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When Is Enough, Enough?
How Engineers Really Decide What Is SFAIRP.

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ABSTRACT

Hazardous industries in Australia and New Zealand operate under the legal duty to reduce risks so far as is reasonably practicable (SFAIRP) (or ALARP for offshore). While legislation defines this obligation, its effectiveness depends on how engineers interpret, apply, and defend it in real-world decisions, balancing risk, cost and conscience.

This presentation will explore the empirical findings of the speaker's Master's Thesis on how professional judgement in SFAIRP is formed, influenced, and exercised across Australian and New Zealand sectors; identifying patterns in judgement formation, areas of convergence and divergence, and practical implications for strengthening defensible SFAIRP application in process safety risk management.

Rather than proposing new rules, this research focused on strengthening the capabilities that underpin the rules, which aligns directly with the conference theme as follows:

***Innovate:** As industries adopt emerging technologies (e.g. renewable integration, digitalisation, and AI-enabled operations), engineers must apply SFAIRP in contexts with limited precedent. Understanding how judgment operates under uncertainty is critical to strengthening engineers' capability to reason under uncertainty, a necessary skill for safe innovation.*

***Integrate:** Effective SFAIRP practice requires integration of legal literacy, ethical reasoning, technical risk assessment, and organisational governance. The research examines how executive leadership, documentation practices, and escalation pathways influence whether SFAIRP is treated as a principled duty, particularly when decisions are escalated or challenged, rather than being reduced to procedural compliance.*

***Impact:** By identifying where interpretations diverge and where confidence in defending decisions varies, the study aimed to support clearer articulation of reasoning, improved cross-sector learning, and stronger embedding of good practice in process safety risk management.*

Whilst the requirements for SFAIRP are written in law, they are delivered through judgment. When we decide what is 'enough,' we decide what risk our facilities and society live with.

KEY WORDS

Risk, SFAIRP, Engineering Judgement, Thesis

BIOGRAPHY

Kim Pullon is a respected process safety leader, engineer, and engaging communicator with deep experience in process safety risk management, process safety competency development, and industry process safety improvement programmes. After two decades of technical experience in operations, Kim is now a Principal Consultant, and Head of Training, for Safety Solutions.

Kim is a Professional Process Safety Engineer (PPSE) and Fellow of the Institution of Chemical Engineers (FIChemE), and Engineers Australia (FIEAust). She has contributed over the years to Safer Together process safety resources and several IChemE Safety Centre publications, continuing to volunteer her time to both organisations. And on weekends, she's the secretary of the Parrot Society of Australia.

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