SALUS

The Hidden Risks of AI in Process Safety: Are We Really Safer?



Hosted by David Jamieson

Process Safety Engineer, Salus Technical Founder

We’ll begin in 5 minutes.

We'll have a Q&A session at the end of the webinar.

Feel free to type your questions into the Q&A box.

We’ll begin in 2 minutes.

We'll have a Q&A session at the end of the webinar.

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Notifications
John Smith marked himself safe during the crisis
1h



Source: https://www.amnesty.org/en/latest/news/2022/09/myanmar-facebooks-systems-promoted-violence-against-rohingya-meta-owes-reparations-new-report/



There is a saying that organisations have no memory; only people have memory, and once they leave the plant, **the accident that occurred there is forgotten about**.

-Trevor Kletz

Overview

01 Busting Some AI Myths

02 Keeping Humans-in-the-loop

03 How AI is already impacting process safety

04 Navigating the Regulatory Landscape

05 Our Learnings from AI projects completed to date

06 8 Steps to Building an AI Adoption Roadmap

07 Conclusion and Q&A

Busting some AI Myths

Alert	Suggests	Drafts	Automated	Autonomous
01	02	03	04	05
AI flags when the valve needs attention	AI suggests next steps, human decides	AI drafts risk assessment, human reviews	AI acts within limits, alerts if needed	AI detects, decides, and acts without human input

Keeping Humans-in-the-loop

01 Accountability Gaps

02 Erosion of Human Expertise

03 Bias and Unequal Risk Exposure

04 False Sense of Security

05 Lack of Transparency

06 Ethical Use of Data

07 A slippery slope to cost-cutting

How AI is already impacting process safety

100+ Safety Managers respond to our survey

- Predictive Maintenance
- Digital Twins
- HAZOP Assistance
- Compliance Monitoring



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Our Predictions

- Enhanced Decision-Making
- Better Risk Assessments
- Consistency and Standardisation
- Potentially New Methodologies

Demonstration

Navigating the Regulatory Landscape

The EU’s Approach: Strict, Structured, and Binding

The UK’s Approach: Principles Over Rules

So, what should we do?

Our Learnings from AI projects completed to date

- Narrow, Focused Use Cases Win
- Overcoming the “Black Box”
- Phased Rollouts Matter
- Demand vs. Doubt

8 Steps to Building an AI Adoption Roadmap

01 Define Objectives and Engage Stakeholders

02 Evaluate Technical Infrastructure and Organisational Readiness

03 Structure and Prepare your Data for AI

04 Technology Selection: LLMs

05 Implement Robust Data Security Measures

06 Rapid Prototyping in a Controlled Environment

07 Implement Continuous Learning and Adaptation

08 Strengthen Governance and Institutionalise AI Use

Workforce Implications and Change Management



Conclusion: Striking the right balance

- Start small, scale wisely.
- Invest in training and awareness.
- Engage with Industry Experts.
- Cultivate a culture of continuous improvement.

Conclusion: Striking the right balance

- Begin with a methodical approach, testing AI in pilot projects before expanding its use across the facility.
- Measure success using concrete metrics such as reductions in downtime and the frequency of near-miss incidents.
- Remain adaptable, as AI models may degrade and regulatory landscapes are likely to evolve.
- Always keep human judgment at the forefront of safety responsibilities.

Q&A?