Historic incidents, Design, Renewable Energy, Inherent Safety, Hydrogen, Solar Energy

BIOGRAPHY

Alice is a chartered chemical engineer and experienced safety and risk engineer with diverse expertise in subsurface, process, and operations across the New Zealand and Australian energy sectors. She is highly skilled in assessing and quantifying risks and her passion for process safety is demonstrated through her commitment to improving individuals' and organisations' understanding of process safety, and safety in design.

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